



Article

# A Cross-Sectional Study on Ethical Buyer Behavior towards Cruelty-Free Cosmetics: What Consequences for Female Leadership Practices?

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Abstract: This study extends the theory of planned behavior model and examines the humane factors (altruism, environmental knowledge, personal appearance concerns, attitude, perceived behavioral control, and subjective norms) that shape attitudes and buyer behavior toward crueltyfree cosmetics and the consumer characteristics that reflect their behavior toward such products. Recent global occurrences have affected human behavioral patterns, namely, the COVID-19 pandemic, which we aim to study. Has behavior changed to become more ethical? A survey was carried out involving a sample of 425 Portuguese participants (a feminine culture), following a convenienceand snowball-sampling procedure. Significant correlations were found between environmental knowledge, subjective norms, and buyer behavior toward cruelty-free cosmetics with attitude and environmental knowledge and buyer behavior. Through structural equation modeling to evaluate the conceptual model, a good model fit was found, being that standardized values in the model are significant except for regressions from perceived behavior control and personal appearance concerns to buyer behavior toward cruelty-free cosmetics. Women present higher values than men on attitude, altruism, environmental knowledge, and buyer behavior, in line with what is expected in a traditional and conservative feminine culture such as that to be found in Portugal. Such a result points to the need to promote increased gender equality, for example, in senior leadership roles, as women are seen to have the desirable qualities required for a more sustainable, cruelty-free, and humane society. This is an alert for human-resource managers in the region.

**Keywords:** ethical consumption; cruelty-free cosmetics; theory of planned behavior; sustainability; Portuguese sample



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## 1. Introduction

Consumers are progressively transferring their focus to adopting sustainable products, and many require that the companies they support are ethically oriented, clean, and sustainable [1]. Ethical consumerism is no longer considered a niche [2], and this study points in particular to women as being more ethical than men, making them valuable human resources which companies should invest in, given the current landscape and conflicting times we are currently experiencing. The importance of altruistic values and

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attitude, manifested in our study, and more present in women, could be an explanation for some of the lag registered in management and leadership practices in Portugal. Senior-management and political positions are mainly occupied by men (namely, the best jobs in Portuguese society) and so gender inequality does indeed perhaps have a negative toll on Portuguese gross domestic product. This needs to change. On the other hand, consumers in general have already realized that they can provoke changes by choosing the products they buy and altering their behavior accordingly [3]. Moreover, companies are increasingly aware of the role that sustainability and ethical consumerism play today [4,5].

Currently, sustainability is discussed in almost every product category [6], whereas consumers are increasingly concerned with animal welfare in their purchasing choices [7]. Countless consumers are driven to demand green, biological, ecological, and sustainable products in the food, clothing, and apparel industries [8]. In this context, many people and organizations have also been pressuring the cosmetics industry to abandon animal testing in their product-development processes and look for sustainable sourcing practices. Not only is animal welfare "increasingly favored by consumers in their choice of food and cosmetic products, proposed by manufacturers and retailers." [7], but, additionally, The Research and Toxicology Department of Humane Society International (HSI) operates a multifaceted and science-driven global program aimed at ending the use of animals in toxicity testing and research. The key strategic objectives include, among others, "ending cosmetics animal testing worldwide, via the multinational *Be Cruelty-Free* campaign." [9].

According to the US Food and Administration (FDA), a cosmetic manufacturer might only base their "cruelty-free" claims on the fact that the materials or products used are not currently tested on animals [10]; the "cruelty-free" expression thus refers to the animal testing aspect of animal cruelty. Many companies still conduct tests on animals—a cruel and unnecessary process as innovative products can be developed using many ingredients that have been proven safe to use and do not require additional testing [11]. In addition, "animal experiments are cruel, unreliable, and even dangerous" [12]; a "cruelty-free" company is a company that does not test its products on animals. The "cruelty-free" and "not tested on animals" expressions thus are entwined. Due to growing concern about the use of animal testing in cosmetic product development, several governments have banned, limited, and regulated it in their respective countries, such as the European Union (in 2013) and India (in 2014) [13]. Still, many countries do not forbid animal testing (e.g., Canada and most US states), and some even require it (e.g., China) [7]. This fact raises the question of how confident a consumer can be that a cosmetic brand in Europe that also sells in China has really abandoned animal testing. In addition, how can the consumer be sure that a cosmetic marketed on the Internet is cruelty-free when its origin may be dubious? Therefore, it is paramount for cosmetic brands to align their strategies with consumers' animal welfare and sustainability concerns; moreover, it is critical not only to be perceived as sustainable and ethical but actually practice it, to satisfy stakeholders and meet consumers' expectations [14]. As projects are a way to sustainability [15], new cosmetics development projects should look for ways to innovate free-of-animal testing to ensure such practice. As marketers increasingly recognize that consumers' concern for cruelty-free products has increased in expression, they tend to create a differentiated offer of cosmetics, claiming to be exempt from animal testing.

