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THE ADOPTION OF CE PRODUCTS IN THE B2B SECTOR

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Dissertation  
Master in Management

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2022

## Acknowledgments

For those who know me, they know how challenging this stage of my life has been, but they also know how proud I am for finally completing it. Between a full-time work and a master's degree, there were several days of exhaustion in which I thought I would not be capable of fulfilling my goals. Thanks to all the support that I luckily have from the ones around me, I was able to go through those moments and gain some confidence (that sometimes hides when we need it the most).

Therefore, I want to thank my family who could not be more proud of me, specially my mother that stood by my side and helped me in the entire process. I also want to thank my close friends, that many times gave me the comforting words that I needed. I cannot forget my boyfriend too, who always put a smile on my face and motivated my work. Another extremely important contribution for my study that I really have to highlight was everyone that helped me contact companies for the interviews- family, friends, colleagues, and even people who I did not know and still helped me. Similarly, I have to thank all the companies that participated in my research, for their interest and availability. Finally, to my supervisors, professor Belém Barbosa and professor Sara Neves, thank you for the time dedicated to my work, for your kindness and sympathy every meeting, for your thorough recommendations and for your motivation and support. Without all of you, any of this would be possible, so thank you!

Finally, I want to dedicate my work to my beloved grandfather that sadly passed away almost one year ago. He was the business man of the family and a true inspiration. He was also, I believe, one of the reasons I am so interested in the area of Business. This one is for you, Avô João, I hope you are proud.

## **Abstract**

Given the environmental importance of circular economy (CE) and the need to promote its adoption, this study aimed to identify the factors that influence the purchase decision of CE products in the B2B sector, which has been so far disregarded in the literature. Particularly, this work was also focused on understanding to what extent the CE factor is valued by companies.

Taking into consideration these purposes, this study assumed an exploratory nature and, thus, a qualitative methodology. More specifically, 15 semi-structured interviews were conducted, having as participants Portuguese B2B companies of different activities and sizes.

This study's results indicated that some factors are extremely important for the purchase decision of CE products in the B2B context. This is the case of sellers' expertise; delivery time, quantity and conditions; certifications; quality; price; criticality; cost minimisation; and, finally, industry forces.

Regarding the CE factor, it proved to be an increasingly recognised and discussed factor. However, while for some businesses it is indispensable or significant in the purchase process, for others CE is still a very little explored topic and difficult to adopt.

In sum, it was suggested that B2B managers should include CE in their strategic planning, always considering costs, benefits, and risks. They should also guarantee the quality and sustainability of CE products to their customers, through certifications and honest marketing, moving away from greenwashing. Additionally, companies should take the initiative to address CE products with their customers or, if required by the latter, educate themselves on the subject and be prepared to fulfil their requests with suitable alternatives.

## Resumo

Dada a importância ambiental da economia circular (EC) e a necessidade de promover a sua adoção, este estudo teve como objetivo identificar os fatores que influenciam a decisão de compra de produtos de EC no setor B2B, o que, até agora, tem sido negligenciado na literatura. Particularmente, este trabalho também teve como foco entender em que medida o fator EC é valorizado pelas empresas.

Tendo em consideração esses propósitos, este estudo assumiu um caráter exploratório e, portanto, uma metodologia qualitativa. Mais especificamente, foram realizadas 15 entrevistas semiestruturadas, tendo como participantes empresas B2B portuguesas de diferentes atividades e dimensões.

Os resultados deste estudo indicaram que alguns fatores são extremamente importantes para a decisão de compra de produtos de EC no contexto B2B. É o caso do conhecimento dos vendedores; o prazo, a quantidade e as condições de entrega; as certificações; a qualidade; o preço; a criticidade; a minimização de custos; e, finalmente, as forças da indústria.

Em relação ao fator EC, este mostrou-se ser cada vez mais reconhecido e discutido. No entanto, enquanto para alguns negócios é indispensável ou significativo no processo de compra, para outros, a EC ainda é um tema pouco explorado e de difícil adoção.

Em suma, foi sugerido que os gestores B2B incluam a EC no seu planeamento estratégico, sempre considerando custos, benefícios e riscos. Devem também garantir a qualidade e sustentabilidade dos produtos de EC aos seus clientes, através de certificações e marketing honesto, afastando-se do *greenwashing*. Além disso, as empresas devem tomar a iniciativa de abordar certos produtos de EC com os seus clientes ou, se exigido por estes, educar-se sobre o assunto e estar preparados para responder aos seus pedidos com alternativas adequadas.

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# 1. Introduction

Humans cause environmental damage in several different ways. In terms of plastic, global plastic production by manufacturers is 348 million tons per year (Statista, 2019). Particularly, 60 million tons of plastic are produced in Europe each year and only 30% of the wasted plastic is recycled (Statista, 2019). Although recycling awareness has been rising throughout the years, the numbers are still low. If we keep this trend, it is estimated that by 2050 there could be more plastic in the ocean than fish (Ellen MacArthur Foundation, 2021b).

In order to revert these future results, companies must adopt a more sustainable behaviour. One of the solutions that stand out is circular economy (CE) because it is based on closed loops, made to mitigate the use of resources and the impact of waste from linear economies (Ottoni et al., 2020).

For the purpose of this thesis, CE is defined according to Kirchherr et al. (2017) - “a circular economy describes an economic system that is based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes” (pp.224-225), being therefore present at the micro<sup>1</sup>, meso<sup>2</sup>, and macro<sup>3</sup> level (Kirchherr et al., 2017). In other words, the goal of CE is to achieve sustainable development, a concept that stands for the evolution of the environment, economy and society without compromising the life of the present and future generations (Kirchherr et al., 2017).

It is suggested that globally applying a CE would allow for better waste management and a decrease in terms of the need for primary resources, thereby lowering GHG emissions and positively affecting the natural system (Ellen MacArthur Foundation, 2021a). As concluded by a study report applied to some European countries, producing in the terms of a CE would reduce carbon emissions approximately by 3 to 10%, create more than 50,000 employment opportunities, and improve the trade surplus by 1 to 2% of GDP (Wijkman & Skånberg, 2015).

With all this in mind, it is clear the importance of adopting a CE in businesses. Yet, to do so, it seems to be necessary to assure that clients will accept, adopt, and value CE products.

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<sup>1</sup> Products, companies, and consumers.

<sup>2</sup> Eco-industrial parks.

<sup>3</sup> City, region, nation, and beyond.

That is the reason why it is fundamental to understand businesses' behaviour regarding CE products, and what factors are behind the decision-making when purchasing or not purchasing these products.

Over the past years, the literature has devoted some effort to understanding CE within the B2C sector. Indeed, there are not only studies that focus on specific individual factors involved in the consumers' decision-making, but also research such as Bigliardi et al. (2020) which integrates those factors into a single comprehensive framework. On the contrary, there is a lack of research about this subject in the B2B market and the B2B market itself, as Lilien (2016) and Saura et al. (2019) suggested. Hence, the present dissertation's purpose is to fill that gap. Considering that, the research problem that will be addressed by this thesis is the following: *What are the main purchase determinants of CE products in the B2B sector?*

Regarding the organisation of the document, it is divided into 5 chapters. The Introduction- Chapter 1- provides a brief contextualisation of the dissertation's theme, followed by the exposition of the investigation problem. The Literature Review is presented in Chapter 2, where research about the factors that influence businesses' purchase decisions regarding sustainable products are detailed. In the following chapter- Chapter 3-, the methodology of this work is described. Chapter 4, in turn, presents the study's findings and Chapter 5 reveals the conclusions. In the last pages, the references and appendix can be consulted.

## **2. Literature Review**

In this section, literature content that are relevant to the subject will be presented. To overcome the limited literature about CE products in the B2B market, the major focus will be on close concepts- sustainable or green products. Therefore, the factors that influence companies' decisions on whether or not to purchase a sustainable or green product will be reviewed.

Nevertheless, because that was not always possible, there are sources of literature based on the B2B market that are not specifically about sustainable products, and there are even a few B2C findings used to reach some B2B conclusions.

The Literature Review is divided into four sub-sections: the supplier-related factors, which are the ones directly connected to the party who is selling the product; the product-related factors, which are based on specific characteristics of the product to be sold; the customer-related factors, which are focused on who is buying the product; and, finally, the external factors, referring to factors more related with the context the customer is inserted in.

### **2.1. Supplier-related factors**

#### **2.1.1. Corporate Reputation**

By developing an environmental focus, companies are able to improve corporate reputation (Hillestad et al., 2010), and gain competitive advantage (Porter & Kramer, 2006) by creating a positive impression of firms' products on stakeholders (Brown & Dacin, 1997). Based on Gotsi and Wilson (2001), corporate reputation is formed on stakeholders' assessment of an organisation according to their experience with the company and anything else that reveals the company's characteristics, allowing them to compare that company with competitors. Similarly, we can say that corporate image is the set of a company's characteristics through stakeholders' eyes (Van Riel & Fombrun, 2007). Specifically, the environmental image of a company is associated with its characteristics regarding the environment from the customers' point of view (Amores-Salvadó et al., 2014).

Research on sustainability among businesses tends to focus on the B2C sector, but B2B should also be given attention as industrial manufacturing represents the largest responsible for resource expenditure (Kapitan et al., 2019). Having more stakeholders involved, building a brand in the B2B sector is significantly more challenging than in the B2C sector be-

cause the focus is on the corporation instead of on the product (Sheth & Sinha, 2015). Also, it is important to note that corporate image can bring better results for B2B companies when compared to B2C (Kumar & Christodouloupoulou, 2014).

Mudambi (2002) revealed that brand image may be underestimated, but it is essential for bigger companies that need to make purchase decisions in riskier scenarios. Seeking ethical conduct (which includes developing environmental measures) turns corporate image more important than price, product, and performance in terms of competitive advantage (Xie & Boggs, 2006). With this in mind, firms may take into consideration brand image (Viardot, 2017), and will be cautious when it comes to greenwashing- the attitude of spending resources to look sustainable, but not act like it (Kapitan et al., 2019).

The signalling theory states that brand image may signal reliability and other qualities, enhancing the companies' reputation, and allowing customers to feel safer in the purchase decision, decreasing the risk involved (Brach et al., 2018). Accordingly, research by Vesal et al. (2021) concludes that there is a positive causal relationship between environmental concern from B2B organisations and brand image. In other words, companies with an environmental focus demonstrate critical values (Lai et al., 2010), and not just profit ambition, showing emotionally intelligent leadership (Sheth & Sinha, 2015) that contributes to enriching brand image.

As expected, brands that manifest sustainability as their priority are considered unique and carry a significant value (Mariadoss et al., 2011). Therefore, Vesal et al. (2021) deduces that a valuable brand image indicates a strong position, as well as outstanding features. Additionally, in the risky B2B decision-making, those valuable brands provide credibility, thus less risk and a lower cost of information (Vesal et al., 2021). As a result, customers will become loyal to the company (Srivastava & Sharma, 2013). It was therefore concluded that a positive brand image causes a positive market performance (Vesal et al., 2021).

Gelderman et al. (2021) reached the same conclusion: in the B2B sector, a green brand image will increase buyers' green satisfaction, which in turn will positively affect their green loyalty to the company (Gelderman et al., 2021).

There are other sources of studies that even divide corporate reputation into reputation for quality, and social responsibility. When it is hard to predict how the product will perform, companies will assume a certain level of quality equivalent to the reputation for quality a company has (Kotler & Pfoertsch, 2006). Indeed, Poulakidas and Dion (2016) demonstrat-

ed that the reputation for quality positively affects the buyer intent. On the other side, there is corporate social responsibility. Sen and Bhattacharya (2001) presented that, when assessing performance, products whose companies have a reputation for corporate social responsibility are not seen as meaningful. Contrarily to what they expected- because of the previously mentioned finding-, Poulakidas and Dion (2016) concluded that corporate social responsibility does positively affect B2B buyer intent.

### **2.1.2. Congruity**

The self-congruity theory states that consumers assess products or brands by associating personality features to those products/ brands and comparing those features with their own personalities (Sirgy, 1985). Although this theory is applied to a B2C setting, it may also be applied to B2B.

He et al. (2018) explained that the brand image of an organisation can be seen through its values. Given that, there is brand value congruence when the brand values of two organisations match (He et al., 2018). As a result, companies can become partners and benefit from shared ideals, as well as superior financial results (Campbell et al., 2010).

Brands can be associated with human features in order to allow a comparison between them, and that comparison will create some kind of interaction, intensifying their relationship (Gupta et al., 2010). As the brand value congruence gets more notorious through the buyer's eyes, a stronger sense of brand identification will arise (He et al., 2018).

Then, that sense of brand identification- because of value congruence- will result in identity-congruent behaviours, affecting relationship qualities (He et al., 2018). The identity-congruent behaviours studied in this research were brand trust, word of mouth, and cooperation in value creation (He et al., 2018), being the first related to the purchasing company itself, contributing to sustain its identity, and the last ones related to promoting the purchasing and selling companies' identities (Lam et al., 2012).

