

Article

Understanding the Impact of Online Communication Strategies on Consumer Purchase Intention for Green Cosmetics

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Abstract: Increased environmental awareness has increased the demand for green products, mainly cosmetics. This fact challenges companies to adapt to changes and consider environmental problems in their communication strategies to offer products that meet current trends in the consumer market. This implies the need to understand the antecedents of purchase intention better. This research was guided by the theory of planned behaviour (TPB) with the aim of understanding the impact of online communication strategies on consumer purchase intention of green cosmetics. Intention to purchase green cosmetics was measured, as were two of the main TPB constructs, specifically attitude and subjective norms. In addition, other variables were added to the study, such as electronic word of mouth (e-WOM), influencer marketing, and brand content. Data collected through an online survey (N = 151) were analysed using statistical techniques based on variance through partial least squares (PLS) using the SmartPLS3 v.3.3.9 software. The results show that the online communication strategies that impact the purchase intention of green cosmetics are e-WOM and brand content. In practice, the results obtained provide valuable information for professionals and academics, benefiting the perception of the factors that motivate the intention to purchase green cosmetics, contributing to the implementation of better online communication strategies.

Keywords: green marketing; online green marketing strategies; green cosmetics; theory of planned behaviour



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1. Introduction

An increasing scarcity of natural resources and climate change harm the planet and human life. For this reason, individuals are increasingly becoming environmentally conscious, seeking to modify behaviours and purchasing decisions toward more sustainable configurations to minimise the environmental impact of their actions [1–4]. Consumers are paying more attention to a product’s origins, production processes, ecological implications, and safety. Therefore, the preference for natural, biodegradable, bioactive compounds with non-toxic effects is growing over that for synthetic ones [5]. Thus, the search for natural ingredients is one of the main targets of the cosmetics industry [6].

The cosmetics industry has become a highly competitive sector for which its products’ quality, efficacy, and safety are paramount [7]. However, the term “natural” is in the spotlight, and the latest trends tend to include natural ingredients in cosmetics development. Natural ingredient use is one of the significant challenges the cosmetics industry has faced since the 1990s because it involves a set of commitments that must be followed, such as sustainable/organic agriculture use, the optimal use of natural resources, not containing synthetic chemical ingredients, and not containing genetically modified organisms (GMOs), among others [8].

The demand for green cosmetics has increased exceptionally [6]. It is estimated that by 2023, the sector will be worth around 571.1 billion dollars, which represents an increase

of 8% from the previous year. In addition, projections indicate that the niche will continue to grow and should reach 663 billion dollars a year worldwide by 2027 [9].

According to a study by [10], consumers who buy naturally produced ingredients in facial and body products grew from an average of 18% of sales in 2017 to 24% of sales in 2021. Environmentally conscious consumers are willing to pay more for sustainable and natural products. In 2022, the global cosmetics market grew by more than 15% compared to the previous year [11].

In Portugal, the cosmetics market had a turnover of around 1.488 million euros in 2021 [9]. Motivated by the increased demand for green products, companies have sought to adapt to this new form of consumption for this new consumer to meet their needs, adopting more sustainable production, environmental management systems, and green product incorporation in their portfolios [12,13]. However, more is needed for companies to be sustainable in terms of production and products. They need to define new sustainable marketing strategies (green marketing) to have a competitive advantage in the market [14]. These days, this type of strategy is facilitated by the digital medium through various online channels to promote and build a relationship with consumers, making it possible to increase their awareness of brands [15,16].

In the cosmetics industry, at the digital level, social networks are the principal forms of companies' communication with the green consumer for the dissemination of their sustainable production methods, their portfolio of green products, and the respective information about them [16,17]. Therefore, green cosmetics companies that implement strategies on social networks can influence the purchase intention of the green consumer, namely through electronic word of mouth (e-WOM), influencer marketing, and brand content [4,17–21].

To understand consumer behaviour and its connection to the purchase intention of green cosmetics, it is necessary to understand the antecedents that influence purchase intention. In the literature, some green product and cosmetics investigations use the theory of planned behaviour (TPB) to predict purchase intention [4]. In this investigation, the quantitative methodology supported by the TPB model was used, focusing on the relationship between purchase intention, attitude, and subjective norms.