If one also takes into account the recent change in society due to the COVID-19 pandemic and, also, due to the recent war in Europe, we encounter a new type of consumer, first identified by He and Harris [4], but now extended herein to include an even-more-conscientious mentality (against cruelty of any kind, and especially in personal items with which we closely identify, such as cosmetics). The extant literature on cosmetics and personal-care products suggest that specific values may drive the formation of consumers' attitudes and behaviors by inciting them to search for cosmetic products that will satisfy their values [16]; concerns for animal rights and animal wellbeing may be paramount in shaping their preferences toward cosmetics [17]. For example, a Nielsen poll in the US held in 2015 showed that purchasing products that are "not tested on animals" was important

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for a majority of cosmetic consumers, concluding that, for 57% of those surveyed, "not tested on animals" was the most important packaging claim (followed by "Sun Protection Factor" and "All natural") [18]; a recent study, also from Nielsen (2022), reveals a +16% growth in cruelty-free cosmetic products spending in the US [1].

Despite this trend, however, the number of studies within the field of cosmetics is still scarce, and even less on cruelty-free cosmetics in the context of buyer behavior [7,17,19]. In addition, prior studies on cruelty-free cosmetics lack reliable and sufficient explanation of buyer behavior of cruelty-free cosmetic products [7,19–21], and "did not investigate the difference of consumer attitude formation towards cruelty-free products compared to conventional cosmetic products [and] research shows that the construction of attitude towards cruelty-free products highly differs from conventional personal care" [7]. Hence, the importance of carrying out more studies on the topic, specifically from the consumers' perspective.

This study aims to fill that research gap by empirically assessing the factors that shape the attitudes and buyer behavior toward cruelty-free cosmetics and the consumer characteristics that reflect their behavior toward such products. The study is based on a survey that was carried out involving a sample of 425 Portuguese participants. The Portuguese national culture is feminine (or not very masculine, according to Hofstede [22], meaning that the focus is on caring for others and on quality of life and solidarity) and, therefore, very interesting. Such cultures, being against war, are considered advanced and millenary and concerned with the more humane issues being discussed herein. Thus, Portugal is a good futuristic test laboratory within which to test the cruelty-free concept. Other societies in the Western world are becoming more humane as well, firstly due to COVID-19 [4] and secondly due to the recent war in Europe that is uniting several countries in peace and against violence and cruelty of any sort. Portugal, a tourist haven, is considered ideal. Unlike other works on the subject [21,23], the current study will address not the behavior of producers but the consumers' point of view, thus contributing to future research on ethical buyer behavior toward cruelty-free cosmetics.

#### 2. Sustainability and Ethical Consumerism in Cosmetics

Sustainability can be defined as "development that meets the needs of present generations without compromising the ability of future generations to meet their own needs" [24]. Sustainable consumption responds to environmental concerns in that people shape their preference for ecologically correct products; in addition, individual beliefs, attitudes, perceptions, and personal moral obligations to protect others and the environment, motivate consumers to choose to shop in an eco-friendly way [25].

Dettori [26] states that traditional marketing intends to stimulate consumption, while sustainable marketing intends to promote the sustainable behavior of consumers. When a consumer purchases a product or service from a company concerned with social responsibility, it is possible to speak of ethical consumption [27]. Ethical consumption is growing fast [2,19,28–30], and consumers are willing to pay more for ethical products [31,32]. Currently, many consumers try to become ethical consumers by purchasing products and services that they consider to be ethically produced [20].

According to a study by Davies and Gutsche [33], consumers are motivated to make ethical purchases considering animal welfare and society. However, as Schröder and McEachern [34] put it, as citizens, people support the concept of animals deserving a good life; as meat consumers, they avoid the cognitive connection with the live animal. Nevertheless, the use of animals in laboratory tests to develop cosmetics has been a reality strongly criticized by animal protection groups and consumers in general [19].

According to Gouveia [35], activist organizations have increasingly emerged that defend environmental causes associated with consumption and the emergence of cruelty-free ethical products, leading to a greater awareness that their attitudes can revert to animal welfare and the environment. Some brands make consumer labels available that include messages such as cruelty-free or "not tested on animals" [36] to draw the attention of consumers in the purchase decision process for animal welfare [37].

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Ajzen's theory of planned behavior (TBP) [38,39] assumes intentions to execute specific behaviors [40], namely, attitude toward behavior, subjective norms related to behavior, and perceived behavior control. Attitude has a significant influence on ethical behavior [17,41,42], and positively influences the buyer behavior toward organic cosmetic products [17] or green cosmetics [43]. As such, here it is hypothesized that:

**Hypothesis 1.** There is a positive correlation between the attitude towards cruelty-free cosmetics and the buyer behavior of cruelty-free cosmetics.

