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Corporate Social Responsibility and Circular Economy from the perspective of consumers: a cross-cultural analysis in the cosmetic industry

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Abstract: Corporate social responsibility (CSR) and circular economy (CE) have assumed considerable importance. However, some consumers do not positively respond to CSR and CE activities and few studies have analysed the consumers' perspective about the topics. This study aims to understand consumer knowledge and perception about CSR and CE and their willingness to pay (WTP) for products from companies that follow these concepts, examining differences according to demographic characteristics. We carried out a survey with 302 Brazilian and Italian consumers of cosmetic products. Our results show that most consumers have a low understanding of CSR and CE and a low perception of socio-environmental initiatives and CSR and CE companies. Most consumers show WTP for products from companies that follow the concepts. We identify demographic variables that influence the variables studied and the profile of consumers regarding these aspects. We provide insights for companies and policymakers in advancing towards CSR and CE.

Keywords: Corporate Social Responsibility. Circular Economy. Cosmetic industry. Consumer Perception. Purchasing Decision.

1 Introduction

Corporate social responsibility (CSR) and circular economy (CE) have assumed considerable importance in achieving United Nations' sustainable goals (Rashed & Shah, 2021; Schroeder, 2018). CSR advocates that companies have responsibilities towards the societies in which they operate and make profits. They must behave ethically and respect the law (H. Wang et al., 2016). A circular economy represents a cyclical economic model of production and consumption, replacing the "end-of-life" concept with reusing, reducing, repairing, recycling, and recovering materials (Ellen MacArthur Foundation, 2013; Kirchherr et al., 2017). CE aims to minimize and eliminate waste and pollution and maintain the value of materials and resources as long as possible (Nobre & Tavares, 2021). These central topics demand increased environmental and social awareness from consumer and management perspectives (Esken et al., 2018; Jaca et al., 2018; Meseguer-Sánchez et al., 2021).

Previous studies have indicated that consumers are becoming more concerned about the environment and firms' operations in society, and they are raising their expectations regarding the sustainable responsibilities of companies (Bom et al., 2019; Garcia et al., 2021; Sarja et al., 2021). Consequently, companies have been increasingly engaged in CSR and CE activities (Rashed & Shah, 2021). They are changing the way to run their business to help achieve the Sustainable Development Goals (Morea et al., 2021) while aligning their environmental and social strategies to achieve competitive advantage (Zhang & Ahmad, 2021).

However, companies who engage in these sustainable initiatives are not always recognized and rewarded by their consumers. Consumers do not always positively respond to corporate social responsibilities (Afzali & Kim, 2021; Deng & Xu, 2017) and CE practices (Sarja et al., 2021; Sijtsema et al., 2020). Nonetheless, the success of sustainable activities strongly depends on consumers' motivations and attitudes toward purchasing decisions (Camacho-otero et al., 2018; Lakatos et al., 2018; Testa et al., 2020). Also, significant efforts have been put into policies aimed at production processes, and only in recent years, the importance of the consumption perspective has been highlighted (Sijtsema et al., 2020).

In this sense, recent studies emphasize the need for research on CSR (Waheed et al., 2020) and CE (Kirchherr et al., 2017; Lakatos et al., 2018; Merli et al., 2018) from a consumer perspective. Knowledge of consumers' perceptions provides valuable insights into how they experience CSR and CE and if companies' initiatives bring desirable effects (Hur & Kim, 2017; Shi et al., 2017; Sijtsema et al., 2020). Understanding consumers' perception also contributes to companies establishing CSR programs (Huang et al., 2019) and designing circular business models (Lakatos et al., 2018). There are also opportunities for empirical research exploring CSR and CE and their influence on purchasing choices (Fortunati et al., 2020; Morea et al., 2021).

While the literature provides important studies on this topic, researchers often focus on CSR perception and purchase intention. As Khan & Sukhotu (2020) mentioned, research on customer perception of CSR is still developing. Additionally, so far, the literature regarding consumers' perspectives and perceptions of CE has focused on specific solutions and studied consumer acceptance of specific types of products. For example, there are studies involving willingness to pay (WTP) for products with different end of life scenarios (reuse, recycling, and remanufacturing) (Atlason et al., 2017), circular attributes (Boyer et al., 2021; Pretner et al., 2021), or Product-as-Service-Systems (PSS) initiatives (Gülserliler et al., 2021; Loon et al., 2018). In addition, consumers' perception of CE has been analysed through qualitative studies (Korsunova et al., 2021; Sijtsema et al., 2020).

To the best of our knowledge, there are no quantitative studies regarding consumer perceptions about CE practices of companies. The same research gap exists even in the relationship between CSR and CE. Little is known about how these concepts and companies' initiatives are perceived by consumers. Previous studies suggest that consumers' perceptions and responses toward responsible conduct of companies can vary according to age (Lakatos et al., 2018; Vázquez-Burguete et al., 2017), country (C. C. Wang, 2018), gender (Vázquez-Burguete et al., 2017), and educational level (Kevin van Langen et al., 2021). Additionally,

there are differences in consumer perception between developed and developing countries (Huang et al., 2019) and according to industry (C. C. Wang, 2018). However, analysis of the differences in consumer perception, consumer knowledge, and WTP according to different countries and demographic characteristics is still incipient.

Furthermore, although consumers' perceptions of CSR in the cosmetics sector are increasingly important, there are few studies on this topic (S. Wang et al., 2021). Today, many leading cosmetic companies publish exclusive CSR reports to communicate their participation in environmentally and socially responsible activities to various stakeholders, including consumers (Sahota, 2013; Tiscini et al., 2021). However, the study of Vázquez-Burguete et al. (2017) suggests that consumers are still little involved in what CSR represents concerning cosmetic products. Additionally, the importance of CSR and CE for cosmetic industries has been noted in many recent investigations (Fortunati et al., 2020; Kolling et al., 2021; Morea et al., 2021; Ramasamy et al., 2020; Tiscini et al., 2021; S. Wang et al., 2021). Cosmetics is a growing economic sector worldwide, with an annual growth rate of 4.75% (Terakeet, 2021). The global cosmetics market is projected to reach $ 463.5 billion by 2027 (Allied Market Research, 2021). The attention to this sector is also related to the exposure to chemical ingredients, animal testing (Chun, 2016; S. Wang et al., 2021), social impacts of unfair trade, and improper disposal of cosmetics waste and packaging (Bom et al., 2019, 2020; Sahota, 2013).

Our study contributes to addressing the above-mentioned research lacuna by analysing the consumer's perspective on CSR and CE practices of cosmetic companies. To that end, this research contributes to (i) understand consumers' knowledge about CSR and CE, their WTP for products from companies that follow CSR and CE, and their perception regarding the engagement of cosmetic companies in meeting these concepts; and (ii) examine differences in consumers' knowledge, WTP and perception of CSR and CE according to gender, age, schooling, culture (Latin America x Europe). For that, initially, a survey was carried out with 302 Brazilian and Italian consumers of cosmetic products, and later the data were analysed using descriptive statistics and robust regression.

We conducted the study considering that CSR, at the organizational level, and CE, at the operational level, can be used to assess corporate performance in the socio-environmental area. Additionally, to provide novel insights, we adopted cross-sectional international research and analysed consumers' perspectives according to different demographic characteristics. We provide quantitative insights about the cosmetic sector, which remains under-researched in this regard. The results reveal the profile of consumers who have less knowledge, attribute less

value, or have a lower perception of actions in the social and environmental spheres. This information can be used by companies in the cosmetics sector that intend to invest in sustainable actions to plan more effective product lines and marketing campaigns that reach these less informed consumers. Hence, we provide valuable insights into business opportunities for cosmetic companies and implications for policymakers and the government in advancing the transition towards CSR and CE.

2 Theoretical background and hypotheses development

2.1 CSR and CE in the cosmetic industry

The idea of CSR emerged in the 1950s, with the first scientific studies and the publication of Bowen (1953), who highlighted the social impact of business. Over the decades, the theme gained strength and has received attention in academic and professional communities worldwide (Carroll & Shabana, 2010; H. Wang et al., 2016). Although there is no universally agreed definition, the basic idea of CSR is that companies have responsibilities toward the societies in which they operate. In addition to generating profit, they must behave ethically, respecting the law (H. Wang et al., 2016).