### **2.1.3. Sellers' Expertise**

Tsai et al. (2010) believe that for making customers purchase a company's product, that company must have a skilled sales force. Thanks to those skills- mostly related to the know-how regarding sustainable products- companies are able to maintain loyal customers who

trust the company (Gelderman et al., 2021).

As a matter of fact, being salespeople the ones which face customers in the name of firms, Gelderman et al. (2021) proved that when they are sufficiently skilled, they are capable of positively influencing buyers' purchase decision, as well as their satisfaction.

Moreover, the mentioned authors found that the salesforce's expertise is the factor (among the ones studied) that most influences green customer satisfaction and loyalty, meaning that if efforts are applied, salespeople can have a good impact on the decision-making process regarding sustainable products in the B2B sector. All in all, the human factor present in the selling process is essential in B2B relations (Gelderman et al., 2021).

Accordingly, research states that new sustainable products will more likely be accepted by professional buyers if the sales team is qualified enough to discredit unsustainable products, at the same time promoting the company's product and convincing its customers (Mariadoss et al., 2011). Hence, sellers need to have a wide notion of the company's impact on the environment and its product's features and functioning (Mariadoss et al., 2011).

Vlachos et al. (2014) emphasized the importance of starting to communicate the corporate social responsibility (CSR) inside the company and only then, communicating it to the outside. With the help of in-depth interviews, Gabler et al. (2017) developed an illustrative flow that demonstrates the same idea: first, firms should build a solid vision within internal people and after that, they will be ready to communicate that vision to external people. That last step is extremely relevant for salespeople, since they are the ones who deal with external people, thus carrying the most responsibility in terms of providing information (Gabler et al., 2014).

Hence, the salesforce should stand out the organisation's environmentally friendly aspects, differentiating the brand, providing brand knowledge to the customers, and convincing them to purchase their sustainable products (Gabler et al., 2017).

Ganesan (1994) states that when customers believe the supplier will benefit them- even without commitment-, they are not trusting the whole company, they are trusting the specific salesperson. As said before, the purchasing process moves customers' focus from the firm to a more human figure: the seller.

#### **2.1.4. Customer Support Service**

Even after the purchase, customers need support, so the existence of support services is valuable. In the B2B sector, it is common for customers to keep in touch with suppliers, which often allows the creation and conservation of a relationship (Biedenbach & Marell, 2010).

Tombs and McColl-Kennedy (2003) explained that those social B2B interactions between customer and supplier will trigger the customer's representative's emotional side, thereupon impacting its behaviour and improving its experience (customer experience).

Throughout the last years, customer support has become more technological, taking more and more place in the online world (Renard, 2013). Similar to what happens offline in the B2B sector, online customers also feel the need of having support, mainly because they have already experienced offline customer support, so they expect to be assisted online as well, for solving questions or problems with the supplier's representatives (McLean, 2017).

Taking that into account, Graeme (2017) found that if online customers do not have access to customer support, thereby being unable to communicate with a representative of the company, adverse emotions will arise, and customer satisfaction will be deteriorated. Logically, providing online customer support will improve customer experience.

Customer service creates value in post-use, which is the value generated after the use of the product "characterised by after sales customer service, exchange/returns, repairs and maintenance, product up-gradation or buy-back, handling customer complaints or feedback, loyalty programmes, customer communities and managing a regular communication with all the customers" (Jain et al., 2017, p. 653). In the path of customers' experience, this value is created in the level of relational experience (O'Loughlin et al., 2004). Together with the value created in prior levels (value before the use and value during the use), it will make up the total customer satisfaction and loyalty (Jain et al., 2017). Still, to ensure a service of excellence, it is a key factor to have an efficient customer support team (Neslin et al., 2006).

### **2.2. Product-related factors**

#### **2.2.1. Quality**

Companies keep prioritising conventional factors such as quality, so sustainable products

must offer a level of quality at least equivalent to that of non-sustainable products in order to convince them (Gelderman et al., 2021). However, customers frequently see these products as being of poor quality or low performance (Olson, 2013), or not able to fulfil their sustainable purposes (Chen & Chang, 2012). Because of that, companies are usually not willing to pay high prices for green products (Sharma & Iyer, 2012).

Johnson and Ettlie (2001) defined product quality as the extent to which a product can be customised, without defects, and consistent with its description. More specifically, Ali et al. (2011) explained that the quality of sustainable products can be seen by analysing its environmental features.

In other words, sustainable products' quality is based on the products' characteristics that have a sustainable mission (Chang & Fong, 2010), for example, a product with a card-board package that aims to reduce plastic usage and consequent pollution. Yet, it is important to note that, in cases of lack of knowledge or experience regarding a certain product, the corporate image is normally used to predict its quality (Chang & Fong, 2010).

Given the current context of increasing concern with the environment and more demanding regulations, companies must embrace sustainability and offer green products in order to create competitive advantage, but above all to satisfy the environmental needs of buyers, therefore increasing customer loyalty and also competitive advantage (Chen et al., 2006).

Research proved that green products' quality affects customers' purchase decision (Suki, 2016), since it provides customers with satisfaction. Indeed, Gelderman et al. (2021) validated that the quality of sustainable products positively impacts green customer satisfaction in the B2B sector, what definitely makes sense because it only means that industrial buyers get satisfied with good quality products. This study also found product quality to be the third factor that most influences customer loyalty, so it significantly contributes to highlighting the importance of excellence quality in a B2B setting.

Likewise, Chang and Fong (2010) confirmed the positive relation between product quality and customer satisfaction regarding green products. Also, they corroborated the positive impact that green product quality has in green customer loyalty. Equally important, they verified that green customer satisfaction has a direct impact on green customer loyalty.

Particularly, it is also relevant to divide quality into two types: service quality and product quality (Gelderman et al., 2021), being the latter the focus until now. Although product



quality is essential for building value for customers (Mbango, 2019), it is not enough by itself (Pine & Gilmore, 1999). Hence, it is necessary to include service quality as it is a critical factor for increasing customer perceived value (Pine & Gilmore, 1999), which is able to positively affect customers' purchase intentions (Pham et al., 2019). Naturally, service quality will refer not only to the quality of the service while the customer is purchasing, but also to the same before and after the purchase (Jain et al., 2017).

In addition, research found that service quality significantly affects repurchase intention (Zeithaml et al., 1996), through customer perceived value, considering that a high customer perceived value is associated with a high repurchase intention (Suryadi et al., 2018). This happens because when provided with a service of quality, customers get satisfied, increasing their perceived value and starting to trust in the supplier, thus improving the chances of repurchasing the service and recommending it to other buyers in the B2B sector, or even to other people in their personal life (Chai et al., 2015).

### **2.2.2. Price**

Similar to quality, price is a traditional factor that industrial buyers cannot give up (Gelderman et al., 2021). Yet, sustainable products may represent a higher cost in terms of production (Mahenc, 2008), so companies may ask for a higher price to compensate the increase in costs (Sana, 2020).

As a matter of fact, the high costs related to green products' production are frequently responsible for companies not embracing sustainable measures, which is an issue particularly notorious in small and medium-sized enterprises (SMEs) (Ghisetti et al., 2017).

Nevertheless, it was confirmed that offering green products enables the already mentioned increase in price, and consequently the growth of profits (Chen et al., 2006).

There are many buyers that are willing to invest more money than usual to purchase sustainable products, in exchange of a high environmental value (Filip et al., 2010). This often happens when customers are loyal to a brand- knowing that non-sustainable products have a lower price, they are still willing to pay a higher price for green products (Chang & Fong, 2010). Casidy and Nyadzayo (2019) also stated that trust is positively related to loyalty and willingness to pay higher prices in the B2B sector.

On the contrary, there are several customers that are not willing to be sacrificed for envi-

ronmentalism in terms of price (Cheema et al., 2015). In fact, in underdeveloped markets, price is more important to customers when compared to environmental measures (Cobbinah et al., 2015). Williams et al. (2011) also confirmed that sensitivity to price is the most important determinant of purchase in a B2B setting. Additionally, many industrial buyers are not willing to pay higher prices for sustainable products because they consider them as of low-quality (Sharma & Iyer, 2012).

Based on Konuk (2018), we can say that price is the evaluation of the difference between the supplier's price and other alternative's price, and consequent conclusion if that difference is worth it or not in value. Thereupon, an expensive product can be interpreted two ways: an abdication or a potential gain in quality (Grewal et al., 1998). In fact, Gelderman et al. (2021) proved that the price (or fairness) of sustainable products positively affects green customer satisfaction in the B2B sector, that is, customers are less sensitive to price when dealing with sustainable products.

### **2.2.3. Risk**

Most of the time, new sustainable products are completely different from what customers use, so adopting them means making significant changes in the way companies operate (Wang et al., 2020). Not to mention that it is not easy to understand the added value those new products will bring (Edler & Yeow, 2016), because for that, companies need expertise in the area (Wang et al., 2020). Furthermore, adopting sustainable products demands significant investments, whose returns and competitive advantage may not be seen in the short-term (Wang et al., 2020).

As can be seen, the adoption of green innovations represents a risky scenario, also because green products are associated with a higher potential performance risk (Poulakidas & Dion, 2016). For this reason, buyers' purchase decision will be influenced by the perceived risk, making them seek for information beforehand, as the Process Model for Perceived Risk presupposes- that is, they will seek for information that lowers uncertainty, such as a strong corporate reputation (Poulakidas & Dion, 2016).

In cases of difficulty foreseeing the future, the perceived risk is higher (Puto et al., 1985), thereby it is expected that the customer will be less willing to buy the product (Poulakidas & Dion, 2016).

Actually, Poulakidas and Dion (2016) could not prove the causal relation between higher risk and less buyer intent, but that happened because perceived risk affects more probably the purchase decision in situations where the customer does not know much about the product (Cowley & Mitchell, 2003), which was not the case since the participants were mostly people with considerable knowledge about biodiesel- the object of this specific study (Poulakidas & Dion, 2016).

All in all, companies who are less knowledgeable about the product, will have a higher perceived risk (Vize et al., 2013). Consequently, the purchase intention will be negatively affected (Matos & Krielow, 2019).

Henceforth, Gao et al. (2012) suggest that it is essential to distinguish risk-averse from risk-taking customers, being the first willing to incur risky situations in exchange of innovation and the latter the opposite. According to Wang et al. (2020), when deciding to purchase a sustainable innovation or not, risk-taking buyers focus on the possible gains over the possible losses, whereas risk-averse buyers give more importance to what they can possibly lose and disregard what can be earned.

Considering that, risk-taking customers are the ones more prone to accept and value new sustainable products (Cronin et al., 2011). In contrast, the positive effect of sustainable innovations on customer satisfaction and profit will be diminished by risk-averse buyers (Wang et al., 2020). In other words, analysing the study conducted by Wang et al. (2020), we can see that in the case of low risk aversion, the increase in relational performance is greater when moving from low to high green innovation, comparing to the case of high-risk aversion, in which the relational performance is almost constant.

With this in mind, Wang et al. (2020) gave prominence to the fact that companies should first examine customers' behaviour in terms of risk and only then decide whether to offer innovative sustainable products or not. These authors also suggested that when dealing with risk-averse customers, it is important to give them as much information as possible in order to reduce their perceived risk and increase the chances of them accepting the product. Yet, they also noted that selling green innovations to risk-taking customers in the first place may be the best move to improve those customers' performance, easily creating a solid sustainable image of the brand, and possibly decreasing the perceived risk of risk-averse buyers.

#### **2.2.4. Convenience**

It is pertinent to address features of sustainable products that bring added value, being one of them convenience (Stafford & Hartman, 2013). Kumar and Christodouloupoulou (2014) even added that coupling those features with the sustainability factor allows companies to improve their brand image.

As an illustration, in the area of B2B e-services, there is research that demonstrates the impact that perceived ease of use have on the purchase decision (Matos & Krielow, 2019).

Indeed, Matos and Krielow (2019) confirmed that the higher the convenience of e-services, the higher the purchase intention of industrial buyers. Another key finding of their research is that convenience is the factor that most affects purchase intention. Although this study is focused on B2B e-services, it naturally seems indisputable that the same will happen with sustainable products: the more convenient a product can be for a company, the more willing the company will be to purchase it.

#### **2.2.5. Criticality**

Wang et al. (2020) pointed out the relevance of criticality, which was considered as the perceived importance that a company's product represents in the buyer's final product. This factor is expected to negatively affect the growth of relational performance when adopting green innovations.

If the product in question has a high criticality, it will significantly influence the customer's final product, so the customer will have to modify a great part of the manufacturing process to be able to accept the supplier's sustainable product (Wang et al., 2020). Furthermore, new sustainable products are related to uncertainty and consequently high perceived risk, mainly because they are thought to be of poor quality (Olson, 2013). Under the circumstances of high criticality, that perceived risk will be even higher due to the potential impact that adopting a green product can have (Wang et al., 2020).