Perceived behavior control (PBC) is based on accessible control beliefs that respect the presence of factors that can facilitate or impede a behavior (for example, required skills, availability or lack of time, or money). Carrigan and Attalla [44] concluded that if consumers realized they had the financial strength to discriminate against unethical companies, they would be willing to pay a premium price for ethically produced products. Andorfer and Liebe [45] state that a lower price and better financial situation positively affect the consumption of ethical products. Thus, the notion of the consumer's financial capacity can play a facilitating or constraining role in purchasing behavior, determining the perceived behavior control [17]. Therefore, it is hypothesized that:

**Hypothesis 2.** *Perceived behavior control is positively correlated with the attitude towards cruelty-free cosmetics* (2a) *and the buyer behavior of cruelty-free cosmetics* (2b).

According to Fishbein and Ajzen [46], normative beliefs contribute to the general social pressure perceived for a person to engage in behavior, influencing the formation of the buyer behavior of cruelty-free cosmetics; psychosocial perspectives are significant reasons for a positive attitude and intention to purchase cosmetic products [47] (Hillhouse, Turrisi, and Kastner 2000). Hence:

**Hypothesis 3.** Subjective norms are positively correlated with the attitude towards cruelty-free cosmetics (3a) and the buyer behavior of cruelty-free cosmetics (3b).

Other factors can also play a significant role in the ethical purchasing behavior of cosmetics. Altruism positively affects attitude towards ethical buyer behavior [48]. Consumer behavior tends to become pro-environmental when they become aware of the negative impact of their actions [49]. Davies and Gutsche [33] mention other aspects that contribute to this altruism, such as social guilt and self-satisfaction. Accordingly, it is hypothesized that:

**Hypothesis 4.** Altruism is positively correlated with the attitude towards cruelty-free cosmetics (4a) and the buyer behavior of cruelty-free cosmetics (4b).

Some studies report selfish motivations based on individualism and personal appearance [17,50], which positively influence attitudes towards cosmetics: health concerns when opting for organic and natural products; awareness of appearance and hedonism, materialism and self-identity; and values associated with organic and ecological beauty products [17]. From that perspective, personal factors associated with personal appearance should positively influence attitudes and purchase behaviors for cruelty-free cosmetics. Hence:

**Hypothesis 5.** *Personal appearance concerns are positively correlated with the attitude towards cruelty-free cosmetics* (5a) *and the buyer behavior of cruelty-free cosmetics* (5b).

An increase in knowledge often leads to attitudes that will further influence behavior [51]. Mostafa [52] concludes that environmental knowledge has a positive impact on consumer attitude and behavior, which results in a positive attitude towards animal cruelty-free cosmetics. Individuals who show greater interest in environmental issues purchase

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more products free from animal cruelty and that are ecologically correct than those who are less concerned with ethics and the environment [53]. Therefore:

**Hypothesis 6.** Environmental knowledge is positively correlated with the attitude towards cruelty-free cosmetics (6a) and the buyer behavior of cruelty-free cosmetics (6b).

There could be significant differences in how the factors influencing attitude and other components of the TPB model relate to consumers' characteristics. For example, several authors argue that young consumers, the so-called Generation Z (born after 1995), believe in contributing to positively influence the environment [54,55] and will particularly change the way companies produce [56]. Different generational cohorts have been identified considering the years in which their members were born, their habits, the way they think, their behavior, and the environment in which they live, namely, Baby Boomers (1945–1960), Generation X (1960–1980), Millennials (1980–1995), Generation Z (1995–2009), and Generation Alpha (born in 2010 and after) (Gonçalves 2019). According to Min et al. [57], the percentage of young consumers that stand against animal testing has increased from 31 percent in 2001 to 54 percent in 2013, which can be explained mainly by their intensive use of social media and the Internet, together with the active efforts of environmental and animal protection organizations that encourage ethical consumerism [58]. In addition, gender can be relevant: women may care more about corporate social responsibility and ethics than men, which should affect their attitude and purchase behavior [59,60]. Finally, education can also play a role in ethical decision making [61]. Accordingly, we hypothesize:

**Hypothesis 7.** There will be differences in the buyer behavior of cruelty-free cosmetics and attitude towards cruelty-free cosmetics related to sociodemographic characteristics.

This study seeks to extend Ajzen's TPB original model, which includes attitude, subjective norms, perceived behavior control, and purchase behavior, to altruism (animal welfare and environmental concerns), personal appearance consciousness, and environmental knowledge as factors influencing cosmetics' purchase behavior, aiming to better understand their relationships. The postulated hypotheses, depicted in the conceptual model of Figure 1, should allow one to address the following research questions: (i) "What factors shape the attitudes and the intention to purchase cruelty-free cosmetics?", and (ii), "Do consumer characteristics reflect their intention to purchase cruelty-free cosmetics?". Thus, we hypothesize:

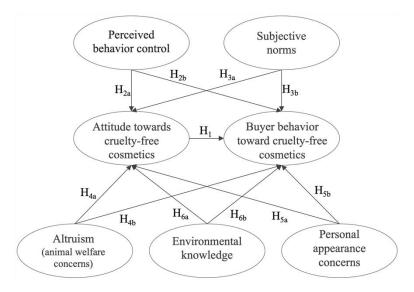


Figure 1. Conceptual model.