Following Dahlsrud (2008), we believe CSR is appropriately represented by five primary dimensions: the environmental dimension, related to a cleaner environment, environmental protection, and the incorporation of environmental concerns; the economic dimension, focusing on economic development while preserving profitability; the social dimension, covering social concerns and contributing to the community; the stakeholder dimension, involving taking into consideration the needs of stakeholders, such as employees, customers, and suppliers; and the voluntary dimension, regarding performance beyond regulatory requirements, based on ethical values and philanthropic activities. Given this, CSR can be considered an approach closer to management and strategic definitions.

According to Wang et al. (2016), globalization has driven much of CSR evolution and, as an organizational phenomenon, CSR has become present in organizations. Reports released by cosmetics companies, especially multinationals, show that the cosmetics industry is no exception (Sahota, 2013). Previous studies have shown that cosmetic companies have undertaken advances concerning CSR, although there are opportunities for improvement (Kolling et al., 2021; Morioka et al., 2021). By analysing the socio-environmental actions of a cosmetics company operating in Brazil and England, Borges et al. (2019) identified significant positioning differences according to each country's socio-environmental policies. The results of the CSR reports of multinational cosmetic companies show evidence of a good level of

attention to CE actions in drafting the reports (Fortunati et al., 2020; Morea et al., 2021). Similarly, Tiscini et al. (2021) identified a considerable increase in CSR reports disclosed by cosmetic companies quoting CE.

In the last years, many definitions of CE have been provided. Ellen MacArthur Foundation (2012, p.7) defined CE as "an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models." The idea is to target zero waste and pollution throughout materials lifecycles, from environment extraction to industrial transformation and final consumers (Nobre & Tavares, 2021).

Aiming to accomplish sustainable development, the circular model replaces the 'end-of-life' concept of reducing, alternatively reusing, recycling, and recovering materials in production, distribution, and consumption processes (Kirchherr et al., 2017). It aims to retain the product value as long as possible (Korhonen et al., 2018) and recovers waste value (Prieto-Sandoval et al., 2018). The circular model requires cyclical and regenerative environmental innovations in how society legislates, produces, and consumes (Prieto-Sandoval et al., 2018).

Following the mentioned studies, CE can be represented by actions to reduce or eliminate the waste and the use of toxic chemicals, recover the value of waste, and encourage responsible consumption. It also involves concerns about reducing, reusing, and recycling materials. Hence, we understand CE is an approach closely related to technical and operational decisions.

Fortunati et al. (2020) and Morea et al. (2021) mentioned that cosmetic companies could use raw natural materials, design durable products whose packaging is easily recyclable, reusable, or disassembled, and prevent obsolescence while maintaining products and materials to produce maximum value. In this sense, strategies oriented to circularity in this sector involve the adoption of circular design or eco-design, use of vegetal origin ingredients, zero waste actions, recycling/reuse actions, reduction of water/energy consumption, reduction of emissions, promotion of responsible use of products, among others (Fortunati et al., 2020; Morea et al., 2021).

2.2 Consumer Knowledge and WTP

Knowledge is related to the understanding of any topic, attitude, or feeling towards it (Kuźniar et al., 2021). In this study, consumer knowledge refers to understanding the meaning

and concept of CSR and CE. Previous studies have found that consumers do not clearly understand CSR (Öberseder et al., 2014) and CE (Sijtsema et al., 2020). Often, companies themselves lack an understanding of CSR (Alizadeh, 2022; Mahmood et al., 2021; Zou et al., 2021) and CE (Sarja et al., 2021).

In contrast to developed countries, people in developing countries tend to be less informed about social and environmental issues (Ali et al., 2017). Prior evidence indicates that customers in developing countries have little knowledge about sustainability or CSR practices (Goyal & Kumar, 2017; Zou et al., 2021). Additionally, there is evidence of the significant effect of age and education on CSR knowledge (Sudha, 2017). Based on the above, there are good reasons to assume that many consumers do not know the concepts of CE and CSR, and the knowledge is influenced by demographic characteristics.

Regarding WTP, it is defined as the maximum price a customer is likely to pay for a product or service (Wertenbroch & Skiera, 2002). In this study, we investigate consumer WTP premium prices for products sold by companies that meet CSR and CE elements. Previous studies have found that CSR has significant positive effects on premium prices (C. C. Wang, 2018). Hwang et al. (2020) identified that philanthropic CSR positively influences attitude towards a brand and WTP premium prices. Similarly, there are consumers willing to pay more for circular products (Magnier et al., 2019; Pretner et al., 2021). Some cosmetics companies also recognize that consumers are willing to pay more for sustainable products (Kolling et al., 2021). Indeed, some consumers pay extra prices for eco-friendly cosmetics products (Singhal & Malik, 2018). Building on that, we hypothesize that consumers are willing to pay a premium for products from companies that follow CSR and CE concepts.

The study of Hsu & Bui (2022) identified that CSR does not have the same influence on customer purchase intention in all countries investigated. The findings of Chu & Lin (2013) also demonstrated significant differences between the United States and China concerning purchase intentions of cosmetics. They found that Chinese consumers are more likely to reward organizations for socially responsible behaviour than American consumers. Miller et al. (2017) identified that WTP premium prices for social responsibility in fruit and vegetable products can vary between countries. Therefore, we hypothesize that the country impacts the WTP premium prices from sustainable responsible companies.

In a study about users' perception of end-of-life scenarios for electrical and electronic appliances, Atlason et al. (2017) found that gender, age, and educational level significantly affect the WTP a premium price for the environmental advantage. Vázquez-Burguete et al. (2017) identified that women show a stronger desire for acquiring cosmetics from responsible

companies than men. The study of Patak et al. (2021) confirms differences in purchase behaviour of green products like detergents, cleaning agents, and cosmetic products depending on gender and is influenced by the level of education. Based on the above, we expect that gender, age, and educational level affect the WTP premium prices.

Some studies have shown that environmental knowledge affects sustainable consumption behaviour (Saari et al., 2021). For Pretner et al. (2021), environmental knowledge might influence WTP more for circular products. Lee & Shin (2010), Sudha (2017), and Boccia & Sarnacchiaro (2018) found that consumers' knowledge of CSR practices affects their purchase intentions from companies that implement them. Similarly, Sijtsema et al. (2020) have identified that consumer acceptance of CE depends, among other factors, on knowledge and understanding. Building on that, we hypothesize that consumer knowledge of CSR and CE influences the WTP premium prices.

Based on the arguments explained above, the study proposes to examine the relationship between demographic characteristics and consumer knowledge about CSR and CE. Additionally, to analyse the relationship between demographic characteristics, consumer knowledge about the concepts, and WTP premium prices. We propose the following research hypotheses.

H1: Many Consumers do not know the concepts of CE and CSR, and the knowledge of these concepts depends on country, gender, age, and schooling.

H2: Many Consumers are willing to pay a premium price for products from companies that follow the CSR and CE concepts (WTP for CSR and CE products), and the WTP depends on country, gender, age, schooling, and Knowledge of Environmental and Social concepts (knowledge of E&S).

2.3 Consumer perception

Perception is related to the selection, organization, and interpretation of information by someone (Kotler & Keller, 2006). CSR perception is understood as how consumers believe that a company is socially responsible (Hur & Kim, 2017). Similarly, in this paper, CE perception is understood as the extent to which consumers believe companies adhere to the CE principles. In addition to the mentioned, perception in this study also refers to knowledge about socio-environmental initiatives.

We have found studies regarding consumer perception of CSR initiatives and companies. Boccia & Sarnacchiaro (2018) indicate that consumers lack knowledge about responsible corporate initiatives. Similarly, Ramesh et al. (2019) found that the respondents felt

no company differed regarding CSR activities. Therefore, we hypothesize that many consumers do not perceive either socio-environmental initiatives or CSR and CE companies.