For these reasons, Wang et al. (2020) proposed and, in fact, confirmed that criticality diminishes the beneficial effect that green innovations have on companies' relational performance. It can be seen that when compared to high perceived product criticality, low perceived product criticality allows a greater positive difference when moving from low to high green innovation.

All things considered, it is crucial that suppliers assess buyers' product criticality (Wang et al., 2020). When criticality is high, companies should call into question the green innovation adoption or proceed with it wisely, assuring the quality of the products (Wang et al., 2020). Alternatively, when there are low critical products for the customer's final product, that should be the primary focus of companies that sell sustainable products (Wang et al., 2020).

### **2.2.6. Distribution**

Madaleno et al. (2007) studied the impact of several factors within distribution on overall customer satisfaction in the B2B environment. Channel satisfaction, that is, the satisfaction of customers regarding the use of each channel separately – direct sales force, agent, or reseller-, was found to positively affect overall customer satisfaction (Madaleno et al., 2007).

Regarding multi-channel integration, Payne and Frow (2004) stated that when all the channels of an organisation are consistent with each other and overall provide a good experience, the relationship between buyers and seller is improved. Identically, Madaleno et al. (2007) confirmed that consistent channels provided by the seller have a positive relation with customer satisfaction.

Channel choice, which is also a factor of multi-channel integration, refers to the range of choices the customers have regarding distribution channels. As a matter of fact, Wallace et al. (2004) corroborated the resultant satisfaction and improved loyalty of consumers when they are given a choice regarding several channels. Transiting this B2C finding to a B2B setting, Madaleno et al. (2007) demonstrated the positive impact that perceived channel choice has on customer satisfaction. This finding makes totally sense as, in some cases, customers will want to deal directly with a superior from the company, but in other cases, they can simply use an online channel instead of a physical one (Madaleno et al., 2007). Likewise, Pecorari and Lima (2021) confirmed that offering multichannel services improves customers' experience factor.

### **2.2.7. Promotion**

Highlighting sustainability in a brand's communication mainly targets environmentally concerned customers, creating competitive advantage (Kumar & Christodoulopoulou, 2014).

Embracing sustainability in the production process and communicating the respective standards to customers will make them create associations, consolidating the brand image (Kumar & Christodouloupoulou, 2014). All in all, if an organisation is effective and successful in communicating sustainable practices, corporate reputation and brand equity will be improved (Fraj et al., 2013). Moreover, customers in the B2B sector are likely to buy from companies that follow sustainable initiatives (Kapitan et al., 2019).

With this in mind, it is the marketing team's responsibility to wisely communicate with stakeholders (Polonsky & Hyman, 2007). Yet, there is a significant problem: communicating sustainability is commonly seen as potentially dishonest, thereby making companies afraid of communicating sustainability as one of their core values (Peloza et al., 2012). It is thus important to use credible and consistent information in order to positively impact corporate reputation and brand equity, and also to be distinguished from brands that are not sincere about their environmental orientation (green washers) (Blenkhorn & MacKenzie, 2017).

Sustainability can be enhanced through a brand's communication by using green packaging, for example (Kumar & Christodouloupoulou, 2014). Sharing the applied green practices and the corresponding results is also extremely important, and that can be done through companies' reports, or specific sustainability reports (Kumar & Christodouloupoulou, 2014). This will create a brand image of sustainability, triggering awareness and appreciation from customers (Kumar & Christodouloupoulou, 2014).

Several research made suggestions on promotion strategies: not listing numerous environmental objectives- because it is simple to commit but difficult to fulfil-, providing a few objectives together with results, getting evaluated by a reliable third party, displaying awards (Blenkhorn & MacKenzie, 2017), receiving accreditation and certification (Casidy & Yan, 2022), etcetera. These would strengthen the brand's image, and consequently improve customers' trust and performance, also weakening green washers (Casidy & Yan, 2022).

Nevertheless, many sustainable products' promotions are unsuccessful since there is too much focus on the green features of the product, being thus important to balance the promotion of a product's sustainable aspects with other relevant characteristics, or even show the complementarity between both (Sharma et al., 2010).

### **2.2.8. Sustainability**

Following Chen et al. (2006), green innovation is the innovation associated with sustainability features, namely “technologies that are involved in energy-saving, pollution-prevention, waste recycling, green product designs, or corporate environmental management” (p.332).

Being relational performance related to customers’ satisfaction with the supplier, as well as with the relationship’s profits, there are reasons to believe that suppliers’ green innovation may negatively affect customers’ relational performance (Wang et al., 2020). Those reasons are higher price, profit only in the long-term, uncertainty about products’ quality, ambiguity regarding green advantages, and needed time for acquiring information, as well as for adaptation of the manufacturing process (Wang et al., 2020).

Contrarily, green innovation may also have a good impact on buyers’ relational performance (Wang et al., 2020). That is due to the possibility of customers minimising waste, creating sustainable manufacturing, thus decreasing production costs, and increasing profits; establishing a good environmental image and reputation; adhering to environmental regulations; lightening environmental impact, as well as responding to green demand (Wang et al., 2020)- all reasons related to environmental concerns, economic benefits, or social positioning (Dyllick & Muff, 2016).

As currently buyers’ environmental concerns are growing and environmental regulations are getting more and more demanding, Wang et al. (2020) proposed and, in fact, proved that the positive effects that suppliers’ green innovations cause on customers’ relational performance are heavier than the negative ones, that is, suppliers’ green innovations will positively affect customers’ relational performance. This means that when buyers notice green innovation efforts from their suppliers, their satisfaction and loyalty toward suppliers will be intensified (Wang et al., 2020).

## **2.3. Customer-related factors**

### **2.3.1. Customer Experience**

First of all, it is essential to consider customers’ inexperience. In an article that explains how certain factors affect the purchase decision of B2B e-services, Matos and Krielow (2019) highlighted that the lack of skills and experience of companies regarding the use of e-services turns the growth of B2B e-services extremely difficult. That lack of skills and

experience may also lead companies to create wrong prospects about the e-service itself, increasing the perceived risk and decreasing the perceived convenience, thereby lowering the purchase intention (Matos & Krielow, 2019). Using the same logic, given the lack of experience of certain companies on buying, using, and/or selling sustainable products in the B2B sector, these companies may perceive a higher risk and lower convenience, thus affecting the purchase decision.

On the contrary, having a past experience also affects the purchase decision. In complex B2B relationships, past or present experiences can lead to actions in the present or in the future (Rodríguez et al., 2018). From this, we can deduct that companies that have tried sustainable products before and did not have a good experience may not be willing to try them again, even if buying from another company.

In the same way, companies that had a good experience with sustainable products would be more likely to try them again, or even to become loyal to the company that provided them that specific product. Based on Jain et al. (2017), providing a good product/ service allows customers to sense good experiences, marking their memory and making them loyal to the brand.

This factor is related to corporate reputation because, as noted before, the latter is built considering several factors, being one of them the experience that customers may have had with the company. Given that, it is a critical factor that firms must take into account (De Keyser et al., 2015).

Pecorari and Lima (2021) reinforced the idea that enhancing customer experience helps CE businesses. Specifically, improving customer experience is a key factor to develop Product-Service Systems (PSS), which in turn have been an important tool to apply CE concepts (Pecorari & Lima, 2021). Thereupon, their research found a strong positive correlation between customer experience and PSS, considering numerous variables: key performance indicators, relationship management, provider's proactivity, integrated information, customer service, and provider's knowledge. Strengthening these factors will consequently provide customers with great experiences, making them desire to go through those experiences again, and transforming them into loyal customers.

Similarly, Correa et. al (2021) explain that customers' experience has an extremely high importance since the value they perceive is directly related to the experience they have. Hence, a good experience will result in a higher perceived value, thus higher satisfaction, as well as



increased trust in the company (Correa et al., 2021). That will rise the probabilities of purchasing the product/ service again and suggesting the company to others (Correa et al., 2021).

### **2.3.2. Loyalty**

Customer relationship management involves building loyalty, which is a tool to control customer's behaviour (Keller & Lehmann, 2003). In the B2B sector, loyalty can be achieved through raising customer perceived value (Roy, 2013).

Throughout the whole literature review, it is possible to understand that factors like green products' quality, price, green corporate image, and the sellers' green expertise positively impact customer satisfaction and, thus, customer loyalty (Chang & Fong, 2010; Gelderman et al., 2021).

Specifically, green customer loyalty can be seen as the customer's will to prolong the relationship with a company that prioritises sustainability, repeating the purchase of its products in the future (Chang & Fong, 2010). It also considers the customer's will to recommend the company's products and accept a higher price (Chang & Fong, 2010).

While behavioural loyalty dictates the intention to purchase the supplier's product/ service again, attitudinal loyalty is associated with the emotional connection between buyer and supplier (Uncles et al., 2003). Working on green customer loyalty will therefore create committed buyers, who will repurchase thenceforth (Gelderman et al., 2021).

## **2.4. External factors**

### **2.4.1. Governmental**

Nowadays, companies have to follow environmental policies of governments, as well as national and international environmental regulations (Chen, 2011), that recently have been growing and getting more demanding (Chang & Fong, 2010). As Blenkhorn and MacKenzie (2017) stated, being socially responsible includes complying with norms.

In the past, environmental regulations generally aimed to limit air and water pollution, as well as waste formation (Iannuzzi, 2017). Starting in Europe with the exigency of green packaging and take-back programs, the number of product-related environmental regula-

tions has been increasing worldwide (Iannuzzi, 2017). For that reason, companies have been focusing on product design and product development teams have been keeping track on these regulations (Iannuzzi, 2017). For some people, this may be interpreted as unfortunate since companies do not do it by initiative, but instead they do it out of obligation because of regulations (Maxwell & Van der Vorst, 2003).

According to Jänicke (2008), smart environmental regulations that propose explicit guidelines and assume a flexible character will lead to ecological modernisation. These regulations will contribute to the minimisation of environmental impact and also to provide competitiveness between companies (Vazquez-Brust et al., 2014).

Accordingly, Weng et al. (2015) explained that the stricter the regulations and the greater the companies' perceived strictness regarding regulations, the more intensively they will comply with the rules. Given that, Weng et al. (2015) proposed and confirmed that governmental intervention fosters green innovation initiatives.

#### **2.4.2. Industry Forces**

In the business world, it is normal that competitors' moves influence companies' decisions (Weng et al., 2015). If a company's competitors embrace new sustainable initiatives, that company will rethink its environmental positioning and consider the improvement of its sustainable practices (Hsu et al., 2013). With this in mind, it is essential that companies are conscious and informed about competitors' products/ services- mainly those from the industry's leaders- in order to maintain a similar level of innovation and preserve competitive advantage (Huang et al., 2009). Sharma and Ruud (2003) also stated that companies' environmental initiatives are significantly influenced by global competition.

Additionally, Pujari (2006) explained that suppliers have a considerable impact on companies' green innovations since they are also responsible for the products' quality, design, and even competitiveness. Moreover, Huang et al. (2009) stated that suppliers may not want to work with companies that harm the environment. Geffen and Rothenberg (2000) added that certain supplier-buyer relationships are capable of encouraging and fostering sustainable initiatives, what highlights the importance that suppliers have on organisations' sustainable innovations.

## 2.5. Summary of the Literature Review

In the following table, there is a summary of all the factors mentioned in the Literature Review, divided by categories. Along with each of them, there is a brief description, as well as the main literature findings and the most relevant supporting studies.