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**Hypothesis 8.** Buyer behavior is determined by attitude towards cruelty-free, perceived control behavior, subjective norms, altruism, environment knowledge, and personal appearance concerns.

#### 3. Methods

## 3.1. Procedures

A survey was prepared based on a questionnaire with items used in published quantitative studies, namely, by Grappe et al. [7] and Alaouir, Gustavsson, and Schmidt [19]. The items were translated and back translated into Portuguese by bilingual experts, and the questionnaire protocol was established, to which a section with sociodemographic questions was added. The questionnaire was distributed over the Internet, using the Survey Monkey software, following a convenience- and snowball-sampling procedure (snowball-sampling method is purely based on referrals and that is how a researcher is able to generate a sample; since most people over 18 are a potential buyer, this method seems quite suitable). The sample inclusion criteria included being Portuguese, being 18 years of age or older, and having the ability to understand and answer what is asked freely. People contacted were asked to share the questionnaire with others. Consequently, the sample cannot be considered as representative of the Portuguese population. A total of 560 responses were collected, of which 425 were valid and complete (75.6%), between 9 and 22 June 2021. All procedures followed the 1964 Declaration of Helsinki's terms and subsequent addenda. All participants were informed in advance about the objectives and the guarantee of anonymity and data confidentiality, only accessing the questionnaire itself after expressing their consent to the terms of participation.

## 3.2. Instrument

The sociodemographic questionnaire included questions about gender (male, female, other), age (numerical), degree of education (primary education, secondary education, higher education), and occupation (inactive, active). The respondents expressed the degree of agreement with each item using a Likert scale from 1 ("I completely disagree") to 7 ("I completely agree").

The remaining measurement items were adapted from previous research to assess this study's constructs. To evaluate the Attitude towards cruelty-free cosmetics (AT), we adopted three items from Grappe et al. [7] and three items from Alaouir, Gustavsson, and Schmidt (2019) [19]. To evaluate Altruism (AWB), three items were adopted from Grappe et al. [7] and two items from Alaouir, Gustavsson, and Schmidt [19]. To evaluate Personal appearance concerns (PA), we adopted four items from Grappe et al. [7]. To evaluate Environmental knowledge (KE), we adopted four items from Alaouir, Gustavsson, and Schmidt [19]. To evaluate Perceived behavior control (PBC), we adopted two items from Alaouir, Gustavsson, and Schmidt [19]. To evaluate Subjective norms (SN), we adopted three items from Grappe et al. [7]. Finally, to evaluate the Buyer behavior of cruelty-free cosmetics (BB), we adopted two items from Grappe et al. [7] and one item from Alaouir, Gustavsson, and Schmidt [19]. Table 1 summarizes constructs, items and their codes, and the respective sources.

Table 1. Summary of constructs, items, codes, and sources.

Construct	Item	Code	Source
	I find cosmetic products interesting	AT1	
Attitude towards cruelty-free cosmetics (AT)	I appreciate cosmetic products	AT2	Grappe et al. [7]
	I have a favorable attitude towards cosmetic products	AT3	
	I think it is important to buy cruelty-free cosmetic products	AT4	Alassia Canta assa
	I intentionally look for cruelty-free cosmetic products	AT5	Alaouir, Gustavsson, and Schmidt [19]
	Purchasing cruelty-free cosmetic products to me is pleasant	AT6	and Schillett [17]

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Table 1. Cont.