Previous studies suggest that CSR perception differs according to consumers' demographic characteristics and knowledge about the concept. For example, Maignan (2001) examined the consumers' perception of three countries and found that US consumers value corporate economic responsibilities more than the French or Germans, who are more concerned with businesses' legal and ethical standards. Hur & Kim (2017) found that consumers' cultural values affect their perception of responsible conduct of companies. Chu & Lin (2013) identified that Chinese consumers revealed a higher level of perceived importance of CSR and expectations about CSR of cosmetics companies than respondents in the United States. Similarly, the study of Oe & Yamaoka (2022) suggests that consumer perceptions and behaviour towards CSR of cosmetic companies may differ between consumers in emerging economies and those in developed countries. Building on that, we intend to confirm that consumers from different countries may have different perceptions about the sustainable responsibilities of companies.

Vázquez-Burguete et al. (2017) demonstrate that women show a greater interest and knowledge in responsible cosmetics and companies than men. Therefore, we hypothesize that gender impacts the consumers' perception of CSR and CE companies and initiatives. Regarding circular business models, the study of Lakatos et al. (2018) found differences in sustainable consumption attitudes between the X generation, Millennials (Y), and Post-Millennials (Z). Vázquez-Burguete et al. (2017) also identified differences in the interest and awareness of consumers about the sustainable responsibilities of cosmetics companies according to the participants' age. Based on that, we hope to empirically confirm that age affects consumers' perceptions.

Similar to the identified by Calabrese et al. (2016), we expect that consumers' educational level influences their perceptions. The authors found that the greater the level of education, the greater the sensitivity of customers concerning CSR. Furthermore, we also expect that the people's knowledge of CSR and CE and WTP premium prices affect the consumers' perception of companies and initiatives.

Concerning the cosmetics industry, Ramasamy et al. (2020) studied the effect of human values on the consumers' perception of CSR practices. They found that values such as self-enhancement and openness to change significantly influence consumer CSR perception. Additionally, cosmetics companies recognize that not all customers demand and value sustainable actions (Kolling et al., 2021).

Based on the arguments explained above, the study proposes to examine the relationship between demographic characteristics, knowledge about the concepts, and WTP premium prices with the consumers' perception of socio-environmental initiatives and also with CSR and CE cosmetics companies. We propose the following research hypotheses.

H3: Many consumers do not perceive socio-environmental initiatives (E&S initiatives), and the level of perception depends on country, gender, age, schooling, knowledge of E&S, and WTP for CSR and CE products.

H4: Many consumers do not perceive CSR and CE Companies, and the level of perception depends on country, gender, age, schooling, knowledge of E&S, and WTP for CSR and CE products.

Figure 1 illustrates the theoretical model used to test the four hypotheses.

Figure 1

3 Method

3.1 Data collection and sample description

We performed a cross-sectional international survey in two countries: Brazil and Italy. Both countries have intrinsic characteristics that justify the research. Brazil ranks among the largest cosmetic markets worldwide as the most important in the Latin American region (Statista, 2021). According to a report by the Brazilian Association of the Personal Hygiene, Perfumery and Cosmetics Industry (ABIHPEC, 2021), Brazil is the world's fourth-largest consumer market for personal care, perfumery, and cosmetics, with total sales of $23.738 15 billion in 2019 and the third market in the global ranking of countries that launch the most products annually. Italy has one of the largest cosmetics markets worldwide, and the country is the tenth leading market for cosmetics, fragrances, and personal care products (Statista, 2020). Additionally, these two data sources allowed us to obtain evidence of consumer perception in two different economic, social, and industrial development contexts, providing richer data about turbulence phenomena. Brazil is an emerging country, while Italy is considered a developed country.

Table 1 presents a characterization of the sample. The data was collected from 302 respondents, higher than the suggested sample size to run the multivariate analyses (i.e., a minimum of five cases per parameter/item) (Hair et al., 2007). This study used a non-probabilistic convenience sampling method. The convenience sampling method has often been

used in sustainable consumption studies (Alvarado-Herrera et al., 2017; Deng & Xu, 2017; Singhal & Malik, 2018; Waheed et al., 2020; Zhang & Ahmad, 2021). Convenience sampling is the prevailing non-probabilistic sampling method, in which respondents at hand are recruited at events or locations based on the researchers' convenience of questionnaire collection (Wolf et al., 2016). Regarding the data collection procedures, we used non-personal data collection through the Google Docs tool. The questionnaire was sent to respondents through social media apps and email.

Table 1

3.2 Survey Instrument

The data collection instrument used in this research was a structured questionnaire divided into blocks (Appendix). The collection instrument was built based on the literature, and the main articles that served as a basis are presented in Table 2. The first block of questions was related to CSR, while the second block was related to CE. In both blocks, after answering their knowledge about the two concepts, the respondents were asked to indicate their agreement with each of the statements about CSR and CE on a 7-point Likert Scale (from 1 = Fully Disagree to 7 = Fully Agree). Still, both blocks address multiple-choice questions that investigate the willingness to pay for products sold by companies that implement CSR and CE issues and knowledge about these companies. In the end, the questionnaire addressed issues related to sustainable initiatives developed by cosmetic companies (the possibility to select more than one option), in addition to the characterization of the sample. The questionnaire was originally developed in English but applied in each country's native language (i.e., Italian and Portuguese). The Italian and Portuguese languages have many similarities in their grammatical structure, which reduces the potential discrepancies between versions. Before application, a pre-test with 12 respondents from each country was conducted to evaluate the questionnaire length, content, and understanding.

Table 2

3.3   Validity and reliability tests

We validated the variables consisting of more than one item (CSR and CE) using confirmatory factor analysis (CFA). The analysis was performed using Robust Diagonally Weighted Least Squares (RDWLS) (DiStefano & Morgan, 2014; Li, 2016). The overall model

fit indices were satisfactory ($\chi2$ = 115.795, df = 34, $\chi2$/df= 3,405, CFI = 0.984, TLI = 0.979, RMSEA (90% CI) = 0.089 [0.072, 0.108] suggesting the models' acceptability. Additionally, all factor loadings were significant (Brown, 2015). The internal coherence coefficient was assessed using composite reliability (CR). We obtained values higher than 0.7 (Hair et al., 2007), indicating that each block coherently captured the expected constructs. The items and scales used to assess the variables are detailed in Appendix.

3.4 Common method bias

Following Podsakoff et al. (2012), we used two approaches to check potential bias: procedural and statistical. Common method variance bias addresses the variance derived from the measurement method rather than the measures themselves (Podsakoff et al., 2012). Firstly, we checked procedural aspects that could indicate a low risk of common method bias. Before fully implementing the questionnaire, we pre-tested it in both countries to check for language clarity and interpretation, aiming to avoid differences due to cultural factors. Additionally, we used different scales for dependent and independent variables. Secondly, we used statistical approaches to check for potential method bias. We conducted the Harmans' single-factor test by using exploratory factor analysis. The first factor of the Principal Component Analysis explained 26.53% of the variance, which suggests that common method bias is minimal and allows proceeding with the analysis.

3.5 Data analysis

To test the proposed hypotheses, we analysed the data using a multiple linear regression model based on the weighted least squares (WLS) linear regression algorithm (Chatterjee & Mächler, 1997). WLS regression is a robust regression approach indicated for situations where there is a considerable presence of outliers (De Carvalho et al., 2017), which allows avoiding outlying points from biasing the regression results such as in ordinary least squares (OLS) regressions (Kiers, 1997; Wooldridge, 2020). WLS regression's algorithm de-weighs outlying observations that act as leverage points and bias the estimation of effect sizes and significances in OLS regression (Chatterjee & Mächler, 1997; Kiers, 1997). Initially, we performed an OLS regression and saved the student residuals. Then, we calculate the weight to include in the WLS regression, according to Equation 1, and finally, we estimate the WLS model using the calculated weight.

$$Weight_i = {1}/{(0.5 + (SR_i)^2)}$$

(Equation 1)

where Weight$_i$ is the weight assigned to the i-th observation, and SR$_i$ refers to the studentized residue of i-th observation obtained from the OLS regression. The analyses were performed using the software Statgraphics Centurion XVI Version 16.2.04.