Table 1: Summary of the Literature Review

Factor	Description	Literature Findings	Most Relevant Supporting Studies
<b>Supplier-Related Factors</b>			
<b>Corporate Brand Reputation</b>	Stakeholders' judgement of a company.	A good reputation decreases the risk involved in the purchase and improves market performance. A green brand potentiates customer satisfaction and loyalty. Both corporate reputation for quality and corporate social responsibility positively affect buyer intent.	Brach et al. (2018) Vesal et al. (2021) Gelderman et al. (2021) Poulakidas and Dion (2016)
<b>Congruity</b>	Sense of matching values with the supplier.	Congruity between companies allows beneficial partnerships. The comparison between companies' features grows their relationship, resulting in improved brand trust, word of mouth, and cooperation in value creation.	Campbell et al. (2010) Gupta et al. (2010) He et al. (2018)
<b>Sellers' Expertise</b>	Sellers' knowledge and skills when dealing with customers.	Qualified and knowledgeable sellers positively affect the purchase decision by increasing customer satisfaction and creating customer loyalty.	Gelderman et al. (2021) Mariadoss et al. (2011)
<b>Customer Support Service</b>	After-sale of-line and online contact with supplier.	Customer support allows the development of the relationship between customer and supplier, creating trust, improving customer experience, satisfaction, and loyalty.	Biedenbach and Marell (2010) Tombs and McColl-Kennedy (2003) Jain et al. (2017)
<b>Product-Related Factors</b>			
<b>Quality</b>	Excellence of a product and overall service.	Green products' quality affects customer satisfaction and their loyalty to the company.	Suki (2016) Gelderman et al. (2021) Chang and Fong (2010)
<b>Price</b>	Monetary cost of a product for customers.	Some customers are more willing to pay a higher price for sustainable products. Other customers prioritise price over sustainability, not being willing to pay higher prices. In general, customers are less sensitive to the price of green products.	Filip et al. (2010) Cheema et al. (2015) Gelderman et al. (2021)
<b>Risk</b>	Customer's sense of uncertainty regarding a specific purchase.	Green products represent a lot more risk than usual, so companies seek for information to mitigate it. High risk means less purchase intention when customers have little knowledge about the product.	Wang et al. (2020) Poulakidas and Dion (2016) Vize et al. (2013) Matos and Krielow
<b>Convenience</b>	Product's ease of use.	Convenience, together with sustainability, allows brand image enhancement. Convenience positively affects the purchase intention.	Matos and Krielow (2019) Kumar and Christodouloupoulou (2014)
<b>Criticality</b>	Importance that a product represents in the customer's final product.	Criticality diminishes the beneficial effect that green innovations have on companies' relational performance.	Wang et al. (2020)

<b>Distribution</b>	The way(s) in which the product is offered to the customer.	Channel satisfaction, multi-channel integration, and channel choice impact overall customer satisfaction.	Madaleno et al. (2007) Payne and Frow (2005) Wallace et al. (2004) Pecorari and Lima (2020)
<b>Promotion</b>	Communication strategy.	Promoting sustainable products improves the brand image, creates trust, and creates competitive advantage. Yet, it can be seen as dishonest, so it is necessary to use credible and consistent information.	Kumar and Christodoulou (2014) Blenkhorn and MacKenzie (2017) Casidy and Yan (2022)
<b>Sustainability</b>	The extent to which a product is green and mitigates environmental	Green products may negatively or positively influence customers' relational performance, but the result tends to be positive, due to higher satisfaction and loyalty from buyers.	Wang et al. (2020)
<b>Customer-Related Factors</b>			
<b>Customer Experience</b>	Customer's inexperience or experience with the product or company in the	Inexperience with a product leads to less purchase intention. Past experiences with a product affect customer experience and satisfaction, purchase intention, and loyalty. Enhancing customer experience helps CE businesses.	Matos and Krielow (2019) Rodriguez et al. (2018) Jain et al. (2017) Pecorari and Lima
<b>Loyalty</b>	Relationship between supplier and customer that implies repeated pur-	Customers satisfied with green products will become loyal to the company and, thus, committed buyers that also recommend those products.	Gelderman et al. (2021) Chang and Fong (2010)
<b>External Factors</b>			
<b>Governmental</b>	Government's regulations and policies.	The stricter the regulations, the more intensively companies will comply with the rules and develop green innovations.	Maxwell and Van der Vorst (2003) Weng et al. (2015)
<b>Industry Forces</b>	Pressure from competitors and suppliers.	Global competition and supplier-customer relationships encourage environmentally friendly initiatives.	Weng et al. (2015) Huang et al. (2009) Pujari (2006) Geffen and Rothenberg (2000)

This summary table of the Literature Review is extremely important, as the information contained in it will be essential for the course of the study, namely to be compared with the results obtained and to form conclusions.

### 3. Methodology

In this chapter, the methodology adopted in the dissertation will be clarified. Thus, there will be five subsections: 3.1. Research Question, Objectives and Conceptual Framework; 3.2. Methodology Adopted; 3.3. Sample; 3.4. Data Collection; and, lastly, 3.5. Data Analysis Techniques.

#### 3.1. Research Question, Objectives and Conceptual Framework

As stated before, the aim of the proposed work is to comprehend the decision-making process of companies regarding CE products in the B2B sector, so to understand if the CE itself has a significant weight in the final decision. Accordingly, the research question presented is *What are the main purchase determinants of CE products in the B2B sector?*

In line with the stated research problem, the research objectives defined for this dissertation are the following:

- Identify the main determinants in the decision-making process regarding the purchase of CE products in the B2B sector.
- Identify the perceived advantages associated with CE products by B2B managers.
- Identify the barriers and perceived risks regarding the adoption of CE products by B2B companies.
- Propose strategies to foster the adoption of CE products within B2B sectors.

Below, it is presented the conceptual framework that will be assessed in this dissertation, which was based on the literature review, research problem and the subsequent data analysis, given that new factors emerged. The focus will then be on the connection between the purchase-related factors and the purchase decision of the CE product, in order to conclude how the first affect the latter. Be that as it may, another goal is to conclude whether or not the CE factor is one of the main determinants, finding out if companies actually prioritise it.

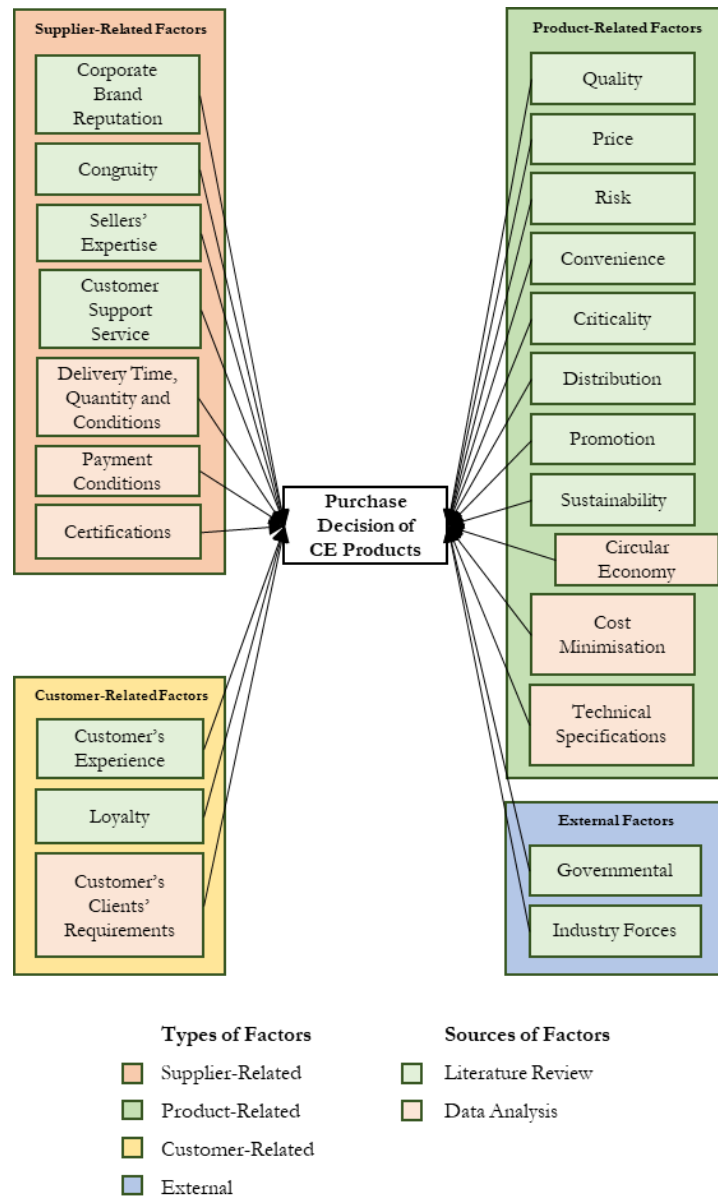


Figure 1: Conceptual Framework

### 3.2. Methodology Adopted

Given the limited literature regarding the purchase of CE products in the B2B sector, this study assumes an exploratory nature. With the goal of fulfilling the proposed objectives, a qualitative methodology is regarded as the most appropriate given its key considerations (Hignett & McDermott, 2015):

- Non-numerical: the study focus on words instead of numbers;
- Scale: the work is based on a (few) specific individual case(s)- idiographic study-, rather than on a generalisation that creates groups;

- Sampling strategy: it will be refined throughout the work in order to include new approaches that may come forth;
- Iterative data collection and analysis: the method may suffer alterations during the study;
- Context: to perceive the situations in context, the viewpoint considered is from the participants;
- Influence of the researcher: the researcher's values influence the cooperation between them and the participants.

Between six sources of data recognised in previous qualitative research- direct observation, interview, documents, file records, physical artifacts, and participant observation (Stake, 1995; Yin, 1994)-, interviews are the chosen source for data collection.

Particularly, semi-structured interviews seem the most adequate for the proposed work. Following its common procedure, interviewees one by one talk with the researcher, who presents a mix of closed and open-ended questions, usually introduced with *why* or *how* (Adams, 2010).

Among the subjects to be addressed, some unpredicted topics can emerge and be discussed (Adams, 2010). In the same way, the order of discussion may change during the interview, depending on the interviewee's answers (Jennings, 2005). Hence, this method can be seen as less objective and formal, as well as more generic and interactive than structured interviews, still having as main goal gathering in-depth data (Jennings, 2005).

### **3.3. Sample**

Given the wide variety of options in the Portuguese B2B sector, it is necessary to define criteria for the choice of the sample. Aiming to build a study with a variety of perspectives, it is important to involve different types of companies, whether in terms of activity, size, environmental concern, among others.

Under those circumstances, the criteria to be used is simply being a company operating in the Portuguese B2B market. Regardless, the company may also operate in the B2C sector, as long as its main focus is B2B. Even though the priority will be given to industrial companies responsible for the production process, it may also be possible to include commerce companies or companies that represent a mix of both processes.

For the selection purpose, certain personally known companies were suggested and others were found online. In both cases, to collect relevant information, these companies' web-sites were analysed.

Moving on to the contact process, out of 40 companies contacted via email, mobile phone, or LinkedIn, 15 demonstrated interest and availability to be part of this study. As presented below, the 15 companies involved were further coded due to confidentiality purposes, as well as to be easily identified throughout the work.

Table 2: Characterisation of the Sample (Companies)

Company's Code	Company's Activity	Sector	Years of Activity	Size	Value assigned to CE
C1	Production of components and construction of buildings	B2B	4	SME (Small)	✓
C2	Commerce of hygiene and cleaning systems	B2B	22	SME (Micro)	✓
C3	Production of beer	B2B(+B2C)	8	SME (Micro)	✓
C4	Production of wine	B2B	18	SME (Small)	✓✓✓
C5	Production of industrial automation machines	B2B	18	SME (Small)	✓
C6	Production of fertilisers	B2B	15	SME (Micro)	✓
C7	Production of cork stoppers	B2B	152	Large	✓✓✓
C8	Commerce of biologic products	B2B	28	SME (Medium)	✓✓
C9	Production of biologic food products	B2B(+B2C)	6	SME (Micro)	✓✓
C10	Production and commerce of food products	B2B	27	SME (Small)	✓✓
C11	Production of virtual physiotherapy equipment	B2B	7	Large	✓
C12	Production of glass bottles	B2B	110	Large	✓✓✓
C13	Construction of buildings	B2B(+B2C)	76	Large	✓
C14	Production of clothing	B2B	25	Large	✓✓✓
C15	Production of textiles for vehicles	B2B	85	Large	✓✓✓

Regarding the interviewees, they should be purchasing managers since they are the responsible people for dealing with suppliers. Equivalent or superior positions may also be great contributions, as long as they have the necessary expertise regarding the purchase process. Questioning these employees will allow the acknowledgment of the reasoning behind the purchase decision-making. The interviewees are described in the table below, and are also codified to remain anonymous and to simplify the identification.

Table 3: Characterisation of the Sample (Interviewees)

Interviewee's Code	Position	Age	Years of Experience in the Company	Years of Experience in the Area	Education	Interview Duration
I1	Founder and Administrator	50	4	16	Production Engineering	31 min
I2	Administrator	44	22	22	Management Informatics	62 min
I3	Director of Sales, Communication and Marketing	36	8	8	Commercial Management and Marketing	48 min
I4	Founder, Administrator and Oenology Director	59	18	30	Oenology	52 min
I5	Logistics and Purchasing Manager	36	4	1,5	Business Management	59 min
I6	Founder and Administrator	57	15	15	Agricultural Engineering	29 min
I7	Purchasing Director	57	33	33	High School	35 min



I8	Sales and Purchasing Director	35	8	4	Tourism	35 min
I9	Founder and Administrator	37	6	6	Marketing	63 min
I10	Quality Director	36	5	5	Food Engineering	32 min
I11	Senior Supply Chain Manager	44	1	20	Business Sciences and Logistics	35 min
I12	Sustainability Manager	42	5	4	Materials Engineering	70 min
I13	Corporate Purchasing And Logistics Director	42	6	10	Economics	70 min
I14	Hygiene and Safety Director	54	9	9	Chemistry and Textile Quality Control	40 min
I15	Sustainability and Intellectual Property Director	39	6	3	Chemical Engineering	48 min

### 3.4. Data Collection

The necessary interviews for data collection were conducted in person and online, via Zoom or Teams. For this purpose, an interview guide was elaborated, having as main contributions the Literature Review and the research question. This guide can be consulted in Appendix 1.