Construct	Item	Code	Source
	Basically, humans have the right to use animals as they see fit *	AWB1	
	Much of the scientific research done with animals for cosmetic products is unnecessary and cruel	AWB2	Grappe et al. [7]
Altruism (AWB)	Too much fuss is made over the welfare of animals these days when there are many human problems that need to be solved *	AWB3	
	I buy/would buy cruelty-free cosmetic products because of animal welfare	AWB4	Alaouir, Gustavsson,
	I buy/would buy cruelty-free cosmetic products because of the environment	AWB5	and Schmidt [19]
	My appearance is an important part of who I am	PA1	
Personal appearance concerns (PA)	I believe that by controlling my appearance I can control many of the social and emotional events in my life	PA2	Grappe et al. [7]
	I should do whatever I can to always look my best I usually pay attention to my appearance	PA3 PA4	
Environmental knowledge (KE)	I am aware of which cosmetic brands that test their products on animals	KE1	
	I am aware of the negative effects of animal testing on the environment	KE2	Alaouir, Gustavsson, and Schmidt [19]
	I know how to select products that does not harm the environment	KE3	and Schindt [17]
	I am aware about animal testing in the cosmetic industry	KE4	
Perceived behavior	In general, I read the claims on cosmetic products, but I do not always understand everything	PBC1	Alaouir, Gustavsson,
control (PBC)	In general, I read the claims on cosmetic products, and I understand almost everything *	PBC2	and Schmidt [19]
	Most others who are important to me would think I should use cosmetic products with the claim cruelty-free	SN1	
Subjective norms (SN)	Most of the people I take into consideration would think I should use cosmetic products with the claim cruelty-free	SN2	Grappe et al. [7]
	My relatives (family, friends,) would advise me to buy cosmetic products with the claim "cruelty-free"	SN3	
Buyer behavior toward cruelty-free cosmetics (BB)	I buy/would buy cosmetic products with the claim cruelty-free	BB1	Crappo et al. [7]
	I would recommend cosmetic products with the claim cruelty-free to my friends	BB2	Grappe et al. [7]
	I would pay more for a product I know is cruelty-free	BB3	Alaouir, Gustavsson, and Schmidt [19]

<sup>\*</sup> Reverse item.

## 3.3. Data Analysis

The collected data were submitted to statistical analysis using SPSS, version 28. Thus, a characterization of the sociodemographic profile of the respondents (n = 425) and the answers to questions associated with the constructs of the conceptual model was carried out using descriptive statistics. Using G\*Power (sample size and power calculator), multiple linear regression with medium effect size, an alpha of 0.05 and a power level of 0.80 required a sample of 325 individuals [62]. The t-Test and ANOVA were used to compare dependent variables according to sociodemographic factors [63]. Effect sizes were also calculated: Conhen's d for t test (small = 0.2, medium = 0.5 and large = 0.8, based on benchmarks suggested by Cohen [64] and eta squared for ANOVA (small = 0.01, medium = 0.06, large = t > 0.14 as suggested by Olejnik and Algina [65]. The internal consistency of the instruments and subscales was assessed through Cronbach's alpha, whose values, according to DeVellis [66],

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are above the acceptable internal consistency threshold ( $\alpha \ge 0.60$ ). Pearson correlations [67] between variables were determined, as well as their level of significance. Hierarchical multiple linear regressions [68] were also performed, concerning the dependent variables (Buyer behavior toward cruelty-free cosmetics, and Attitude towards cruelty-free cosmetics). Reliability was examined by Cronbach's alpha values; a minimum  $\alpha$  coefficient should be between 0.65 and 0.8 (or higher) [69];  $\alpha$  coefficients that are less than 0.5 are unacceptable. Convergent validity was calculated by composite reliability (CR) and average variance extracted (AVE) values; discriminant validity was assessed by AVE square roots. AVE and CR should be higher than the thresholds of 0.50 and 0.70, respectively; the square roots of the AVE values should be higher than the cross-correlations [70]. A structural equation modeling or path analysis to evaluate the conceptual model was also carried out; this SEM analysis consists of a set of multivariate techniques that are confirmatory rather than exploratory in testing whether models fit data [71].

## 3.4. Respondents' Demographic Profile

The sample consists of 425 cases, of which 79.1% are female and 20.9% are male (Table 2). The prevailing age group in this study is Generation Z ( $\leq$ 26 years), 186 (43.8%) respondents; followed by Generation X, aged between 42 and 56 years old (128 or 30.1%); of Millennials, aged between 26 and 41 years, were 88 or 20.7%, and respondents over 56 years (23 or 5.4%). Most of the sample is attending or have completed higher education (317 or 74.6%), while 91 (21.4%) are attending or have completed secondary education, and 17 (4.0%), basic education. Almost the entire sample (397 or 93.4%) declares to be active (employee, entrepreneur, student, or housewife), while 28 respondents (6.6%) are inactive (unemployed, retired).

Variables		N	% Total	Cumulative %
Candan	Female	336	79.1	79.1
Gender	Male	89	20.9	100.0
Age	$\mathrm{M}\pm\mathrm{SD}$ ; Min-Max	$34.2 \pm 13.4; 15–77$		
	≤26 years old (Gen. Z)	186	43.8	43.8
Age group or	26-41 years old (Gen Y/Millennials)	88	20.7	64.5
generational cohort	42–56 years old (Gen. X)	128	30.1	94.6
	More than 56 years old (Baby boomers)	23	5.4	100.0
	Basic education	17	4.0	4.0
Education level	Secondary education	91	21.4	25.4
	Higher education	317	74.6	100.0
Occupation	Inactive	28	6.6	6.6
Occupation	Active	397	93.4	100.0

**Table 2.** Sociodemographic characteristics: respondents' profile.

## 4. Results

The internal consistency of the instrument and subscales was assessed using Cronbach's alpha, with all values being greater than 0.6 (Table 3). Table 3 presents descriptive statistics for the questionnaire variables, namely, the means (scale 0–7), ranging from the highest mean score obtained for Altruism (concerns about animal welfare and the environment; 6.03  $\pm$  0.881), to the lowest, obtained for the Perceived behavior control (4.34  $\pm$  1.440).