We also used descriptive statistics for some questions. Aiming to understand if the respondents have a positive or negative perception of companies' CSR and CE practices, we calculate the mean and standard deviation of the responses related to CSR and CE perception. We used Pareto charts to analyse the frequency of companies that respondents cited that adhere to the principles of CSR and CE. We also used Pareto charts to analyse the elements of CSR and CE that respondents most perceive being carried out by companies. Finally, we used a chart based on response frequencies to analyse the most known sustainable initiatives developed by companies.

To perform the statistical analyses, the variables were coded as shown in Table 3.

Table 3

4 Results: Statistical Analysis

4.1 Knowledge of CSR and CE concepts

Table 4 presents the coefficients and p-values obtained in modelling respondents' knowledge about the concepts of CSR and CE. The models were built preserving only the significant terms. As can be seen, consumers who have the slightest knowledge about CSR and CE live in Brazil, are older and have a lower level of education.

Table 4

Figure 2 presents graphs of two-factor interactions showing the effect of Country, Age, and Schooling on Knowledge about CSR, while Figure 3 presents the effect of the same factors on Knowledge about CE. These graphs were drawn, keeping the other explanatory variables (which do not appear in the graphs) at their average levels. Clearly, on average, older people with a lower level of schooling have less knowledge. Such findings are not surprising, as there is prior evidence that the level of education increases knowledge and that young people tend to be more aware of sustainable issues. Patak et al. (2021) identified that consumers with a tertiary level were more influenced by environmental concerns than other factors in their purchase intention of green chemicals. In a study with young adults, Korsunova et al. (2021) found that the respondents were relatively knowledgeable about CE meaning. Oe &Yamaoka (2022)

identified that young consumers were more interested in and focused on cosmetic companies' ethical aspects and CSR strategy.

Regarding knowledge of CSR and CE concepts, the average value in Brazil is 0.37 and, in Italy, 0.57. Considering the scale used (0 to 1), it can be concluded that in both countries, there is still ample opportunity to disseminate socio-environmental concepts as those covered by CSR and CE. A possible explanation for the knowledge of Italian consumers to be higher lies in the fact that Italy has regulations on mandatory nonfinancial disclosure (Balluchi et al., 2020; Mion & Adaui, 2019). In this sense, companies disclosing sustainability reporting practices can increase consumers' knowledge about these issues. Similarly, CE is a priority and part of the European Union industrial strategy, in which Italy is part of the most advanced countries in pursuing operations according to CE principles (Mazur-Wierzbicka, 2021).

Figure 2

Figure 3

Based on the above and p-values presented in Table 4, our results partially support the hypothesis in H1. Many consumers do not know the concepts of CE and CSR, and the level of knowledge depends on country, age, and schooling, but it is not influenced by gender. Possibly, knowledge is not influenced by gender because all consumers, regardless of gender, receive the same information about the concepts.

4.2 WTP for products produced in accordance with CSR and CE concepts

Table 5 presents the coefficients and p-values obtained in modelling the WTP for CSR and CE products. As can be seen, consumers who are less willing to pay some additional amount for these products are younger, male, with less schooling, and less knowledge of E&S.

Table 5

Figure 4 presents two-factor interaction graphs revealing the effect of Country, Gender, and Age on WTP for products produced by companies that follow CSR criteria, while Figure 5 presents the effect of the same factors on WTP for products produced by companies that follow CE criteria. These figures are similar and indicate that, on average, consumers are willing to pay around 14% more for cosmetic products that they identify as being produced according to

CSR and CE concepts. We observe that consumers are willing to pay a significant amount, often exceeding the amount necessary for companies to meet CSR and CE requirements. In contrast to that identified by Diallo et al. (2021) and Boccia et al. (2019), our findings suggest that consumers are WTP premium price for cosmetics of companies that carry out CSR and CE actions.

In both cases (Figures 4 and 5), it is observed that the WTP premium price is lower in men compared to women (and this difference in WTP depending on gender is more intense in Italy and weaker in Brazil). Atlason et al. (2017) have already identified that females were more prone than males to pay a price premium for environmental advantage. In the cosmetic sector, women show stronger desire for acquiring cosmetics from responsible companies than men (Vázquez-Burguete et al., 2017).

It is worth noting the inversion in the slope of the lines in the Country x Age graphs, as follows: in Brazil, the oldest are those who are less willing to pay some additional amount, while in Italy, the youngest are those who are less willing to pay additional amounts. The study of Vázquez-Burguete et al. (2017) in the Spanish context also identified that the youngest respondents were less worried about acquiring cosmetics from responsible companies, paying more attention to tangible aspects and price. Khan and Salim (2020) identified that working women were more conscious of buying green cosmetics, a segment that can afford costlier cosmetic products. A possible explanation for our results is that in Italy, older people are more financially able and therefore, more WTP, which is not necessarily the case in Brazil. For example, in the case of elderly retired people in Italy, more than 40% continue to accumulate wealth, and more than 80% are making positive amounts of saving (Ventura & Yuji, 2021). On the other hand, a survey in Brazil revealed that 49% of the elderly interviewed do not have resources saved, and 42% of the elderly believe that the standard of living is worse today than when they were younger (Economize R7, 2021).

It is also observed that the direct effect of country was not significant. Thus, on average, Brazilians and Italians are willing to pay approximately the same additional price for a cosmetic product produced in accordance with CSR and CE concepts. Furthermore, despite previous evidence that knowledge about environmental issues has a lesser impact on consumers' sustainable purchase behaviour (Joshi & Rahman, 2017), our findings suggest that the knowledge impacts WTP. Our results corroborate Atlason et al. (2017) findings, where people with medium to extended higher education were the most willing to pay a premium price for environmental advantage.

Figure 4

Figure 5

Based on the above, our findings provide evidence to support H2. Many consumers are willing to pay a premium for products from companies that follow the CSR and CE concepts, and WTP depends on Gender, Age, Schooling, and Knowledge of E&S, with some of these effects being moderated by Country.

4.3 Perception of E&S initiatives

Respondents were presented with a list of 10 socio-environmental initiatives to mark those they observe are practiced by cosmetic companies operating in their countries. The number of initiatives identified by the respondent (0 to 10) was transformed to a 0 to 1 scale and modelled by robust regression. Table 6 presents the coefficients and p-values obtained in modelling the perception of socio-environmental initiatives. As can be seen, consumers who have the slightest perception of these initiatives are those residing in Brazil, older, with a lower level of schooling, less knowledge of E&S, and less WTP for CSR and CE products.

Table 6

Figure 6 presents graphs of two-factor interactions revealing the effect of Country, Age, and Level of Schooling on the perception of E&S initiatives. It is observed that the perception of E&S initiatives is lower among older consumers and those with a lower level of schooling. Such findings are coherent and related to what has already been identified in the previous sections regarding consumer knowledge of the concepts. The effect of Level of schooling is more intense in Brazil. In Brazil, as would be expected, those with a lower level of schooling revealed a lower perception of socio-environmental initiatives, which also happens in Italy, but as a weaker effect. Additionally, our findings are contrary to what was identified by Yeo & Carte (2020), that CSR knowledge does not contribute to consumer perception of sustainable practices in the banking sector.

It is observed that the average number of E&S initiatives perceived by the respondents was 4.35 (out of a total of 10 initiatives presented), which allows us to infer that there is ample space that can be explored by companies in the cosmetics sector in the countries studied to increase consumers' perception regarding initiatives in the field of CSR and CE. In this regard, although there are higher consumer demand and interest for sustainable actions and options

offered by companies (Bom et al., 2019; Sarja et al., 2021), consumers still perceive few of the initiatives carried out. It is possible that inadequate or ineffective communication may be an explanatory factor for these findings (Lee & Shin, 2010).