The interviews took place from 17<sup>th</sup> June to 27<sup>th</sup> July 2022, and the duration of each one is presented in Table 3. This process was considered completed after the saturation point was reached in the 14th interview (C14). In other words, the interviews came to a point where nothing new emerged and the data received started being redundant, therefore signalling the moment to stop data collection (Guest et al., 2006).

### 3.5. Data Analysis Techniques

Aiming to analyse the data gathered during the interviews, these were recorded taking into consideration that all the interviewees authorised it, as well as the use of the information provided. Afterwards, the interviews were transcribed and uploaded in the NVivo software. Then, the data was analysed according to Bardin's theory-driven content analysis. Therefore, the material exploration was done through coding operations (Bardin, 1977), in NVivo. This allowed the treatment of results and the respective interpretation (Bardin, 1977), which will be presented in the next chapter.

## 4. Results

In this chapter, the results obtained from the interviews will be analysed and different perspectives about each factor will be presented, including the new factors that have emerged. These results will also be compared with the reviewed literature.

### 4.1. Supplier-Related Factors

#### 4.1.1. Corporate Brand Reputation

Corporate brand reputation seemed to cause some controversy. On one side, some interviewees revealed the importance of corporate brand reputation as a signal of quality, credibility and trustworthiness (I2, I3, I5, I6, I7, I8, I12, I13, I15). Interviewee 5 highlighted that the company works more with certain brands due to quality reasons, so they prefer “to pay a little more to work with brands that are recognized worldwide in the electricity sector” (I5), thus considering that a good reputation means good quality.

*There are brands with whom we work that we already know have fantastic quality, therefore, we are completely free to take the risk of tasting the product and then putting it on the market. This is because these are very well-regarded brands in the market and good adhesion by customers is already expected. (I8)*

This is consistent with previous findings, which explain that if a company’s brand image gives signals of reliability, quality or other advantageous features, its reputation will be improved and customers will experience a decrease in risk and cost of information, positively impacting its market performance (Brach et al., 2018; Poulakidas & Dion, 2016; Vesal et al., 2021).

On the other side, other interviewees think that corporate brand reputation is not relevant to the purchase decision. The reason behind it is that these companies mostly buy raw materials which do not properly have a brand associated with it (e.g. I1, I9, I10, I11, I14): “We work with raw materials. We don’t work with the brand concept as our customers do, for example”, said Interviewee 9. Interviewee 4, in turn, added that reputation can be deceptive: “there are better-known brands, such as X<sup>4</sup>, which is one of the best-known brands of X<sup>4</sup> and we never buy from them because we think there are better ones”. Regardless of the reasons for the insignificance of reputation, the focus seems to be the same for all these companies: “we do not require a certain brand, but rather we guarantee that the require-

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<sup>4</sup> X was used to maintain the anonymity of the given example.

ments of the final product are met”, as Interviewee 11 explained.

These interviewees that assigned little or no importance to corporate brand reputation were not expected, given the literature reviewed. However, these findings can be easily justified by the fact that all these interviewees work in manufacturing companies in which the majority of the inputs are raw materials that are not usually associated with brands. It is also possible that, by experience, reputation is seen as unreliable since it may not correspond to reality.

Additionally, some interviewees demonstrated considerable concern about companies’ reputation for social responsibility and sustainability (including CE) (e.g. I4, I7, I8, I9, I10, I12, I14, I15), so we can say that it increases their satisfaction, as well as their loyalty. This corroborates the reviewed studies from Gelderman et al. (2021) and Poulakidas and Dion (2016). However, some appeared to be more interested in the actual green initiatives companies have instead of how green they claim to be since nowadays there are numerous cases of greenwashing (e.g. I2, I15). Accordingly, Interviewee 15 advised:

*I would say to make a life cycle assessment, once again to quantify sustainability (...) Ensure the veracity of the sources they will use as well. And, therefore, consider certifications because of the issue of traceability and transparency of the supply chain. And honesty, be honest. Because it's not worth trying to cheat. There is a lot of greenwashing, do not go that way, follow the way of honesty and the way of knowing how to do things right, quantifying, reporting all objectives and developments, and being transparent.*

#### **4.1.2. Congruity**

Even though this factor was hardly mentioned (directly or indirectly), some interviewees brought it up as a relevant issue. Interviewee 4 gave an example about his company:

*We place a high value on sustainability, we care a lot about companies that are sustainable. As we are a sustainable company that cares about the environment, we demand that our suppliers have this characteristic as well. Therefore, one of the selections also has to do with the sustainability of our suppliers.*

Interviewee 9 even added that, for the purchase decision, it is essential that suppliers can comply with their certifications, so they can share similar standards. Interviewee 15 is in line with the latter and got further into it:

*The automotive industry has increasingly demanding requirements in terms of sustainability. And, therefore, there are more demanding requirements for our suppliers as well. If a supplier tells us that they are not going to work on anything that is an alternative to fossil raw materials, from an energy point of view,*

*they are not going to make life cycle assessments, ... Sooner or later that supplier will be excluded.*

These interviewees' perspectives are compatible with extant literature. When a company compares its features with another company and understands that they share the same values, they will feel identified with each other and may form a positive relationship and a beneficial partnership (Campbell et al., 2010; Gupta et al., 2010; He et al., 2018). Hence, matching values of sustainability and CE objectives with the supplier will contribute to the purchase decision.

#### **4.1.3. Sellers' Expertise**

The majority of the interviewees pointed out the relevance of sellers' expertise (I2, I3, I4, I5, I6, I7, I9, I10, I11, I12, I13, I14). However, some of them considered it a decisive factor and others considered it relevant, although not decisive in the purchase decision. Interviewee 2 clarified his opinion regarding this subject:

*The sales team is what often differentiates a sale from a non-sale. It's exactly about responding to the customer's needs with the most appropriate product and finding solutions. If you go to the supermarket because you need a cloth, there are 50 cloths and you have to choose one... here, as we have sales teams, the opposite happens: there are 50 cloths, but by mentioning your needs and identifying the problem, the sales team can advise the best cloth for you. In these situations, the question of price is even slightly diluted.*

In consonance with Interviewee 2, another interviewee emphasised the importance of sellers' expertise in the adoption of CE by companies:

*As the topic of CE can create doubts in terms of product quality, it is crucial that they prove that there is no room for doubt and have the strength and ability to commercially convince that they will continue to deliver a quality product, maintaining the decision patterns that, until now, were decisive for the purchase process. (I13)*

While it is evident that Interviewees 2 and 13 see sellers' expertise as a purchase determinant, Interviewee 10 does not agree:

*It always has some impact, although it's not a weak sales team that will stop us from buying a product. (...) I would say that it is not an eliminatory factor, but a preferential one.*

Despite the different perspectives, we can still conclude that the salesforce's technical knowledge is crucial, as Interviewees 11 and 12 noted, as well as other qualities such as "flexibility and good communication, initiative, ability to develop new solutions" (I12).

As can be seen by interviewees' feedback, the sales team is valued by customers, whether decisive in the purchase or not. In conformity with Gelderman et al. (2021) and Mariadoss et al. (2011), if the sellers have the right skills and technical knowledge, they will be key drivers for the adoption of sustainable initiatives, such as CE products.

#### 4.1.4. Customer Support Service

Customer support was highlighted in some interviews, given the necessity of good post-sale communication with the supplier, along with their capacity or quality of solving problems (I2, I3, I11, I12, I13, I14, I15).

In particular, technical support seems to be the most prominent factor of customer support. When asked what were the main factors that lead them to repeatedly buy a certain raw material or product from a certain supplier, Interviewee 15 disclosed:

*I would also say technical support, that is, [the support given] whenever it is necessary to make new developments or understand why [a certain] raw material, a certain batch, did not work so well or why it did not fulfil a requirement (...) Therefore, the quality of the response in the after-sales service is also one of the criteria that is taken into account when evaluating the supplier.*

Interviewee 13 also manifested their great regard for a customer support service of excellence:

*[Brands that are market references] represent quality in the after-sales service, that is, the guarantee of having components, or a network of official distributors of maintenance components for the machines, or [even] repairs that allow the maintenance of the equipment to ensure that machines are in constant use or in constant intensive use.*

This is in line with Jain et al. (2017), which explained that services just like the ones described by interviewees- discussing feedback or complaints, frequent communication, repairs, and maintenance, among others- create value in post-use, which will positively influence customer satisfaction and loyalty. These branches of customer support service are even more indispensable for CE products since companies are still learning about it and its adoption is in progress. In essence, this interaction with the supplier contributes to the maintenance of their relationship and enhances customer experience (Biedenbach & Marell, 2010; Tombs & McColl-Kennedy, 2003).

#### 4.1.5. Delivery Time, Quantity and Conditions

This was one of the most mentioned factors to which the interviewees drew considerable attention (I1, I2, I3, I5, I6, I7, I8, I9, I10, I11, I12, I13, I14, I15). It includes the delivery time, which refers to the extent to which a company is capable of assuring regular deliveries:

*Basically, it is more important to have a large company on the market that regularly ensures supplies than to opt for small and medium-sized companies that, at times, may fail to meet the supplies required by our company. (I7)*

The term “delivery time” also means “the ability to supply in a short period of time” (I6). Interviewee 14 even added: “Delivery times are essential, so we can even pay more if we need something urgently”. Moreover, when it comes to sustainability, one of the requirements for the adoption of CE products is to ensure a competitive position and operationally ensure that delivery deadlines are duly met (I13).

In terms of quantity, it is important to guarantee that the quantity delivered is the one ordered. Interviewee 12 emphasised this point by showing their company’s supplier assessment by score: “(...) we have another [weighting of] approximately 35%, which is the fulfilment of deliveries- if they meet the delivery deadlines and the quantities ordered”. This factor is also relevant in another way: “[We need] the guarantee that the supplier can keep up with the growth of my company to the extent that, no matter how much I need to buy, they have the capacity to satisfy it” (I9).

Finally, the condition of delivery must also be taken into account. Interviewees 5 and 6 demonstrated its importance by giving two examples:

*We buy, for example, stainless steel in tubes, aluminium, and we have already experienced suppliers that delivered the material scratched or even with incorrect dimensions (...) By exclusion and evaluation of suppliers, we remove [those] suppliers from our list (...) (I5)*

*The reliability of delivery [is fundamental]. Since we shop at market X, we have had orders that never arrived or that have been adulterated, not corresponding to what was initially ordered. (I6)*

In spite of not being found in the literature review, this factor is indisputably worthy of being included in the study, given the amount of times mentioned by interviewees and the importance they attributed to it. It is also pertinent to note that, in a CE, this factor is equally significant due to the need of maintaining standards, regardless of adopting more

sustainable practices (I13).

#### 4.1.6. Payment Conditions

The “criteria of competitive commercial condition in the associated payment terms” (I13) is a factor that must also be considered in this study (I2, I6, I8, I12, I13, I14). In other words, this factor is related to the payment method, the payment processing date, and the invoices, among others.

Interviewee 6 gave an example in their context: “companies are not willing to issue legal invoices” “which often becomes an obstacle”.

Considering this, this factor must be included in the study, although it was not reviewed in the literature. It is relevant to understand that certain payment conditions should be performed, regardless of the object of purchase (non-CE or CE products).

#### 4.1.7. Certifications

Certifications are a requirement for several companies at the moment of purchase, as some interviewees disclosed (I1, I4, I8, I9, I10, I12, I14, I15). As Interviewees 10 and 12 said, their company only works with certified suppliers. “We have a standard, a base, in which they have to be certified and then, as they have more certifications ISO/TS, we will also value them more”, Interviewee 12 added.

The ultimate goal of certification is to guarantee the product’s quality and requirements, as Interviewee 1 illustrated:

*Let's talk about a normal steel beam. (...) The beam, when produced in the surgery, has to be according to the norm and this norm fulfils certain requirements, both mechanical and chemical (...) When I buy this beam from the storer, he must supply me, together with the invoice, the certificate. (...) If [customers notice] there is a problem with the steel, (...) I'll check it and show the certificate. (...) Basically, steel has to comply with very specific rules and, therefore, the requirements [and certificates] are essential here.*

In addition, certifications emerged as a key factor for the adoption of CE products. As they provide “security to develop and explore a future with the supplier” (I9), customers are willing to try it as long as the specific CE is certified and the quality of transformation is guaranteed (I13). Similarly, Interviewee 15 shares their perspective:

*(...) what we increasingly ask suppliers for are certifications: LCAs, which stand for life cycle assessments;*

*the carbon footprint; the origin, because traceability is increasingly important (...), even its original geography (...) For example, we use a polyester mesh (...) that is recycled from bottles. (...) in this type of products, we need to have a certification that proves the origin of that raw material, because otherwise we could be deceiving customers. (...) certification is extremely important (...), due to the issue of credibility and veracity of the information.*

Once again, this factor was not predicted in the literature review. However, as it may be clear, the interviewees placed great emphasis on it and, through their perspectives, we can conclude that certifications provide the necessary confidence to boost their first steps towards a CE.