The correlation matrix (Table 4) reveals the associations between the different constructs. The correlations established between Environmental knowledge, Subjective Norms, and Buyer behavior toward cruelty-free cosmetics with Attitude towards cosmetics, stand out. The correlation between Environmental knowledge and Buyer behavior toward cruelty-free cosmetics is also noteworthy. Convergent validity was calculated by composite reliability (CR) and average variance extracted (AVE) values. The results show that AVE and

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CR are higher than the thresholds of 0.50 and 0.70, respectively, except for Attitude towards cruelty-free cosmetics and Altruism, whose values are slightly lower. The square roots of the AVE values (reported in off-diagonal, Table 4) are higher than the cross-correlations; therefore, convergent and discriminant validity of the dimensions were established.

Table 3.	The results	of descript	tive statistics	and reliability.
Table 5.	THE TESUITS	or acserre	uve statistics	and ichability.

Variables	Code	No. Items	Scale Amplitude	Min	Max	Mean	SD	Cronbach's α
Attitude towards cruelty-free cosmetics	AT	6	0–7	1	7	5.92	0.798	0.710
Altruism	AWB	5	0–7	1	7	6.03	0.881	0.646
Personal appearance concerns	PA	4	0–7	1	7	5.07	0.903	0.685
Environment knowledge	KE	4	0–7	1	6	4.52	1.300	0.696
Perceived behavioral control	PBC	2	0–7	1	7	4.34	1.440	0.732
Subjective norms	SN	3	0–7	1	7	4.65	1.430	0.882
Buyer behavior toward cruelty-free cosmetic products	ВВ	3	0–7	1	7	5.83	1.050	0.786

**Table 4.** The results of correlation between all studied variables, CR, AVE and AVE square roots.

	AT		AWB		PA	KE	PBC		SN	BB	CR	AVE
Attitude towards cruelty-free cosmetics	ry-free cosmetics 0.661										0.800	0.437
Altruism	0.372	***	0.672								0.802	0.452
Personal appearance concerns	-0.090	)	0.059		0.729						0.819	0.531
Environment knowledge	0.452	***	0.204	***	-0.033	0.727					0.811	0.529
Perceived behavioral control	0.051		0.215	***	0.044	0.084 ***	0.889				0.883	0.790
Subjective norms	0.496	***	0.161	***	-0.163 ***	0.390 ***	-0.013		0.963		0.927	0.809
Buyer behavior toward cruelty-free cosmetic products	0.425	***	0.189	***	-0.066	0.471	0.246	***	0.376 ***	0.851	0.887	0.725

Note. \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. AT—Attitude towards cruelty-free cosmetics; AWB—Altruism; PA—Personal appearance concerns; KE—Environmental knowledge; PBC—Perceived control behavior; SN—Subjective norms; BB—Buyer behavior toward cruelty-free cosmetic products; CR = composite reliability; AVE = average variance extracted; bold (diagonal) = AVE square roots.

A *t*-Test was carried out with the objective to analyze differences in gender concerning the constructs. There were differences in AT between men  $(5.47 \pm 0.952)$  and women  $(6.04 \pm 0.707)$  (t (423) = 6.248; p < 0.001; d = -0.74); in AWB between men  $(5.71 \pm 1.027)$  and women  $(6.11 \pm 0.819)$  (t (423) = 3.899; p < 0.001; d = -0.46); in KE between men  $(4.15 \pm 1.360)$  and women  $(4.62 \pm 1.270)$  (t (423) = 3.071; p < 0.01; d = -0.37); and in BB between men  $(5.57 \pm 1.083)$  and women  $(5.90 \pm 1.029)$  (t (423) = 2.705; p < 0.01; d = -0.32), with women always scoring higher than men.

There was only one statistically significant difference between age groups concerning SN, as determined by ANOVA (F (3421) = 3.52; p = 0.015;  $\eta^2$  = 0.024); specifically, it was higher among Millennials (4.74  $\pm$  1.460) than among Gen. X (4.73  $\pm$  1.480). No differences were found concerning the participants' educational background.

Multiple hierarchical linear regressions were carried out in relation to the dependent variables Buyer behavior toward cruelty-free cosmetics, and Attitude towards cruelty-free cosmetics. AT, AWB, KE, and SN explain, as a whole, 41% of the variance in Buyer behavior toward cruelty-free cosmetics (Table 5). In addition, gender, AWB, PA, KE, and BB explain, as a whole, 36% of the variance in Attitude towards cruelty-free cosmetics (Table 6).