Figure 6

Based on the above, H3 is partially supported by our results. Many consumers do not perceive E&S initiatives, and the level of perception depends on Country, Age, Schooling, Knowledge of E&S, and WTP for CSR and CE products, but it is not influenced by gender.

Figure 7 shows the initiatives more cited by consumers in each country.

Figure 7

The use of natural, vegetal, or organic ingredients, no animal testing, and the use of recyclable materials for packaging are the most perceived initiatives in both countries. This is not surprising since consumers are aware of animal protection and alternative ingredients (Amberg & Fogarassy, 2019; Sahota, 2013). On the other hand, encouraging responsible consumption, reducing water and energy consumption, reducing pollutant emissions, and initiatives for 3R products and packaging are the less mentioned in both countries. It is also observed that the preservation of biodiversity is more intensely perceived in Brazil than in Italy which is natural, given that Brazil is well known globally for its abundant natural resources and biodiversity and is charged for their preservation (Jabbour et al., 2018).

4.4 Perception of companies that follow the concepts of CSR and CE

Table 7 presents the coefficients and p-values obtained in modelling the perception (recognition by consumers) of companies that follow CSR and CE concepts. As can be seen, consumers who have the lowest perception are those residing in Brazil, male, with less schooling, less knowledge of E&S, and less WTP for CSR and CE products.

Table 7

Figure 8 presents two-factor interaction graphs showing the effect of Country, Age, and Knowledge on the perception of companies that follow CSR criteria, while Figure 9 presents

the effect of the same factors on the perception of companies that follow CE criteria. In both cases (Figures 8 and 9), it is observed that the perception of sustainable companies is lower in consumers who have less knowledge of E&S. On the other hand, trends regarding age depend on the country. In Brazil, younger respondents revealed a lower perception of companies that follow CSR concepts, while, in Italy, older respondents revealed a lower perception of these companies. This result is related to the one identified by Vázquez-Burguete et al. (2017) that in the Spanish context, older people seem not to be familiar with responsible cosmetic companies.

Figure 8

Figure 9

It is worth noting that, when asked if they are able to distinguish companies that follow CSR and CE concepts, about 15% of the respondents said "no", while another 29% answered that "maybe, but the distinction between these companies is not very clear to me." These two classes add up to 44% of the respondents. Therefore, it is inferred that there is room for companies in the cosmetics sector in the countries studied, chiefly Brazilian companies, to undertake socio-environmental actions and increase the visibility of these actions in front of consumers.

Therefore, our results partially support H4. Many consumers do not perceive CSR and CE Companies, and the level of perception depends on Country (moderated by Age), Gender, Schooling, Knowledge of E&S, and WTP for CSR and CE products, but not influenced by Schooling.

It is worth mentioning that, unlike previous studies that identified perception as an antecedent of WTP or purchase intention (Afzali & Kim, 2021; C. C. Wang, 2018; S. Wang et al., 2021), we identified the opposite. That is, WTP is an antecedent of perception. Thus, our findings allow us to infer that insofar as consumers are willing to pay premium prices for CE and CSR products, they increase their perception of CSR and CE companies.

Tables 8 and 9 present the most cited companies by the respondents. In Brazil, two companies dominate the citations, and a greater number of companies (35) were cited by the respondents. In Italy, a smaller number of companies (10) were cited, but the distribution of these citations was more even among the cited companies. Also, in Brazil, the highest number of citations is associated with companies that follow CSR concepts. In Italy, the number of citations to companies that follow CSR and CE concepts is approximately the same.

Table 8

Table 9

Figure 10 presents the dimensions of CSR that respondents most perceive as being carried out by companies, while Figure 11 presents the elements of CE and most perceived by consumers.

Figure 10

Figure 11

Concerning CSR, similar results can be seen between Brazil and Italy. Not surprisingly, the economic issue is most perceived by consumers in both countries. Some differences can be noticed concerning the CE elements, especially regarding the effort to eliminate toxic chemicals, which is more perceived by Italian consumers than Brazilian consumers. This finding confirms the influence of existing legislation. Developing and developed countries have different legislative control on cosmetic products and the usage of their ingredients (S. Khan & Salim, 2020). Some countries of the European Union have already banned the use of potentially harmful ingredients in cosmetics (Bom et al., 2019). Our results demonstrate that Italian consumers seem to be aware of this. Finally, it can be seen that the respondents attributed less value to the incentive for responsible consumption. This result agrees with Kolling et al. (2021) that cosmetics companies have not evolved much concerning sustainable consumption, which is a point of attention and opportunity for companies.

5 Conclusions

Many companies, including those in the cosmetics sector, are changing their processes, products, and services to meet socio-environmental requirements. In this sense, the concepts of CSR, at the organizational level, and CE, at the operational level, can be used to assess corporate performance in the socio-environmental area. In this scenario, characterized by changes in the positioning and products offered by companies, a critical business issue is to evaluate consumers' perception regarding these changes. Thus, this article presented a study carried out simultaneously in Brazil and Italy with consumers of cosmetic products, evaluating their knowledge about the concepts of CSR and CE, their WTP for products from companies that follow CSR and CE requirements, and their perception regarding the engagement of companies operating in the respective countries in meeting these concepts.

Our findings reveal that most consumers have a low to moderate understanding of CSR

and CE concepts and a low to moderate perception of socio-environmental initiatives and CSR and CE companies. On the other hand, most consumers have shown a willingness to pay premium prices for products from companies that follow CSR and CE. We identify the demographic variables that influence the mentioned variables and the profile of consumers regarding knowledge, WTP, and perception. Consumers who have the slightest knowledge about CSR and CE live in Brazil, are older, and have a lower level of education. Consumers who are less WTP premium price are younger, male, with less schooling, and who have less knowledge. Consumers who have the slightest perception of social and environmental initiatives are those residing in Brazil, older, with a lower level of schooling, and less WTP. Consumers who have the lowest perception of CSR and CE companies reside in Brazil, male, with less schooling, less knowledge, and less WTP.

We also identified essential antecedents of perception and WTP. For example, in addition to demographic variables, we found that WTP depends on Knowledge of E&S. Also, as a novelty concerning studies already carried out, we conclude that WTP for CSR and CE products is an antecedent of consumer perception about CSR and CE companies and E&S initiatives.

Additionally, we identified the socio-environmental initiatives perceived in both countries. Encouraging responsible consumption, reducing water and energy consumption, and pollutant emissions are the initiatives less perceived by consumers. We also identified the perception of elements of CSR and CE. While few differences were found concerning CSR dimensions, we found that eliminating the use of toxic chemicals is much more perceived by Italians than Brazilians. Our main conclusion is that there is ample opportunity for cosmetic companies to disseminate CSR and CE concepts and initiatives that have been carried out, especially to increase the visibility of these actions in front of consumers.

5.1 Practical and theoretical implications

From a theoretical point of view, we expand the research on CSR and CE from a consumer perspective in response to calls from other studies. Through a cross-cultural analysis, we demonstrate important demographic characteristics that influence consumer perception and behaviour. We improve our understanding of the perspective of consumers regarding sustainability issues both in a developed country and an emerging country, adding knowledge also about trends in South America and Europe.

Moreover, unlike previous research that focused on specific circular products or business models and CSR companies, we extend the studies by analysing both approaches.

From this, we demonstrate how CSR and CE can be used to understand strategic and management decisions, in addition to technical and operational definitions. Our research also contributes to theory from consumers' perspectives in the cosmetics industry. The contributions add value to current research on CSR and CE in cosmetic companies and may guide future research on the topic.

From a practical perspective, the research reveals the profile of consumers who have less knowledge, are less WTP or have a lower perception of actions in the social and environmental spheres. This information can be used by companies in the cosmetics sector that intend to invest in sustainable actions to plan more effective product lines and marketing campaigns that reach these less informed consumers. In addition, we identified which CSR and CE elements and which initiatives carried out by cosmetic companies are more and less perceived by consumers. The data contribute to managers assertively developing their marketing strategies to increase consumer perception.