The impact of online communication strategies on purchase intention needs to be studied, and there needs to be more information on this subject, especially on the Portuguese market. Despite environmental problems affecting aspects of human life, only a few academic fields have studies on green topics [14]. To this end, the arguments used in this study consider two dimensions of the TPB model, attitude and subjective norms, and add three independent variables (e-WOM, influencer marketing, and brand content), seeking to advance a debate that is still little explored in the Portuguese context. Such inclusions are explained in the next section.

This paper begins with a review of relevant literature on green marketing, online green marketing strategies and their relationship with purchase intention for green cosmetics, and the theory of planned behaviour (TPB) and green cosmetics. The methodology used to examine the relationship between the constructs of the proposed conceptual model is presented. After that, the article offers a discussion of the findings and implications. Finally, it indicates some limitations and directions for future research.

2. Theoretical Framework and Hypotheses

This article addresses concepts related to green marketing and its importance in consumer behaviour at an ecological level. It adopts the theory of planned behaviour (TPB) to explain green consumer purchasing intentions. A study by [22] points out that the TPB is suitable for predicting consumer intention in several areas.

The theory of planned behaviour is one of the theories most commonly used in explaining consumer behaviour, namely in understanding the antecedents that can influence this behaviour in terms of sustainability. It explains and reveals the motivational influences on individual behaviour [23,24]. The TPB consists of a socio-cognitive model designed

to explain the variation in voluntary behaviour which analyses the antecedents that can influence consumers' purchase intentions based on human perception of the possible consequences of the purchase [4,23].

This model is frequently used to investigate the purchase intention of green products, including the green cosmetics market [4,25]. Thus, purchase intention is at the centre of it and is considered a motivating factor for carrying out specific purchasing behaviours [26]. Based on the same, the intention to implement a behaviour is influenced by the attitude towards it, subjective norms, and perceived behavioural control [4,27,28].

2.1. Green Marketing

Consumers are no longer looking for products to satisfy their needs. They are looking for "green" products whose companies present sustainable and ecological practices. This new consumer is called an environmentally conscious or green consumer [13]. On the part of companies, the adequacy of marketing strategies must consider this type of consumer and the environmental sustainability he seeks, providing a competitive advantage. The concept of green marketing comes from this strategic adaptation, which consists of developing marketing practices based on a responsible approach to the environment [12,14] and includes a wide range of marketing activities focused on a long-term strategy for environmental factors. It involves using a company's resources for innovation [29–31].

Since consumers currently use digital media daily, brands must use online strategies that can influence the purchase intention of the green consumer. The authors of [32] point out that online marketing strategies that employ e-WOM and influencer marketing are becoming increasingly popular and sought after. Companies use them to promote themselves as a brand and their products and services, as consumers trust the opinions and recommendations of those they follow on social media.

Increasingly in the cosmetics industry, digital marketing through social media is becoming a crucial channel for brands to share content about themselves, e.g., sustainable production methods and product portfolio, to maintain green credibility [16,17]. Socially responsible brand content on social media facilitates socialisation between them and their consumers so that they bring about a change in consumer behaviour [33,34].

In a Statista study [35], 33 percent of consumers discovered beauty brands online through recommendations and comments on social media, 22 percent say they trust posts by expert bloggers, and 22 percent obtain information about new products through celebrity endorsements on social media. As such, e-WOM, influencer marketing, and brand content are pertinent strategies because of their effectiveness with consumers. Several authors refer to e-WOM, influencer marketing, and brand content as influencing purchase intention [4,17–21].

2.2. Online Green Marketing Strategies and the Purchase Intention of Green Cosmetics

The purchase intention of green cosmetics and products can be influenced by online green marketing strategies, such as e-WOM, influencer marketing, and brand content.