A structural equation modeling or path analysis to evaluate the conceptual model was carried out and a good model was found ( $\chi$ 2(5) = 1.634; CFI = 0.994; TLI = 0.973; IFI = 0.994; RMSEA = 0.039; PCLOSE = 0.594; SRMR = 0.029). All standardized values in the model are significant except for regressions from PBC to BB and from PA to BB (Figure 2).

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R	$R^2$	Adjusted $R^2$	RMSE	$R^2$ Change	F Change	df1	df2	p	
0.641	0.411	0.405	0.804	0.410	73.20	3	787	0.000	
			В	SD	β	t	р	95% <i>CI</i> Lower	Upper
(Constant)			0.522	0.346		1.511	0.132	-0.157	1.202
Attitude tow	ards cruelty-fr	ree cosmetics	0.216	0.058	0.164	3.739	0.000	0.102	0.329
Altruism	•		0.375	0.050	0.316	7.514	0.000	0.277	0.474
Environment	knowledge		0.194	0.043	0.201	4.538	0.000	0.110	0.278
Subjective no	orms		0.182	0.028	0.249	6.438	0.000	0.127	0.238

Table 5. Multiple linear regression for the Buyer behavior toward cruelty-free cosmetics.

R = correlation;  $R^2 = R \times 100 = \%$  of explained variance; RMSE = root mean square error; F = Snedecor's F distribution; df = degrees freedom; p = p-value; B = shared variance between variables;  $\beta = \text{regression coefficient}$ ; t = Student's t-test; CI = confidence interval.

	<b>Table 6.</b> Multiple	linear regression	for the Buver	behavior toward	cruelty-free cosmetics.
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R	$R^2$	Adjusted $R^2$	RMSE	$R^2$ Change	F Change	df1	df2	p	
0.610	0.372	0.364	0.636	0.287	47.925	4	419	0.000	
			В	SD	β	t	р	<b>95%</b> <i>CI</i> Lower	Upper
(Constant)			2.831	0.321		8.829	0.000	2.200	3.461
Gender			-0.363	0.078	-0.186	-4.681	0.000	-0.516	-0.211
Altruism			0.125	0.042	0.138	3.002	0.003	0.043	0.207
Personal ap	pearance co	ncerns	0.183	0.034	0.207	5.325	0.000	0.116	0.251
	nt knowledg		0.207	0.033	0.281	6.288	0.000	0.142	0.272
Buyer behave cosmetic pr	vior toward oducts	cruelty-free	0.148	0.036	0.194	4.113	0.000	0.077	0.218

R = correlation;  $R^2 = R \times 100 = \%$  of explained variance; RMSE = root mean square error; F = Snedecor's F distribution; df = degrees freedom; p = p-value; B = shared variance between variables;  $\beta = \text{regression coefficient}$ ; t = Student's t-test; CI = confidence interval.

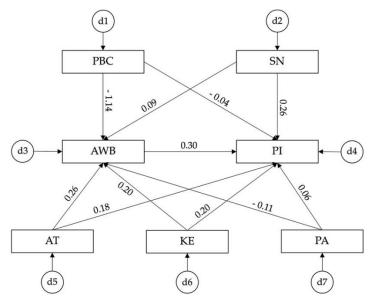


Figure 2. SEM—model results.

## 5. Discussion

There is an association between the Attitude towards animal cruelty-free cosmetics and the Buyer behavior toward cruelty-free cosmetics, confirming H1, which is in-line with the position of several authors that attitude plays an important role in shaping purchase intent [41,43,51]. Perceived behavior control (in this case, operationalized with two financial items) has an influence on Buyer behavior toward cruelty-free cosmetics, as suggested

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by several authors, e.g., [29,45], confirming H2b; however, H2a is not supported, as the association between Perceived behavior control and the Attitude towards animal crueltyfree cosmetics is not statistically significant, which is in-line with Grappe et al. [7], who did not confirm the hypothesis that perceived behavioral control would have an impact on consumers' attitude towards the cosmetic product with the claim "not tested on animals". Subjective norms are associated with the Attitude towards animal cruelty-free cosmetics and Buyer behavior toward cruelty-free cosmetics, thus supporting H3a and H3b. According to the literature, the Attitude towards cruelty-free cosmetics is positively influenced by Subjective norms, e.g., [47,48,52]. Altruism is positively associated with the Attitude towards animal cruelty-free cosmetics and Buyer behavior toward cruelty-free cosmetics, thus supporting H4a and H4b, in line with the literature, e.g., [48,52]. Personal appearance concerns do not present a significant linkage either with the Attitude towards animal cruelty-free cosmetics or with Buyer behavior toward cruelty-free cosmetics, contrary to Grappe et al. [7], who found that more egotistic concerns, such as personal appearance, explain the formation of attitudes towards cruelty-free cosmetics; as such, H5a and H5b are not confirmed. Environmental knowledge is associated with the Attitude towards animal cruelty-free cosmetics and the Buyer behavior toward cruelty-free cosmetics, confirming hypotheses H6a and H6b and corroborating the literature, e.g., [19,48,51,52].