Furthermore, considering that our results indicated that, on average, consumers are willing to pay a premium price for cosmetics meeting social and environmental requirements. There are opportunities for companies that do not yet carry out actions related to CSR and CE to explore this avenue. In this case, it is believed that the investments necessary to carry out socio-environmental practices are rewarded. Additionally, increasing the level of information about the meaning of CSR and CE can help in increasing the perception and WTP.

The survey also contributes to unveiling differences in consumer perspectives in emerging and developed countries. Thus, managers can think of different strategies when expanding their business to other countries. Similarly, since we performed the study in two different contexts, we understand that other companies in similar businesses could use the results to strengthen their socio-environmental initiatives and marketing strategies, expanding their capacity to generate positive impacts for their regions.

Finally, as a practical implication of our study, we also emphasize contributions for policymakers and regulators, especially in the sense of educating and informing consumers about CSR and CE-related initiatives. There are also opportunities, especially in Brazil, to improve legislation regarding potentially harmful ingredients in cosmetics, in addition to informing and raising awareness among consumers about it.

5.2 Limitations and future research directions

Although we chose to study the cosmetic industry because it provided exemplary cases for studying sustainability, the main limitation of this research is that the proposed theoretical

model has been tested only in this industry. The findings might not be generalized to the other industries. Therefore, future analyses can complement and expand this study to other sectors. Even though we carried out the study in two different countries in terms of development, the research did not consider cultural aspects. It would be interesting to extend the study to samples of various nationalities to generalize the results.

Future studies could examine how CSR and CE communication can influence consumers' perception and WTP. Likewise, future research could analyse the possible influence of social media, which would also help define the most effective channels to raise public awareness and behaviour concerning CSR and CE. Finally, concerning possible future research, it would be interesting to analyse the possible moderator effect of other factors, such as personal values or level of adherence to social norms.

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Table 1 - Sample characteristics

Country	Respondents	Female %	Average Age	Average Schooling*
Brazil	152	56%	31,6	3,3
Italy	150	55%	39,8	2,6

* Schooling is defined on a 1 to 4 scale (see section 3.5)

Table 2 - Questionnaire blocks

Block	Authors
1. Corporate Social Responsibility	Dahlsrud (2008); Wang et al. (2016); Alvarado-Herrera et al. (2017); Hur; Kim (2017); Bianchi et al. (2019); Harrison et al.(2020); Zhang; Ahmad (2021)
2. Circular Economy	Ellen MacArthur Foundation (2013); Kirchherr et al. (2017); Kerin Van Langen (2021); Nobre; Tavares (2021)
3. Initiatives developed by companies	Bom et al (2019); Fortunati et al. (2020); Morea et al. (2021); Kolling et al. (2021)

Table 3- Coding of variables used in this study

Explanatory variables

Variable	Survey	Codification
Country	Brazil or Italy	[-1, +1]
Gender	Female or Male	[-1, +1]
Age	Years	< 27 (-1); 27 to 44 (0); > 44 (+1)
Schooling	Four levels	High school (-1) Bachelor (0) Postgraduate (1)
Knowledge	5 levels from 0 to 1	< 0,33 (-1); 0,33 to 0,66 (0); > 0,66 (+1)
WTP for S&E	5 levels from 0% to 50%	< 5,1% (-1); 5,1% to 10% (0); > 10% (+1)

Response variables

Variable	Survey	Codification
Knowledge of CSR concepts	7 levels	[0, +1]
Knowledge of CE concepts	7 levels	[0, +1]
WTP Premium price for CSR	0% to 50%	[0, 0,5]
WTP Premium price for CE	0% to 50%	[0, 0,5]
Perception of CSR companies	Yes or No	[0, +1]
Perception of CE companies	Yes or No	[0, +1]
Perception of CSR concepts	5 questions, 7 levels	[0, +1]
Perception of CE concepts	5 questions, 7 levels	[0, +1]
Perception of S&E initiatives	10 initiatives [0, 10]	[0, +1]

Table 4- Robust Regression Model for Knowledge on CSR and EC

	Knowledge on CSR		Knowledge on CE	
	Coef.	p-value	Coef.	p-value
CONSTANT	0,405	0,0000	0,501	0,0000
Country	0,153	0,0000	0,126	0,0000
Age	-0,072	0,0000	-0,079	0,0000
Schooling	0,181	0,0000	0,143	0,0000
Country*Age	-0,047	0,0007	-	-
Country*Schooling	0,083	0,0000	0,055	0,0002
R2 =	70,51%		58,65%	
MAE =	0,120		0,112	

Table 5- Robust Regression Model for WTP for products produced according to CSR and CE concepts

	WTP for CSR		WTP for CE	
	Coef.	p-value	Coef.	p-value
CONSTANT	0,133	0,0000	0,130	0,0000
Gender	-0,017	0,0000	-0,019	0,0000
Age	0,016	0,0033	0,016	0,0025
Schooling	0,033	0,0000	0,027	0,0000
Knowledge	0,037	0,0000	0,036	0,0000
Country*Gender	-0,012	0,0035	-0,010	0,0095
Country*Age	0,027	0,0000	0,030	0,0000
Country*Knowledge	-		0,016	0,0148
R2	35,39%		36,32%	
MAE	0,048		0,047	

Table 6- Robust Regression Model for the perception of socio-environmental initiatives

	Perception of E&S Initiatives	
	Coef.	P-value
CONSTANT	0,394	0,0000
Country	0,042	0,0000
Age	-0,063	0,0000
Schooling	0,089	0,0000
Knowledge	0,060	0,0000
WTP	0,058	0,0000
Country*Schooling	-0,037	0,0001
R2	59%	
MAE	0,072	

Table 7- Robust Regression Model for the perception of companies that follow CSR and CE concepts

	Perception CSR Companies		Perception CE Companies	
	Coef.	p-value	Coef.	p-value
CONSTANT	0,720	0,0000	0,735	0,0000
Country	0,044	0,0042	0,128	0,0000
Gender	-0,066	0,0000	-0,061	0,0000
Schooling	0,083	0,0000		
Knowledge	0,150	0,0000	0,121	0,0000
WTP	0,089	0,0000	0,060	0,0002
Country*Age	-0,071	0,0000	-0,053	0,0016
R2	60,56%		60,76%	
MAE	0,142		0,129	

Table 8- Companies most cited as adherent to CSR fundamentals

BRAZIL	35 companies cited	ITALY	10 companies cited
Company	Citations	Company	Citations
Natura	66	Collistar	18
Boticário	30	Bionike	15
Avon	8	Pupa Milano	15
Avatim	4	I Provenzali	13
Simple Organic	4	L'Erbolario	12
BOB	3	Bottega Verde	11
Sallve	3	Wycon Cosmetics	10

Table 9- Companies most cited as taking CE actions

BRAZIL	17 companies cited	ITALY	10 companies cited
Company	Citations	Company	Citations
Natura	41	I Provenzali	17
Boticário	18	Neve Cosmetics	16
Avatim	4	PuroBIO Cosmetics	15
Sallve	3	L'Erbolario	14
Avon	2	Bottega Verde	13
Simple Organic	2	Omia	13
BOB	2	Bionike	12
		Collistar	12

Figure 1 – Theoretical framework tested

432x450mm (38 x 38 DPI)
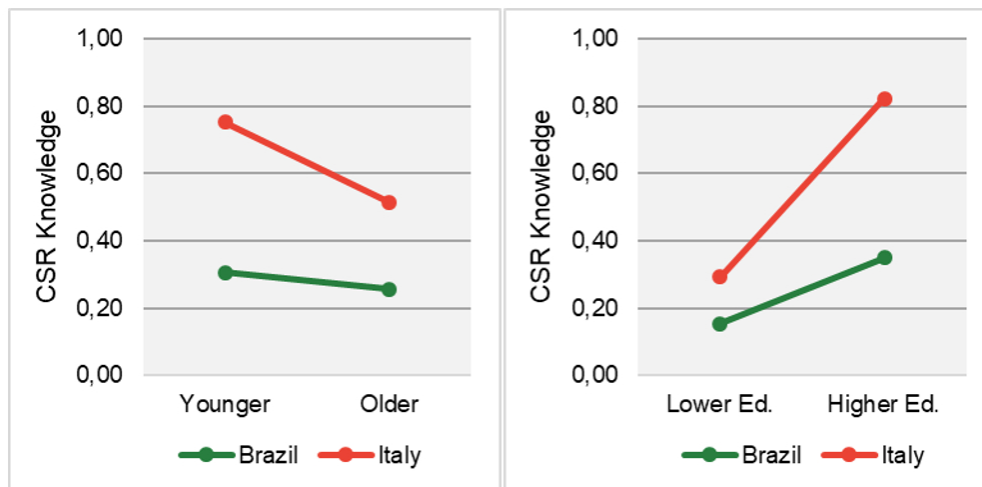
Figure 2- Knowledge about CSR according to Country, Age, and Schooling