## **4.2. Product-Related Factors**

### **4.2.1. Quality**

Quality is the traditional purchase factor everyone knows and it is not surprising that every interviewee mentioned it. Under these circumstances, all the interviewees considered quality a central factor in the purchase decision. As such, they perform several different quality control tests, depending on their activity- weight and dimensions testing, quantity verification, chemical laboratory testing, visual analysis, taste and/or smell testing, microbiological analysis, print and packaging analysis, sampling, factory visits, etcetera. The certificates, as described earlier, are also significant for quality assurance.

Furthermore, quality seems to be the focus for companies to accept CE products. Several interviewees revealed relevant and interesting experiences regarding CE products' quality:

*We have already packaged one of our products in a biodegradable material, that was more sustainable in terms of waste management. (...) it was a packaging film to pack a granola. This film was valid for one year. We had to purchase the product, which was a very considerable amount, and we had a year to pack it, and our product had a maximum [validity] of eight months. We would have to produce a huge amount to consume the product. It was not feasible and in terms of resistance the film was very weak and ended up causing some problems, even in the packaging itself (...) (I10)*

*(...) sometimes we have some quality problems, they are nothing extraordinary, (...) but they have some impact. (...) It is easier (...) from a quality point of view to make glass from virgin raw material than to make recycled glass, because recycled glass comes with contaminants that we do not want and we have that risk. (...) if someone puts a plate inside a glass recycling bin, a ceramic one, for us it is a huge problem and we have to take it out before going to the oven, because otherwise there is a risk of it reaching the bottle and*



*then it has a defect, and we have to reject it. (I12)*

Taking this quality risk into account, Interviewee 6 concludes that a CE product may be more expensive, but if it assures effectiveness, it will be considered as an option. Nevertheless, if it does not have good results, they will have no interest in it. At the same time, Interviewee 7 clarifies:

*We have technical structures that control the quality of the products. Although there is always a risk [with CE products], it is minimal. That is, we do not produce a certain product and put it into production right away. (...) [Before,] it has to be approved. There are technical specification sheets that the products have to respect before going into production. Otherwise, they are rejected.*

In general, quality is a concern in CE products. Therefore, as long as companies find ways to assure quality to their customers, they are open to it. This is coherent with previous studies, which explain that the quality of sustainable products influences the purchase decision as it increases customer satisfaction and makes them loyal (Chang & Fong, 2010; Gelderman et al., 2021; Suki, 2016).

#### **4.2.2. Price**

Just like quality, price is a conventional factor which was pointed out in all interviews. In like manner, it was common for interviewees to explain that they buy the products which have the desired quality at the lowest possible price (I4, I7, I8, I14). This significance attached to the price is mainly due to the profit margin and the competition (I1, I4, I10, I14). “Sometimes price can derail a deal”, said Interviewee 1.

Although that may be true, there are some occasions when customers do not mind paying a higher price. It may happen because of higher product profitability, quality (especially, in premium products), criticality, or innovation (I4, I5, I7, I8, I11, I15).

Focusing on CE products, the main disadvantage interviewees indicated was the significant increase in price (I1, I2, I3, I5, I6, I9, I10, I15).

*I see an economic downside. For example, in the case of this company that consumes some fossil fuels: if I tried to find an alternative (...), it would be (...) substantially more expensive. (I6)*

“If they guarantee the same quality and similar prices, it will always be a priority”, said Interviewee 3. Equally, some interviewees shared the same opinion (I2, I5, I6, I15). Interviewees 2, 6, and 15 even disclosed that they would accept a slight price increase (maintain-

ing the quality). For Interviewee 15, that could happen if the product enabled “a smaller environmental footprint”, if it allowed them to achieve their “own goals” and, fundamentally, if there was “customer acceptance”.

Overall, we can draw a conclusion similar to Interviewee’s 14 perspective regarding CE products’ price:

*Regarding the price, (...) it depends a lot on whether the difference is significant or not, making me think twice. If the price difference is small, I might choose to buy a CE product. If the price difference is significant, I am not sure, it will depend more on other factors.*

After analysing the results, it was possible to understand that the interviewees’ positions regarding the price of CE products cannot be described by extremes, that is, there were no interviewees who were against their higher prices, nor interviewees who were completely willing to pay more for them. Thus, neither the study by Filip et al. (2010) nor Cheema et al. (2015) were completely validated in this work. Instead, we can conclude that although customers are willing to pay slightly more due to added environmental value- which is in line with Filip et al. (2010)-, they are not willing to accept a significant increase in price because it would sacrifice their business- which is coherent with Cheema et al. (2015). This also corroborates Gelderman et al. (2021) since customers proved to be less sensitive to price with CE products.

#### **4.2.3. Risk**

Risk is also part of the purchase decision. Many interviewees revealed that they perform supplier assessments, which seems to be a way of risk management (I7, I12, I13, I15). “(...) we intend to do a [even] more in-depth supplier risk analysis in the future”, said Interviewee 15.

Under these circumstances, CE products’ risks are also taken into account, so numerous of them were mentioned in the interviews.

*It is always a risk to try different products and, although we have that objective, it is always a very difficult decision and there has to be a good prospect of return and receptivity on the part of our customers. Obviously, we make products for our customers. There has to be a good certainty that, from the start, it will be successful, whether it is the packaging material or the product itself. (I10)*

*[There may be] Lack of confidence in the functioning of the product compared to a new one. In the case of*

*electronics, which we deal with on a daily basis, it has to do with battery degradation and charging capacity.*  
(I11)

Other examples of risks of CE products include products' sanitation (I3), suppliers' adaptation (I12), technological uncertainty (to the extent that products planned for use in the future may not work) (I12), products' quality (I12), products' durability (I5), traceability (insofar as the sustainable origin of the products may not be guaranteed) (I15), products' resistance (I2), available quantity (supply) (I15), and products' aesthetics (I15). On the contrary, Interviewees 1 and 8 said they do not think there are any risks associated with CE products.

Altogether, and as it happens with non-CE products, it all comes down to quality control and certifications. As long as CE products have rigorous requirements and are duly confirmed, the purchase risk is minimal (I2, I7, I10, I12, I13).

When comparing these findings with the literature, we can see that some risks of CE products were identified, what influences the purchase decision- thus, this is compatible with Poulakidas and Dion (2016). However, if customers have access to valuable information about the product, including quality control requirements and certifications, they will perceive less risk and will be more willing to purchase the product (Poulakidas & Dion, 2016; Wang et al., 2020).

#### **4.2.4. Convenience**

Interviewees gave multiple examples that demonstrated the influence of convenience in the purchase decision of CE products (I2, I4, I5, I11, I13, I14, I15).

*One of the big problems with recycling has to do with the mixtures (...) When we buy pants, a blouse, whatever, in most cases it's not 100% one fibre (...) If it's a mixture of polyester cotton with elastane, we are talking about three fibres and for dyeing, for example, a yarn or a mesh of these mixtures, we have to use different dyes. This is because the dye used for cotton is not absorbed by the polyester and the opposite is also true. (...) And when we recycle, we don't know what's in there, because we don't see the labels and probably a lot of them have been discarded because people cut them up.* (I14)

Other negative points about CE products in terms of convenience were related to adaptation, given that suppliers have to readjust their procedures, such as including life cycle assessments (I15), and given that the customers themselves have to adapt to new solutions and new material typologies (I13).

On the other hand, Interviewee 4 expressed the convenience that their CE provides to them:

*Any hindrance, if we didn't operate in a CE, would cause me a problem. Storing things, in general, would be a problem in terms of cost and in terms of space. It would be a complication if, for whatever reason, the CE didn't work.*

Likewise, Interviewee 2 added: “Regarding the issue of reusing, it is important that it is easy, something that after a few uses looks like new and that people can easily understand”.

These findings corroborate the literature reviewed. Being ease of use part of convenience, the easier it is to use CE products, the more convenient it is, and the greater the purchase intention will be (Matos & Krielow, 2019).

#### **4.2.5. Criticality**

Even though criticality was not mentioned much, two interviewees disclosed its importance on the purchase decision:

*(...) everything that we manage to save on the purchase of these materials will later help us with the total cost of the process. What we sell and make money from is wine. Whether it's glass, corks or cardboard, we'll minimise costs. (I4)*

As can be seen, the requirements for products which are not so important in the final product are different from the ones for critical products- in these cases, in terms of price.

In terms of sustainability, some interviewees showed interest in adopting low-critical CE products, such as protective material for transport (I4), and packaging (I2, I3, I9). Interviewee 13 gave another example:

*I would say that it will always be everything that is derived from petroleum or processed products, therefore (...) fuels, lubricants, bituminous products and emulsions (...). Essentially that. Everything can be transformable, everything can be recyclable and it has a big consumption in our industry.*

This is in agreement with Wang et al. (2020), who found that criticality decreases the positive effect that green innovations have on performance, so customers tend to prefer adopting sustainable products that are less critical in the final product.

Contrarily, for some reason, some interviewees want to try or are focusing on high-criticality CE products, such as electrical components (I11), fruits and vegetables (I10), iron and steel (I13), clothes (I14), and fabrics (I15). These can be supported by the fact that the

majority of the companies already have experience with these products, so there is less risk involved (I10, I11, I14, I15). Interviewee 13, in turn, intends to adopt CE products with both levels of criticality and that is being thoroughly planned in advance so the quality is assured and the risk is minimised- this is in line with the recommendations for high criticality products in Wang et al. (2020).

#### **4.2.6. Distribution**

In terms of distribution, some interviewees mentioned that they consider the geography of the supplier or the product's accessibility in the purchase decision (I3, I8, I11, I12, I13, I15).

*Since last year, the country of origin has become a criterion to be taken into account. This is because, since the beginning of the pandemic, we began to have difficulty receiving items from Asia and the issue of price began to be seen in a less critical way. We started trying to find local alternatives- even if the price is a little higher, that somehow relieves us of certain concerns. (I11)*

Interviewee 13 also described the importance of “having parts or having a network of official distributors of maintenance parts for these machines or repairs that allow the maintenance of the equipment”.

Given these points, extant research can be validated with this study since the interviewees' comments seemed to demonstrate the significance of both channel satisfaction and channel choice (Madaleno et al., 2007; Pecorari & Lima, 2021; Wallace et al., 2004). With these comments referring to all products, CE products are also considered for these conclusions.

#### **4.2.7. Promotion**

Promoting the CE of a brand can positively affect customers' purchase decision (I2, I3, I4, I6). “I think that all companies that do this should focus on divulgation to show customers the advantages and real impacts inherent to the CE”, said Interviewee 3.

*We have many suppliers with new products, which are presented to us as from CE. With our products, in restaurants and so on, we also claim that (...) And that has helped us. (...) I think one of the great advantages is being able to advertise, as this helps to sell the product. (...) Advertising to customers that our product is sustainable and organic [and CE] is a way to greatly increase my sales capacity. (I4)*

Nevertheless, Interviewee 2 warned about green-washing: “there has often been an interest

from some companies in promoting what is supposed to be sustainable and is not sustainable at all, it is simply to raise the price”.

Given this, as Interviewees 13 e 15 explained, it is essential to ensure customers that CE products will still fulfil the usual quality (I13), quantify the sustainable initiatives, provide certifications, disclose objectives and developments, and be transparent (I15).

These findings are in line with the reviewed literature. As Kumar and Christodoulopoulou (2014) studied, communicating environmental initiatives such as a CE, will improve the suppliers’ brand image and customers’ purchase intention. For that communication, it is necessary to provide valuable information, namely certifications, and reports, among others (Blenkhorn & MacKenzie, 2017; Casidy & Yan, 2022; Kumar & Christodoulopoulou, 2014).

#### 4.2.8. Sustainability

While for some interviewees, sustainability already is a decisive or considerably important factor when it comes to the purchase decision (I4, I7, I8, I9, I10, I12, I14, I15), for others, it is a factor of little significance or it is slowly gaining some relevance (I1, I2, I3, I5, I6, I11, I13).

In general, the advantages and disadvantages of sustainable products indicated by interviewees were consistent with each other. The most common advantages were matching clients’ demand, positive environmental impact, minimisation of costs, improvement of brand image, and competitive advantage, among others. Similarly, frequently mentioned disadvantages were higher price, lower quality, adaptation process, long-term results, difficulty in measuring the sustainability of products, quantity available, etcetera.