There were statistically significant differences in gender regarding the Attitude towards cruelty-free cosmetics and Buyer behavior toward cruelty-free cosmetics, but not concerning Subjective norms and Perceived behavior control. These results corroborate those of Alonso-Almeida, Fernández de Navarrete, and Rodriguez-Pomeda [59], who stated that female students are more concerned about corporate social responsibility issues and those of Klein, Smith, and John [60], who reported that more women than men boycotted non-cruelty-free products. The corollaries regarding human-resource management practices point to the need to promote women in organizational as well as political settings, to perhaps diminish the current levels of conflict experienced in organizations and between countries (e.g., the Russia–Ukraine war).

Statistically significant differences were also found in age groups regarding Subjective norms. The expectation that there would be generational differences was only verified, very slightly, between Millennials (age group from 27 to 41 years old) and generation X (age group from 42 to 56 years old) regarding Subjective norms. In other words, Millennials are a little less influenced by expectations of approval from family, friends, and society, than Generation X. The study does not confirm the expectation that Generation Z, due to its sustainability-oriented characteristics, greater social responsibility, greater ethical awareness, consideration for animal welfare and the environment, and willingness to pay more for cruelty-free products [58] would be more likely to develop a more favorable buying attitude and behavior.

Although we have found robust models explaining the variance in the constructs, the model related to Buyer behavior toward cruelty-free cosmetics does not include any sociodemographic variable (only psychological variables). However, the model related to the Attitude towards cruelty-free cosmetics includes sociodemographic and psychological variables, in line with the literature [17,48,50–53,59,60].

Hypothesis H7 stated that there would be differences in Buyer behavior toward cruelty-free cosmetics and Attitude towards cruelty-free cosmetics related to sociodemographic characteristics. These include gender, as discussed above, a main sociodemographic characteristic that has important corollaries—namely, regarding the organization of society, which we recommend should change, following the results arrived at in this study. Female citizens have deeper concerns and feelings (are generally less dependent on superficial appearance and superficial intentions, wanting somewhat deeper relationships) while at the same time being less concerned with personal control (are more given to a balanced share of control in safe relationships versus desiring obsessive control in controlling relationships); hence our results are coherent with previous research [72].

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Finally, a structural equation modeling or path analysis to evaluate the conceptual model was carried out. It was found to be a good model fit, being that standardized values in the model are significant except for regressions from PBC to BB and from PA to BB. Being that this study intended to extend the theory of planned behavior model and to examine the humane factors (Attitude towards cruelty-free, Perceived behavioral control, Subjective norms, Altruism, Environmental knowledge, and Personal appearance concerns) that shape the attitudes and buyer behavior toward cruelty-free cosmetics and the consumer characteristics that reflect their behavior toward such products, Hypothesis 8 (Buyer behavior is determined by Attitude towards cruelty-free, Perceived behavioral control, Subjective norms, Altruism, Environmental knowledge, and Personal appearance concerns) is partially confirmed.

## 6. Conclusions, Limitations, and Suggestions for Future Research

This quantitative study tested an enriched TBP conceptual model with personal factors influencing purchase attitudes and behavior, reflecting expectations drawn from the extant literature. As described above, the results show that there are positive associations between those factors, in line with the literature, confirming most of the research hypotheses formulated and the partial validity of the extended conceptual model, excepting Personal appearance concerns, which has no impact on the dependent variables (contradicting the literature). The results also show significant differences in the different variables in the model as a function of gender; indeed, the fact that women are more sensitive to the problems related to cruelty-free cosmetics is suggestive of greater openness to the fundamental issues of our time, which makes them more suitable than men for leadership positions in which actions have to be taken that balance economic interests with these big questions. However, age groups, here associated with generational cohorts, do not present significant differences that support, namely, the expectation that Generation Z would clearly show more favorable attitudes and purchase behaviors in relation to cruelty-free cosmetic products.

This study, therefore, contributes to a more complete approach to the model based on TPB that explains consumer behavior regarding animal cruelty-free cosmetics. For cosmetic product brands, it may be advantageous to recognize that consumers' altruism and the knowledge they have of the environment lead them to value cruelty-free products and, consequently, should strengthen consumers' trust (for example, through partnerships with independent entities that could certify the absence of animal testing).

This pilot study also presents some limitations, namely, being based on a convenience and snowball sample, it is not entirely random; the results cannot be generalized to the Portuguese population. Though important insights were obtained, more in-depth studies are warranted. In future research, it would be important to overcome these limitations and also include questions aiming at better characterizing the respondents, namely, regarding their income and purchasing power, and the subsequent association with the behavior outcomes, and exploring the intention–behavior gap in ethical cosmetics' consumption.

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