669x333mm (38 x 38 DPI)
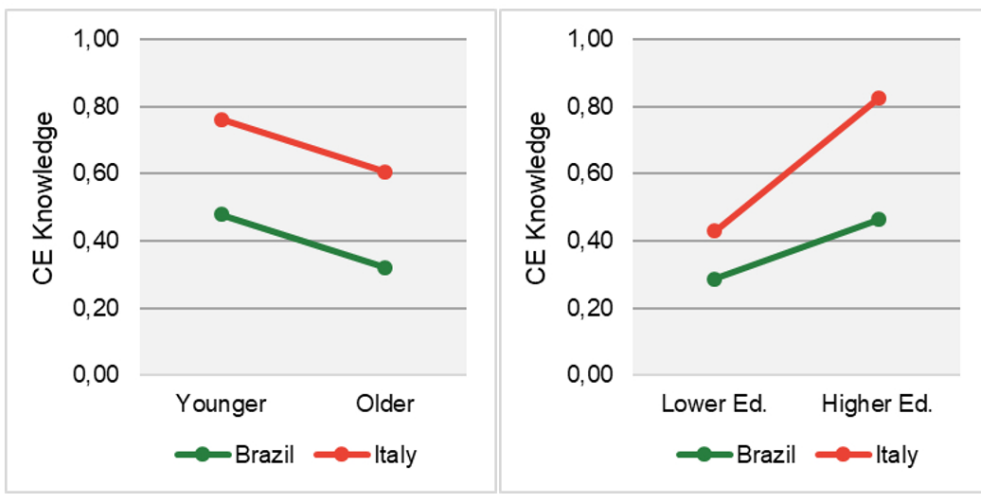
Figure 3- Knowledge about CE as a function of Country, Age, and Schooling
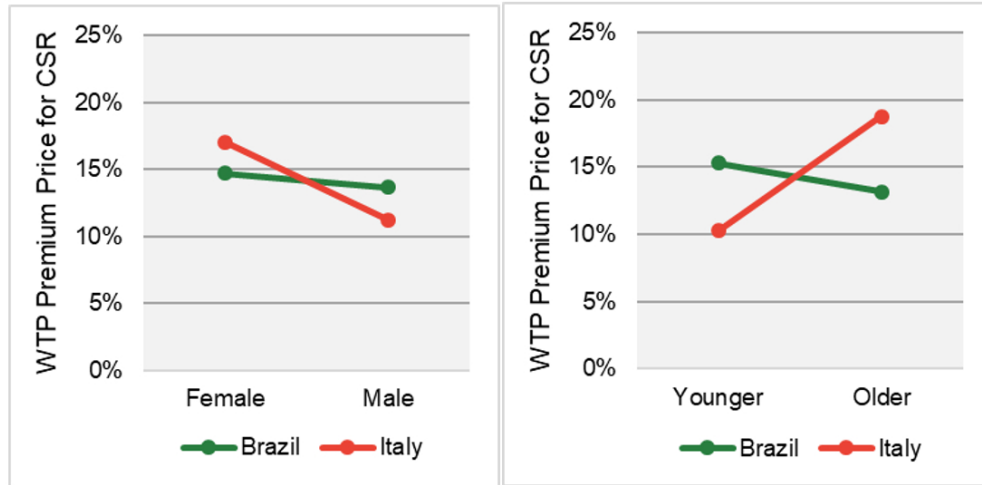
705x353mm (38 x 38 DPI)

Figure 4- WTP for CSR products according to Country, Gender, and Age

737x366mm (38 x 38 DPI)

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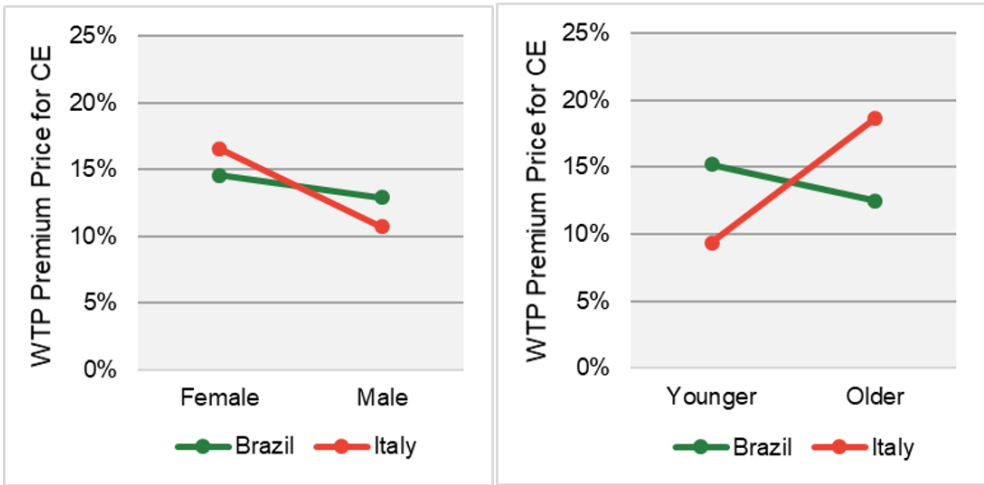
Figure 5- WTP for CE products according to Country, Gender, and Age

739x367mm (38 x 38 DPI)
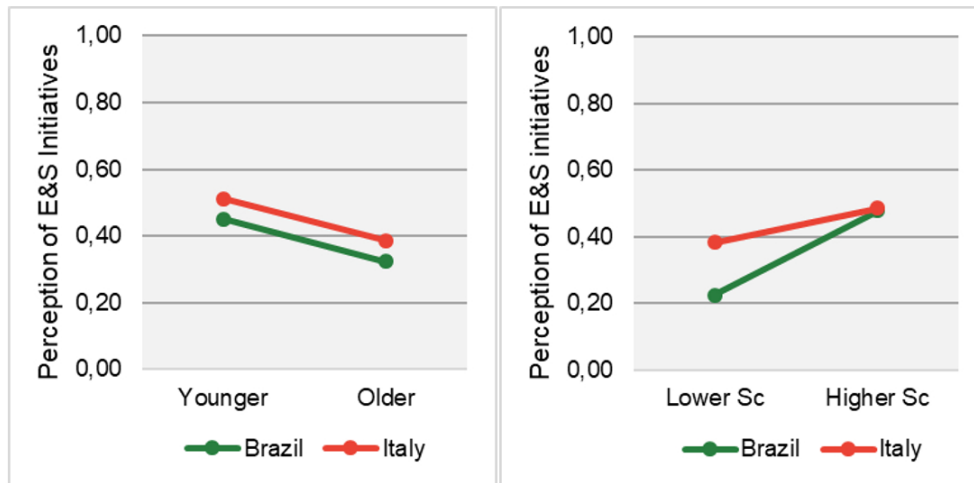
Figure 6- Perception of E&S initiatives according to Country, Age, and Schooling Level