As an illustration, Interviewee 13 justified the initial stage of adoption of sustainability that their company is in:

*(...) it is difficult to have an internalised logic without having yet measured how much the products we buy represent in terms of environmental impact (...) in practice, we have not yet managed to introduce these [sustainability] criteria into our selection process because we are in this initial phase of reflection and we are defining very well the procedure and requirements that will be associated with these products.*

In contrast, Interviewee 12 demonstrated their great focus on sustainable products:

*(...) in recent years, we have focused on the environmental or sustainable performance that companies have*

*and it has already been a condition for contracting raw materials and so on. (...) we've also been working here for some time on the subject of sustainability and we've been measuring, (...) characterising and (...) putting it in our sustainability reports (...) [Sustainability] has recently become a supplier selection criterion.*

All things considered, some interviewees' companies are already working with sustainable products and others are not (yet). In the cases of adoption of sustainable options, interviewees sound satisfied and although there are negative points, the positive ones seem to be greater, even because they keep working with them. Therefore, the sustainability of products and suppliers significantly affects their purchase decision, which is consistent with Wang et al. (2020). At the same time, companies that do not buy sustainable products still do not seem to have overcome the barriers of sustainability, so for them, the negative points are greater than the positive ones, at least at the moment. Thus, the sustainability factor is not relevant to their purchase decision (Wang et al., 2020).

#### **4.2.8.1. Circular Economy**

CE is a topic that was discussed in depth throughout the interviews. Some interviewees revealed that they prioritise CE products, so they extremely value this factor (I4, I7, I12, I14, I15). Others explained that they are in progress- CE is valued, but it is not a determinant factor (I8, I9, I10). Finally, the remaining interviewees demonstrated that although CE is a positive factor, it is still not important enough to be considered in the purchase decision (I1, I2, I3, I5, I6, I11, I13).

Company 12, for example, operates in a CE and takes the CE factor heavily into consideration in the purchase decision. Interviewee 12 further explained the importance of CE for their company:

*In our factory, (...) more than 60% of the raw material we incorporate is recycled glass and glass is infinite (...) We can recycle the times we want that it never ends. (...) And therefore, for us, it is of an importance beyond that. A very important point is [also] the energy consumption. It is much more efficient in terms of energy consumption to make bottles from recycled glass than to make them from virgin raw materials (...) packaging too, (...) we already have demand for various raw materials of recyclable origins, that is, paper, plastic... We already have these criteria.*

Additionally, Interviewee 8 gave some examples of their CE products:

*We have a lot of [recyclable] items. For example, we import various types of chocolates that come packaged in cardboard and have a plastic film inside. This plastic is used as fertiliser. After we eat the chocolate, we*

*can bury the plastic and it is absorbed by the earth. (...) A good example is [also] the detergents we sell that are possible to refill, reusing the packaging (...) [This] refill option, for example, is increasingly demanded. (...) Normally, when there are [new products] that promote sustainability and CE, they are very well accepted by our customers.*

Furthermore, Interviewee 8 disclosed that they choose recyclable and reusable options when given that option. CE is, therefore, a preference but it seems that it is not a determining factor (I8). Finally, Interviewee 3 briefly justified the choice of not adopting CE products:

*Given the size of our company, we don't use CE products much. We tried, little by little, to insert some packaging products (not raw materials) in it, but due to various constraints, we did not use them.*

As mentioned earlier in this study, the CE factor was not included in the literature review due to the lack of studies regarding its influence on the B2B purchase decision. Thus, being the focus of the study, it is added in the present stage of results analysis. In brief, we can say that, similar to the sustainability factor, CE products bring several benefits to businesses. However, due to certain business characteristics (such as the industry, and more specific product characteristics), some companies may not yet be ready to adopt CE products and, for now, the barriers outweigh the drivers.

#### **4.2.9. Cost Minimisation**

Minimising costs revealed to be a priority for many companies. Specifically, for the purchase of certain products, this factor proved to be an important driver:

*(...) raw materials that are not carbon-based allow us to save CO2 emissions, which will ensure that we continue to follow our CO2 reduction plan over the next few years, as well as bring us a financial benefit, because for our CO2 emissions we have (...) a tax that we pay (...) If we can effectively have a positive impact on our operation without adding cost, then we will introduce these raw materials (...) (I12)*

Regarding CE products, several interviewees also highlighted the benefit of minimising costs (I1, I4, I9, I13, I14, I15). Interviewee 1 exemplified:

*There are certain construction works in which we quantify waste, so there is a concern, both environmentally and in economic terms, to buy parts that generate the least possible waste. (...) If a steel tip manages to be incorporated into the final product for the customer, it is much better than being wasted. (...) To be honest, this concern is not sustainable, but an economic concern that, consequently, ends up being sustainable. (...) with the CE, you can make the same product go through the same cycle several times and, then, you can*



*save natural resources which, in my opinion, is fundamental.*

Interviewee 14 also emphasised the criticality of the CE products' quality in cost minimisation: the more contamination the product has, the more waste it will generate, harming the environment and wasting money as well. Given this, Interviewee 14 summed up that "we have to look at the quality [purchase] requirements as a tool to save money". In contrast, Interviewee 15 affirmed that their company does not have lower costs with CE. Instead, they have equal or higher costs for being more sustainable.

Even though cost minimisation was not found in the literature review, it should be included in the study as it was treated by interviewees as a relevant driver for the purchase decision of sustainable products and, more specifically, CE products. Despite claiming that CE did not reduce their costs, Interviewee 15 company may be in a phase where cost minimisation is not yet possible but may be in the long-run.

#### **4.2.10. Technical Specifications**

When in the purchase process, the supplier's product must comply with certain technical specifications defined by the customer or even the customer's clients (I1, I4, I10, I13, I14). "(...) when we look for a certain product, first we have to take into account the raw material specifications according to the research and development data", stated Interviewee 10.

With sustainable and CE products, the same happens (I7, I9, I13, I15). Interviewee 7 asserted: "There are technical specification sheets that the products have to respect before going into production". Interviewee 15 even illustrates the importance of this factor with a particular difficulty their company has with CE products:

*(...) one thing is to produce with those requirements, another thing is to use recycled waste and raw materials that have more limitations in terms of requirements (...) the automotive industry is extremely demanding in terms of colour. One black is not the same as another black. A certain black is that black, period. (...) I think the colour issue, the aesthetic part of the recycled materials can be a hindrance. And maybe the automotive industry will have to rethink its own colour requirements, which may not be as demanding or, for example, go for lighter colours, or whatever, even to make it easier to recycle later.*

This factor was also not identified in previous research. However, it seems to be determinant in the purchase decision of CE products. If a certain product does not fit the customer's requirements, then it is not likely that any purchases will be made.

### **4.3. Customer-Related Factors**

#### **4.3.1. Customer Experience**

A few interviewees commented about previous experiences with a specific supplier or product, which seemed to have affected the (re)purchase decision (I4, I5).

*We buy, for example, stainless steel in tubes, aluminium, and we have already had suppliers that delivered the material scratched or even with incorrect dimensions, and others that delivered everything right. Through supplier evaluation, we remove suppliers from our list (...) (I5)*

Interviewee 4 also mentioned that they have already changed suppliers several times due to quality issues noticed in the quality control process:

*When there is a first refusal, we accept, we return the product and the supplier remakes it and returns it to me. When this happens three times, we stop buying from that supplier and choose another one.*

Concerning CE products, some interviewees also disclosed some negative experiences, that made them reject the products (I3, I6, I10). As an illustration, Interviewee 6 once had the opportunity to try a product of plant origin and, after testing it in an agronomic cycle, it did not match the expectations and the company lost interest in it. Additionally, several interviewees (e.g. I4, I7, I12, among others) described their positive experiences with CE products, which lead them to repurchase it and become loyal to the suppliers.

In essence, this information corroborates previous studies which support that past and present experiences influence decisions (Rodríguez et al., 2018), so negative experiences may lead customers to decide not to buy the product. At the same time, positive experiences bring value to customers, making them trust more and become loyal to suppliers, which ultimately contributes to the purchase decision and, therefore, the development of CE businesses (Correa et al., 2021; Jain et al., 2017; Pecorari & Lima, 2021).

#### **4.3.2. Loyalty**

The interviewees' necessity of trust in the supplier and a good relationship was mentioned multiple times (I2, I4, I5, I6, I7, I8, I9, I11, I15). Not only a good relationship is essential, but also "the longevity of the supplier-company relationship" (I6). In addition, the trust involved in the relationship should be "in the supplier regarding problem management" and "in the ingredient I am buying", explained Interviewee 9.

*Normally, [malfunctions] are not usual because we already have a good group of suppliers that we are used to work with. (...) If everything goes well, from ordering to delivery and checking the material, it is a good indicator to continue working with them. The issue of prices also makes us loyal to certain suppliers. (I5)*

Similar to Interviewee 5, Interviewee 2 revealed that when a new product comes out, their company prioritises their regular suppliers. However, the company will only behave that way “as long as [suppliers] do not fail and as long as they remain competitive in terms of the market” (I2).

As can be concluded, the majority of the interviewees value the relationship with suppliers, so they prioritise purchasing from suppliers to whom they are loyal, including new products, just like CE products. Hence, this behaviour will be maintained if factors related to the supplier and the product itself remain the same, such as the problem management support, as well as the product’s price and quality- this is consistent with extant literature, namely Chang and Fong (2010) and Gelderman et al. (2021).

#### **4.3.3. Customer’s Clients’ Requirements**

Various interviewees made clear that they purchase what their clients demand. For example, Interviewee 13 said that their purchase decision is dependent on “the specifications that the customer defines”.

In terms of sustainable products, some interviewees also explained that they only adopt them when their clients want to try them (I1, I2, I12, I13). In fact, Interviewees 12 and 13 disclosed that it was their clients who took the initiative to try sustainable products, the interviewees’ companies only responded to their requests.

In like manner, several interviewees highlighted that a great driver for CE is their clients (I4, I12, I13, I14, I15). Interviewee 14 clarified:

*[CE products] are starting to enter the market, but why do we buy it? Because our customers demand it. (...) Therefore, the customer (...) is the one who will decide whether they want organic cotton, recycled cotton, or other fibres with other certifications. (...) We have to buy materials accordingly. (...) Usually these things come from them (...)*

Interviewee 4 also illustrated this finding:

*(...) we have the case of the Nordic countries that do not want glass: we made a deal with an investor who was very fond of our wine, but who did not want to buy in glass because he thought the glass polluted a lot.*

*He would only buy it if it was in bag-in-box, which are plastic bags that they later manage to recycle. (...) [So,] We created conditions here in the company to be able to provide them with the bag-in-box and we abandoned the glass.*

Albeit not present in the literature review, this factor should definitely be taken into account in this study. As can be seen, interviewees extremely value their clients' requirements so they will purchase the products demanded. Thus, if their clients ask for CE products, it is likely that they will purchase and supply their clients with it.

#### **4.4. External Factors**

##### **4.4.1. Governmental**

Legal obligations will be decisive for the adoption of more sustainable products (I8, I11, I12, I13). Nevertheless, this adoption may be extremely slow, according to Interviewee 13:

*(...) from the legal point of view, it is being very imposed by legal guidelines of the European commission and others. And companies, not yet prepared or mentalised for this, [react] with fear or [think] that the time is not yet right. And what does that do? It makes (...) this (...) logic of practical transformation not immediate. And everything that is not immediate generates an effect of disbelief or less impact.*

Aiming to purchase CE products, it is also fundamental to consider the governmental matters behind them. As an illustration, Interviewees 1 and 4 are required to be registered with entities that collect their waste.

*I have to call a scrap dealer to my company to take the material and that material is registered with the Ministry of the Environment. All steel waste must always be justified in kilograms (...) I also have to say what kind of steel it is, through its reference. Therefore, there is this environmental concern that is also a legal requirement. The law requires me to do that, I can't put this kind of material elsewhere. (I1)*

Legislation is also frequently responsible for imposing the adoption of CE products. For example, Interviewee 2, due to new legislation, had to start purchasing card cups that replaced plastic ones.

It is also relevant to note that some interviewees suggested the lack of consumer education on the topic (I1, I2, I12), which is something that should be improved by the government.

Comparing these findings with reviewed studies, we can see that the imposition of regulations forces the adoption of more sustainable and CE products (Weng et al., 2015). Furthermore, it is clear that some interviewees adopted or are planning to adopt more sustain-

able products only because of regulations and not by initiative, which is in accordance with Maxwell and Van der Vorst (2003).

#### 4.4.2. Industry Forces

In general, industry forces strongly influence the purchase decision, whether in terms of competitiveness of price and/or quality (I2, I6, I7, I9), or available quantity (supply) (I3).