With the proliferation of the Internet and the online resources available (e.g., e-mail, instant messaging, blogs, forums, review websites, online communities, and social networking websites), consumers are increasingly using this medium to share and search for information, express their opinions and experiences, as well as to advise other consumers about brands, products, or services on the market [36]. e-WOM refers to a positive/negative statement that potential, current, or former customers make about a product or a company via the Internet [32,37]. The e-WOM concept has been expanded to refer to any comments, recommendations, or statements (positive, negative, or neutral) about brands, products, or services made digitally available for discussion or sharing [38]. e-WOM is a powerful promotional weapon for a company and its products and services [39]. However, e-WOM only produces advertising or positioning value if consumers pass on the message to others because it is only by passing on the message that they gain credibility. Consumers rely more on information other consumers provide through social networks than on informa-

tion supplied by companies due to corporate greenwashing issues [40]. Several authors have found that e-WOM significantly affects consumer green purchasing behaviour, as the experiences and knowledge experienced by other consumers can affect their intention to purchase green products [17,18,21,37,41,42].

Therefore, the first research hypothesis (H1) is:

Hypothesis 1 (H1). *e-WOM positively impacts consumers' purchase intention of green cosmetics.*

Influencer marketing is booming and gaining popularity, and is a crucial resource for brands to reach their target audience effectively [33,43]. Influencer marketing is a form of marketing communication that uses a personality based on their knowledge, popularity, or reputation (influencer) that, based on the trust of the target audience who know and admire them, seeks to convince them about the qualities of a product/service [29]. Therefore, it is a digital marketing strategy that establishes a partnership between a brand and digital content producers, influencing the brand's target audience to obtain customers, strengthen relationships with current customers, and increase the purchasing intent of potential customers [44,45]. For [43], influencer marketing allows companies to select and incentivise influencers to use their followers through their exclusive resources to promote the company and its offers and thus improve the performance of corporate actions with the target audience. Brands' use of influencers creates a feeling of trust and identification among the public that follows them. So, influencers are a connection between the brands and a specific target audience to increase brand awareness and sales [44,46,47].

Panopoulos, et.al. [20] suggest that influencers are at the forefront of the dissemination of themes on sustainability and act as models for promoting lifestyles and, often, as enablers of social change. Also, the same author adds that influencers are relevant for green product dissemination in their target audience due to their positive public image, which allows them to persuade consumers to buy green products. Shravya [48] indicates that influencer credibility positively impacts consumer purchase intention. Pop, et.al. [4] states that celebrity and influencer posts should be considered to create awareness and positive attitudes toward green brands. In their study, Jalali and Khalid [49] concluded that photographic content by Instagram influencers and green word of mouth (GWOM) affect followers' green attitudes and consumption intentions.

Therefore, according to the existing literature, the following research hypothesis is defined:

Hypothesis 2 (H2). *Influencer marketing positively impacts consumers' purchase intention of green cosmetics.*

Content marketing focuses on creating and distributing valuable content to attract, win, and engage a profit-generating target audience [50]. It aims at a continuous socialisation between brands and consumers through engaging and relevant content about the brands, according to the stage of consumer journey. The content developed seeks to generate trust and credibility among the target audience and facilitate consumer learning. Content should be the basis of a digital marketing strategy, as it influences purchase intention, attracts potential customers, and builds brand authority [33,34,50,51]. So, if consumer journey content provides environmental knowledge and positive information about the attributes of green products, the consumer's intention changes and leads them to purchase green products [19,23]. Al-Gasawneh and Al-Adamat [42], in its study in Jordan, found that content marketing positively impacts the intent to purchase green products.

Thus, the following research hypothesis is proposed:

Hypothesis 3 (H3). *Brand content positively impacts consumers' purchase intention of green cosmetics.*

2.3. Theory of Planned Behaviour (TPB) and Green Cosmetics

The TPB model was used in this investigation to explain the intention to purchase green cosmetics, as it is one of the most used theories to understand consumer behaviour and is often associated with studies of purchase intention for green products, including green cosmetics [4,23–25]. Thus, purchase intention is the primary variable explained in this study, being defined as the individual's willingness to perform a specific behaviour [26] and representing the immediate antecedent of purchase behaviour, as determined by the individual's speed in completing the typical behaviour [52]. For [53], purchase intention is a requirement to encourage and lead consumers to buy products and services. Consumers who are aware and have an environmental attitude use green cosmetics to their own and the environment's advantage, with an ecological attitude being one of the antecedents that influence purchase intention. This attitude and its influence on the intention to purchase green products, including green cosmetics, has been verified by several authors [2,4,25,54] and proven to be the most significant determinant of behavioural intentions towards green products [55]. Thus, the following research hypothesis is presented:

Hypothesis 4 (H4). *Attitude positively impacts the purchase intention of Portuguese consumers for green cosmetics.*

Subjective norms concern whether or not the individual performs a behaviour considering social pressure [26]. About the green cosmetics sector, Liobikienė and Bernatoniene [19] state that the social context encourages consumers to purchase this type of cosmetics. Therefore, how reference groups and peers perceive consumer behaviour influences them, leading to the purchase of these cosmetics according to society's perception [24,56]. The last research hypothesis of this study is the following:

Hypothesis 5 (H5). *Subjective norms positively impact the purchase intention of Portuguese consumers for green cosmetics.*

3. Materials and Methods

A quantitative methodology was used to test the proposed research hypotheses (Figure 1). According to [57], this methodology is used to estimate the magnitude or occurrence of phenomena and test hypotheses.

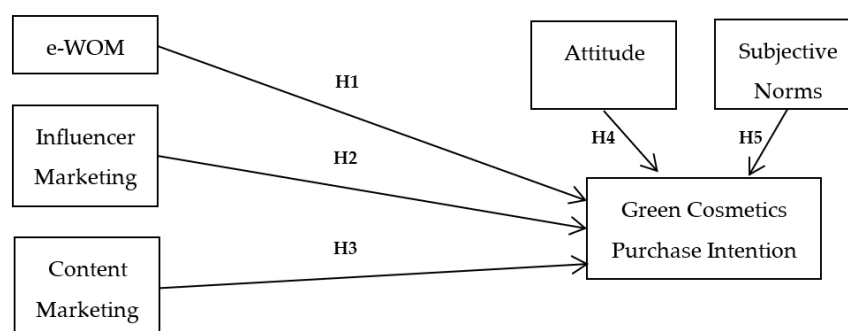


Figure 1. Conceptual model.

3.1. Measuring Scales

The questionnaire consisted of closed questions to contain previously defined categories or response options, including questions in multiple-choice format, checkbox, and linear scale [57]. All variables were measured from a five-point Likert scale, where 1 corresponded to “completely disagree” and 5 to “completely agree”. The questions covered refer to each variable of the conceptual model and measurement scales adapted from existing literature and previously developed and validated by other authors, as shown in Table 1.

Table 1. Items x variables.

Variable	Items	Authors
e-WOM	e-WOM1: When I look for information about green cosmetics, I investigate the opinion of other consumers on social networks; e-WOM2: The opinion of other consumers on social networks impacts my intention to purchase cosmetics green.	[17,18,21]
Influencer Marketing	IM1: When I need information about green cosmetics, I look for the opinion of influencers on social networks; IM2: The opinion of influencers on social networks impacts my intention to purchase green cosmetics.	[4]
Brand Content	BC1: When I need information about green cosmetics, I look for the content of socially responsible brands on social networks; BC2: The green cosmetics brands' content is valuable and informative regarding the environmental aspect; BC3: The green cosmetics brands' content explains the benefits of using and buying them; BC4: The green cosmetics brands' content on social networks impacts my intention to purchase green cosmetics.	[19,23]
Attitude	A1: My environmental awareness impacts my intention to purchase green cosmetics; A2: Positive beliefs regarding the well-being of the environment impact my intention to purchase green cosmetics; A3: My feelings regarding environmental well-being impact my intention to purchase green cosmetics; A4: My behavior towards the environment influences my attitude towards the intention to purchase green cosmetics.	[2,19,25]
Subjective Norms	SN1: Behavioral expectations from friends, family, other consumers, and influencers impact my intention to purchase green cosmetics; SN2: Social pressure from friends, family, and other consumers influencers impact my purchase intention for green cosmetics; SN3: Social approval positively impacts my purchase intention for green cosmetics to convey a positive impression on my reference groups).	[2,19,24,25,54,56,58,59]
Intention to Purchase Green Cosmetics	IP1: I am willing to buy green cosmetics because they are beneficial to my health; IP2: I am willing to buy green cosmetics because they do not harm the environment.	[1,60]

3.2. Sampling

Considering the scope of the investigation, the reference universe were members of the Portuguese population aged 18 years or over who have already bought or intend to buy green cosmetics (151), considering those who are users of social networks because the online green marketing strategies under study are interconnected with these networks. To allow for the characterisation of the sample, the questionnaire included some questions about the participants' sociodemographic data. It was created with the online functionalities of Google Forms and was submitted to a pre-test with 10 Portuguese consumers, who confirmed the clarity of the questions and items; no adjustments were necessary. Data were collected online between June and August 2022 through social networks and e-mail.