741x368mm (38 x 38 DPI)
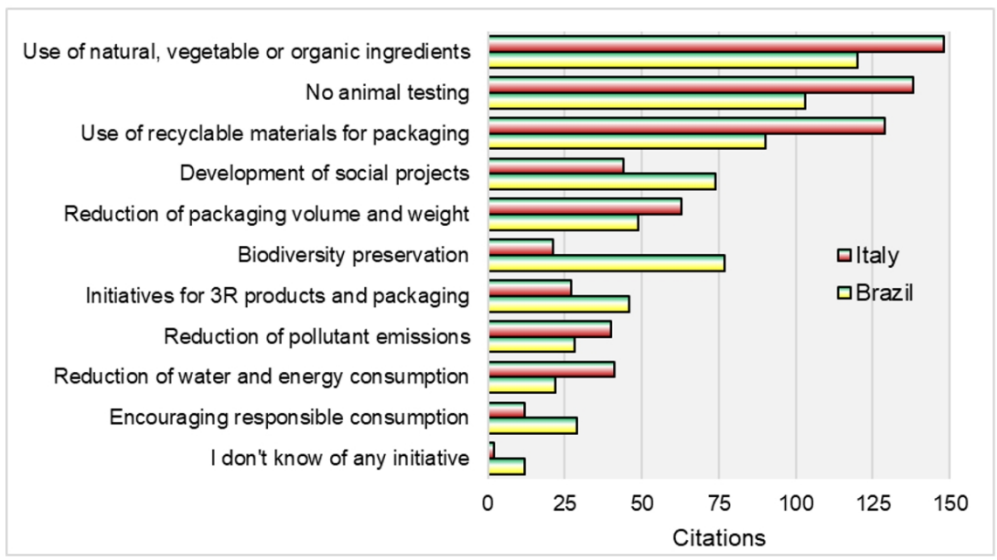
Figure 7- Perceived environmental initiatives citations by country

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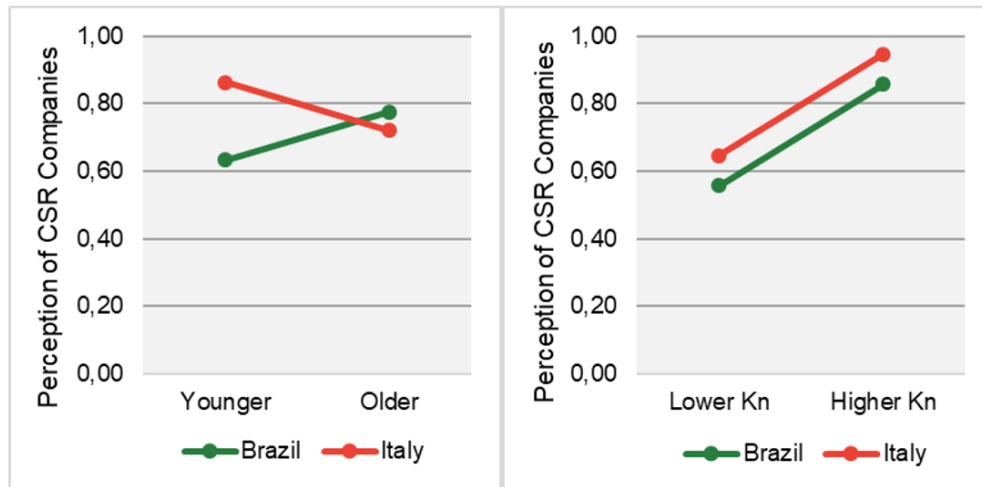
Figure 8- Perception of companies following CSR concepts according to Country, Age, and Knowledge

733x365mm (38 x 38 DPI)
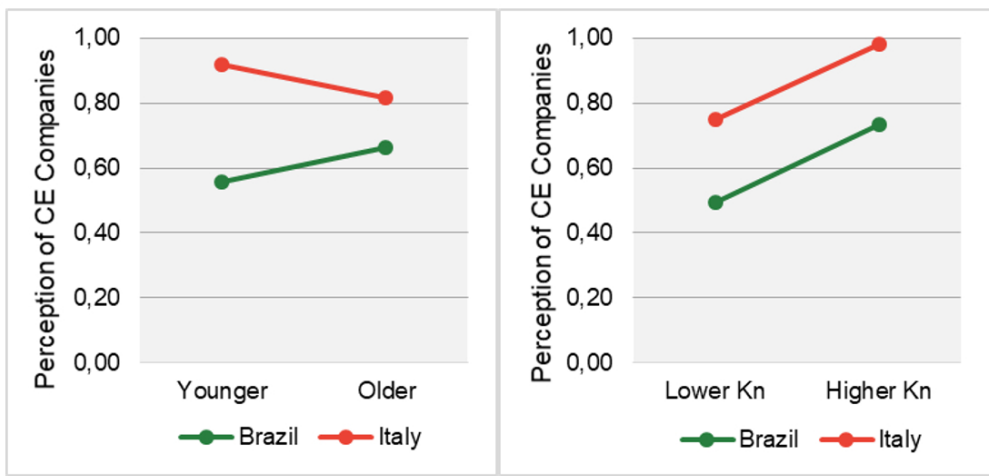
Figure 9- Perception of companies undertaking CE actions in terms of Country, Age, and Knowledge

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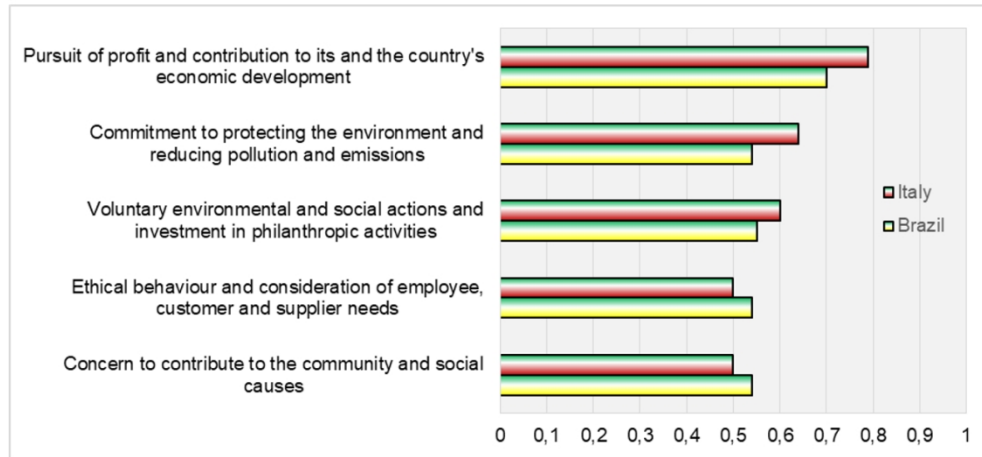9
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Figure 10- Perception of CSR Dimensions

899x419mm (38 x 38 DPI)
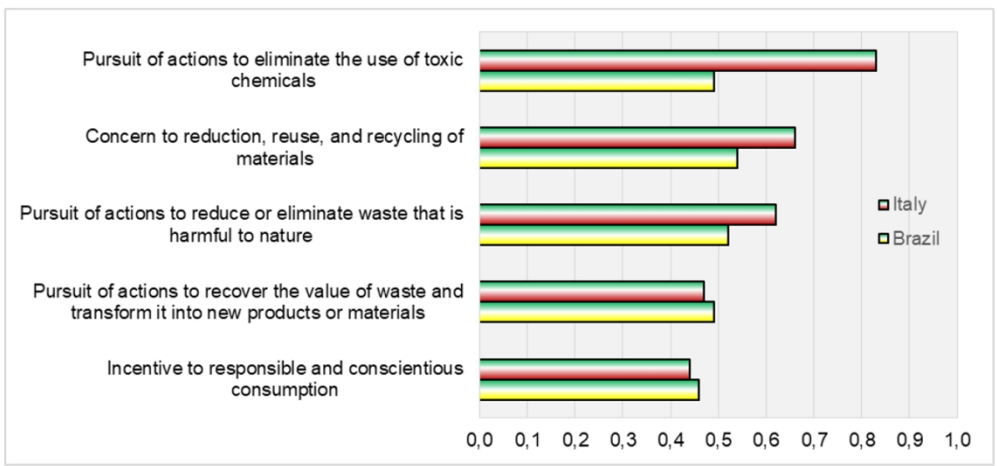
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Figure 11- Perception of CE Elements

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