Equally, one of the greatest concerns about sustainable and CE products in terms of industry forces is the available quantity (I3, I4, I5, I7, I10, I12, I14, I15). Interviewees gave some examples:

*(...) there is a very big downside to the CE at the moment. It's just that we don't have the recycled glass we need. It doesn't exist, that is, all the recycled glass that we collect in the Portuguese market, for example, is not enough for our needs and those of our competitors who are here in Portugal. To give you an idea, at the moment, we even import recycled glass. We buy recycled glass, broken glass, glass from other countries. (I12)*

Competitiveness with sustainable or CE products was also a frequently mentioned point in the interviews (I4, I7, I12, I13):

*Around the 1990s and even at the beginning of this century, there were fierce attacks on the cork industry, namely because of the issues of the cork's musty taste. And, therefore, there were major investments that we made in the area of research and development to combat what were alternative products to cork and which are not sustainable, such as plastic and aluminium. With this work, we managed to come out of this situation stronger. Plastics and aluminium are losing market share and, therefore, cork is a much more desirable product for consumers at the moment, precisely because of this situation of sustainability and the demand for natural products. (I7)*

Analysing the feedback from the interviewees allows the conclusion that they constantly compare themselves to their competitors, as well as track their moves with (new) sustainable or CE products, and, if necessary, adapt in order to maintain competitive advantage. This is in consonance with Weng et al. (2015) and Huang et al. (2009). Although the availability of materials was not found in the literature review, it was revealed that it is a fundamental factor in customers' purchase decision, given the lack of several sustainable materials in Portugal.

#### 4.5. Summary of the Results' Analysis

In the final analysis, some factors must be highlighted, based on the interviewees' answers. This is the case of sellers' expertise; delivery time, quantity and conditions; certifications; quality; price; criticality; cost minimisation; and industry forces. These were the most mentioned factors in the interviews as being important in the decision-making process to purchase CE products. Accordingly, the most relevant categories in this context are product-related and supplier-related factors, as well as external factors.

At a lower but still high level of importance, there are other factors, such as corporate brand reputation, customer support service, and payment conditions. Numerous product-related factors also have this magnitude, such as risk, convenience, distribution, promotion, sustainability, CE, and technical specifications. Customer experience, loyalty, and the customer's clients' requirements are also included in this range. The same happens with governmental matters. Finally, congruity was found to be important, but only for a minority.

Under these circumstances, it is pertinent to mention that the criterion used to conclude the overall importance of each factor was the number of interviews in which it was considered important for the purchase decision. More specifically, if it was considered important in more than 10 interviews, it has extreme significance (+++); in between 5 and 10 interviews, it has significance (++); and, finally, in less than 5 interviews, it has minor significance (+). These conclusions are presented in the table below.

Table 4: Overall Importance of each Factor on the Purchase Decision of CE Products in the B2B Sector

Types of Factors	Factor	Valued by (N° of companies)	Importance in the Purchase Decision of CE Products
Supplier-Related Factors	Corporate Brand Reputation	9	++
	Congruity	3	+
	Sellers' Expertise	12	+++
	Customer Support Service	7	++
	Delivery Time, Quantity and Conditions	14	+++
	Payment Conditions	6	++
Product-Related Factors	Certifications	11	+++
	Quality	15	+++
	Price	15	+++
	Risk	9	++
	Convenience	7	++
	Criticality	10	+++
	Distribution	6	++
	Promotion	6	++
	Sustainability	8	++
	Circular Economy	8	++
	Cost Minimisation	10	+++
	Technical Specifications	8	++
Customer-Related Factors	Customer Experience	9	++
	Loyalty	9	++
	Customer's Clients' Requirements	8	++
External Factors	Governmental	8	++
	Industry Forces	12	+++

## 5. Conclusion

Taking into account the environmental emergency that we are approaching (Ellen MacArthur Foundation, 2021b), the present work aimed to develop the theme of sustainability and, in particular, the theme of CE in the B2B world, namely in the purchase decision process. It is, therefore, pertinent to present the conclusions about the study conducted.

### 5.1. Theoretical Contributions

This study identified factors that influence the purchase decision of CE products in the B2B sector. Those factors were scattered in the literature, often related to green and sustainable B2B purchases. Essentially, this work provides a comprehensive list of purchase factors that was further validated by the empirical study also included in these pages. Despite the current importance of the topic, CE purchase in the B2B context was so far disregarded in the literature.

As shown in the previous pages, some factors are revealed to be extremely important for the purchase decision. For example, if the supplier's sellers are knowledgeable and skilled (Gelderman et al., 2021; Mariadoss et al., 2011), if the supplier complies with the delivery time, quantity and conditions, as well as presents certain certifications that assure quality and sustainability to customers, that will greatly contribute to the adoption of CE products. Quality (Chang & Fong, 2010; Gelderman et al., 2021; Suki, 2016), price (Cheema et al., 2015; Filip et al., 2010; Gelderman et al., 2021), criticality (Wang et al., 2020), and cost minimisation are also factors that carry significant weight in the purchase decision of CE products. Equally, industry forces (Huang et al., 2009; Weng et al., 2015), including availability/ supply of materials, have the same relevance in the decision-making process. Thus, this positions supplier-related, product-related, and external factors as the most crucial. Hence, the main purchase determinants of CE products in the B2B sector have been defined and the research question has been answered.

Focusing on the CE factor, it proved to be an increasingly recognised and discussed factor. For some businesses, it is indispensable or significant in the purchase process, given the associated advantages, namely in terms of reputation and promotion, cost reduction, response to customer demand (which is increasingly focused on sustainability), reduction of

waste and, of course, mitigation of the environmental impact. For others, although positive, CE is still a very little explored topic and difficult to adopt, due to the existing disadvantages and imminent risks, such as product quality, maintenance of delivery times and quantities, customer acceptance, price, the difficulty of adoption and adaptation, the lack of supply of materials, and the uncertainty of the products' circularity, which can often be related to cases of green-washing. Even so, the proper certifications seem to be enough to prove the quality and circularity of these products. In general, we can say that the CE factor is relevant for the purchase decision in the B2B sector, but it has not yet reached an utmost importance, due to the existing barriers for several businesses. Logically, with the development of the CE and associated technology, barriers can be minimised and drivers maximised, thus promoting the adoption of CE products and increasing the importance of this factor in the final purchase decision in the B2B sector.

Considering extant research and the interviewees' answers, the proposed objectives were fulfilled since the main factors in the purchase decision of CE products were defined, as well as the perceived advantages and disadvantages of CE products. With this information, it was also possible to outline some strategies for the adoption of CE products that will be proposed in the following subchapter.

## **5.2. Implications for Management**

Based on a general and integrated view of the entire work, it is now possible to make some suggestions to B2B managers.

Throughout this study, it was possible to scrutinise the importance of CE, both for our planet and for businesses. Therefore, managers should include sustainability and, in particular, CE in their companies' strategic planning. For that purpose, they should study in detail the drivers and barriers that CE specifically presents in their context, through cost-benefit analysis and risk assessments, for example.

Additionally, for the adoption of CE products, companies should not lower their standards. Thereupon, the guarantee of quality and sustainability is central and that can be provided by proper certifications which give the necessary safety and trust to the customers. Similarly, companies should be transparent and promote the business' CE adequately, because that may bring a great benefit in terms of marketing. Thus, some approaches will be extremely useful, like sharing more technical information, sustainability indicators, and presenting



sustainability reports, among others.

Initiative is also a key element in the customers' adoption process. Managers should take initiative and address CE products with customers to foster the discussion of the subject and to incite interest in them. If the initiative comes from customers, managers should be prepared to fulfil their requests, so it is fundamental to educate themselves on the subject and present suitable alternatives.

### **5.3. Limitations and Future Research Directions**

Despite the useful conclusions of this work, some limitations should be pointed out. First of all, although the sample size (15) has been proven adequate for the purposes of this study, enabling the achievement of data saturation, it does not allow the extrapolation of the conclusions to B2B companies in general. As such, it is recommended that similar studies are conducted with other samples, particularly from other countries.

Furthermore, although the companies involved have different sizes and are in different industries and therefore provide different perspectives on the subject, this diversity does not allow the formation of specific conclusions for each company's size and industry. Thus, a suggestion for the future is to carry out research on the impact of the CE factor on the purchase decision of B2B companies in the same industry.

Future studies could consider the use of different methodologies, either quantitative and qualitative. In particular, quantitative methodologies would enable the comparison of the importance of the factors identified in these pages, including the ones that emerged in the interviews and were not found in extant literature. Comparisons between different sectors or cultural contexts would also be interesting avenues for future research.

# Appendix

## Appendix 1

### Interview Script

I will start by thanking you for your willingness to participate in this study. This study aims to understand the decision-making process of the purchase of circular economy (CE) products in the Business to Business (B2B) context.

CE is understood here as “an economic system that is based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes” (Kirchherr et al., 2017, pp.224-225). In other words, the goal of CE is to achieve sustainable development, a concept that stands for the evolution of the environment, economy and society without compromising the life of the present and future generations (Kirchherr et al., 2017).

I would like to tell you that your participation is voluntary, so you can interrupt or give up participating at any time, if you want. The principles of anonymity and confidentiality will be guaranteed. The interview will be recorded for future transcription, but the recordings will be destroyed at the end of the research. In the transcripts, any identifications of people or companies will be omitted, all names will be replaced by pseudonyms. The data collected, including short transcripts, may appear in scientific and other publications that are considered in the dissemination of the results.

Do you agree with these procedures and authorise the start of recording? [If the answer is yes, continue to the questions below. If the answer is no, thank the availability and finish the interview]

#### **Part 1: Characteristics of the interviewee and the company**

1. I will start by asking you for some information for the characterisation of the participants in the study.
  - 1.1. How old are you?
  - 1.2. What is your education background?
  - 1.3. How many years have you been working in your present role?
  - 1.4. How many years have you worked at the company?

1.5. What is your role in the company?

1.6. What sector is the company in?

1.7. Please, take into account the following types of companies (Instituto Nacional de Estadística, n.d.):

- Large Company:

Companies with 250 or more people at service; or companies with sales exceeding 50 million euros and net assets exceeding 43 million euros; or companies that are not classified as SMEs, that is, small and medium-sized enterprises.

- Medium Company:

Company employing less than 250 people and with annual sales not exceeding 50 million euros or total annual balance sheet not exceeding 43 million euros; and that is not classified as micro or small business.

- Small Business:

Company that employs less than 50 people and with annual sales or annual balance sheet that does not exceed 10 million euros; and that is not classified as a microenterprise.

- Microenterprise:

Company employing fewer than 10 people and whose annual sales or total annual balance sheet does not exceed 2 million euros.

Considering the number of workers and the volume of the business, should your company be considered micro, small, medium, or large?

## **Part 2: Company's Purchase Process**

2. I invited you to participate in this study, due to your experience or knowledge about purchases in the B2B context. Can you explain in general terms what are the main criteria for choosing a particular supplier of a raw material or product from another company?
3. Thinking about specific attributes of products, what kind of characteristics do you usually have in mind to compare raw materials or products from different suppliers?
4. Still speaking in general terms, I will ask you to explore some of the factors you men-

tioned. [Note: Explore first those mentioned explicitly, then those that may be implicit in the previous answer. Ask for examples whenever necessary. Leave unexplored topics to the end, and in this case start with: You did not mention... ]

- 4.1. Thinking about the supplier's own characteristics, what are the most relevant criteria, particularly in purchases you have recently made?
- 4.2. Something related is the brand of the products. In your context, what importance does the brand of raw materials or products usually have?
- 4.3. How do your suppliers' sales teams contribute to the decision process in your company (in terms of know-how, customer service, ...)?
- 4.4. [Only if it has been referred] You just talked about product quality. Can you tell me a little more about this, how do you assess quality and how do you integrate that information into the purchase decision-making process?
- 4.5. Speaking now a little more about the price. In what situations can the price be more or less important when you are purchasing raw materials or products in a B2B context?
  - 4.5.1.[Only if it has been referred] So, there are situations where you choose to pay more. Can you explain it better, maybe give some examples?
- 4.6. So, in short, what are the main factors that lead you to repeatedly buy a certain raw material or product from a particular supplier?
5. Now, let's talk a little about sustainability. What is the role of (environmental) sustainability in purchases made by your company?
  - 5.1. How has your company's experience with raw materials or sustainable products been?
  - 5.2. In what situations can sustainability be more or less important in your company's purchase decision-making process?
  - 5.3. What are the possible advantages or disadvantages of sustainable raw materials or products for your company?
  - 5.4. What would lead your company to consider switching to a sustainable raw material or product? Can you give me an example?

- 5.5. Given that you are in a B2B context, how do your company's customers see the integration of sustainable raw materials and products into your production process?
6. Something even more specific is to talk about CE raw materials or products. What is your company's experience with this type of purchase?
  - 6.1. Can you give me examples of CE raw materials or products that have already been proposed to you by suppliers?
  - 6.2. What do you think are the advantages of buying CE raw materials or products?
  - 6.3. And what are the disadvantages?
  - 6.4. What kind of raw materials or products would be more or less likely to opt for a CE, and why?
  - 6.5. What do you see being the possible risks of CE raw materials or products?
  - 6.6. Based on your knowledge, how is the integration of CE raw materials or products into your company's production process seen by your customers?
7. Thinking about all the factors we have talked about throughout this interview, what attributes or criteria would lead you to consider the option for a CE raw material or product?
  - 7.1. Can you give me some examples?
8. To finish, what advice would you give to suppliers that are considering integrating more CE products into their portfolio?

The interview is now concluded. Thank you so much for your availability!

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