3.3. Statistical Analysis Procedure

To identify the determinants of the purchase intention of green cosmetics and test the set of hypotheses of the conceptual model, the collected data were submitted to SmartPLS3 v.3.3.9 for structural equations. Two models were evaluated: the measurement model and the structural model. According to the recommendations of [61], the measurement model verifies the accurate measurement of concepts by the respective items of each construct. In contrast, the structural model works on the causal relationships between the variables.

Then, the measurement model was evaluated using statistical techniques based on variance, using partial least squares (PLS).

Thus, to evaluate the model, reliability (through factor loadings and composite reliability), internal consistency (through Cronbach's alpha), convergent validity (through average variance extracted), and discriminant validity of the model, through the Fornell–Larcker criterion (square root of average variance extracted and correlation coefficients) and through the heterotrait–monotrait ratio of correlations (HTMT index, HTMT correlation values) were verified. Finally, the structural model (SEM) was evaluated through the PLS-SEM evaluation, and the hypotheses were tested. Thus, several steps were performed to assess the model, namely the assessment of multicollinearity (through the variance inflation factor), determination coefficients (R^2), predictive relevance (Q^2), effect size (f^2), and the estimation of the size and significance of the path coefficients. For the hypothesis test, the significance level was defined (5%), and the Beta value (β), the probability of significance (p -value), and the t -value, which is a complementary value to the p -value, were calculated. Thus, these calculations made validating or rejecting the defined hypotheses possible.

4. Results

The analysis of the results began with the characterisation of the sample, followed by the evaluation of the measurement model, allowing the assessment of the reliability and validity of the constructs, evaluation of the structural model, and testing of hypotheses.

4.1. Sample Characterisation

A total of 243 individuals agreed to participate in this study, of whom only 151 were considered for data analysis because they were Portuguese consumers who purchased or intended to purchase green cosmetics. The minimum sample size was estimated based on the recommendations of [62], who consider that for a significance level of 5%, and a power of 80%, there is a need to include five to ten subjects per questionnaire item. As the questionnaire consists of 17 items, a minimum of 85 to 170 subjects would be needed for this study. The characteristics of the sample are shown in Table 2.

Table 2. Participants' characteristics.

Total Sample (N = 151)			
Variables	Categories	Frequency	Percent
Gender	Female	103	68.2
	Male	34	22.5
	Others	1	0.7
	Prefer not to say	13	8.6
Age Group	18–24	79	52.3
	25–40	62	41.1%
	41–54	6	4%
	55–64	3	2%
	65+	1	0.7%
Education Level	Did not complete high school	7	4.7%
	Completed high school (12 years)	30	19.9%
	Bachelor's degree	68	45%
	Postgraduate diploma	18	11.9%
	Master's degree	23	15.2%
	Doctorate	5	3.3%
Occupation	Student	42	27.8%
	Worker–Student	45	29.8%
	Worker	59	39.1%
	Unemployed	4	2.6%
	Retired	1	0.7%

4.2. Evaluation of the Measurement Model

The model proposed in this investigation was examined using statistical techniques based on variance through partial least squares (PLS). According to Chin et al. [63], the PLS estimation model is the most appropriate when the sample size is under 200 observations. Thus, to evaluate the same, SmartPLS3 v.3.3.9 software was used to assess indicator and internal consistency reliability and convergent and discriminant validity of the measurement model.

The evaluation of reflective measurement models includes reliability evaluation (indicator reliability and internal consistency reliability) and validity evaluation (convergent validity and discriminant validity) [64]. The same author points out that the first step in the reflective evaluation of the measurement model is to assess indicator reliability and, subsequently, internal consistency reliability [64].

4.2.1. Reliability

Indicator Reliability

In this study, all constructs were modelled as reflexive. For [64], indicator reliability is a measure of whether the variance of each indicator is explained by its construct. The authors of [65] recommend that factorial loads (outer loadings), which reflect how much an item contributes to a factor or a variable, should be greater than 0.70 for each item. However, ref. [66] suggests that a value of 0.50 or 0.60 remains acceptable. As can be seen, all items have values greater than 0.50 for the constructs at all points in the measurement model, as shown in Table 3.

Table 3. Indicator reliability results.

Items/Variables	Attitude	Subjective Norms	e-WOM	Influencer Marketing	Content Marketing	Purchase Intention of Green Cosmetics
AT1	0.860					
AT2	0.915					
AT3	0.694					
AT4	0.850					
SN1		0.934				
SN2		0.802				
SN3		0.790				
e-WOM1			0.732			
e-WOM2			0.859			
IM1				0.917		
IM2				0.963		
CM1					0.784	
CM2					0.803	
CM3					0.852	
CM4					0.816	
IC1						0.817
IC2						0.775

Note: AT = attitude; SN = subjective norms; e-WOM = electronic word of mouth; IM = influencer marketing; CM = content marketing; IC = purchase intention.

Internal Consistency Reliability

Internal consistency reliability refers to whether the indicators measuring the same construct are interconnected [64]. This study used two internal consistency reliability measures—Cronbach's alpha (α) and composite reliability (CC).

Cronbach's alpha measures the internal consistency of the study scales' items [67]. Cronbach's alpha value must be greater than 0.70 [63], and composite reliability must be more significant than 0.70 to be considered adequate [68]. Thus, measurement reliability

implies consistency and accuracy, suggesting that the scales are sufficiently consistent and free of measurement errors to be useful [67]. All values are more significant than 0.70, which supports the reliability of the variables (Table 4).

Table 4. Internal consistency reliability results.

Latent Variables	Cronbach's Alpha (α)	Composite Reliability (CC)
Attitude	0.898	0.9
Subjective Norms	0.882	0.881
e-WOM	0.772	0.777
Influence Marketing	0.938	0.938
Brand Content	0.887	0.887
Purchase Intention of Green Cosmetics	0.775	0.776

Note: all values > 0.70.

4.2.2. Validity

Convergent Validity

The third step is to evaluate the measurement model. Convergent validity refers to the construct converging to explain the variance of its indicators. The measure used to evaluate the convergent validity of a construct is the average variance extracted (AVE) for all the indicators of each construct [64].

To establish convergent validity, the average variance extracted (AVE) must be greater than 0.50 [65,68,69]. All average variance values extracted from the latent variables are greater than 0.50, demonstrating adequate convergent validity.

Discriminant Validity

It is the last stage in the evaluation of the measurement model. Discriminant validity makes it possible to measure whether a construct is empirically distinct from other constructs [64].

The Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT) of correlations were used to assess discriminant validity. According to the Fornell–Larcker criterion, to establish discriminant validity, the square root of the average variance extracted (AVE) of each latent variable must be greater than any other latent construct [68], that is, greater than any correlation value with other variables.

It is possible to conclude that all variables demonstrated adequate discriminant validity because the diagonal values, the values of the square root of the AVE, are greater than their corresponding correlation coefficients with other variables, showing good discriminant validity (Table 5).

Table 5. Assessment of discriminant validity by the Fornell–Larcker criterion.

Latent Variables	1	2	3	4	5	6	7	8
1. Attitude	0.834							
2. Brand Content	0.591	0.814						
3. e-WOM	0.514	0.649	0.798					
4. Influence Marketing	0.202	0.286	0.293	0.221	0.209	0.94		
5. Purchase Intention of Green Cosmetics	0.559	0.621	0.624	0.592	0.667	0.144	0.796	
6. Subjective Norms	0.187	0.195	0.194	0.199	0.204	0.446	0.252	0.844

Note: The bold diagonal values represent AVE's square root.

The heterotrait–monotrait ratio of correlations (HTMT) is a new alternative approach to assess discriminant validity based on the comparison between heterotrait–heteromethod correlations and monotrait–heteromethod correlations which was used in this study and states that the HTMT index should be less than 0.90 [70]. These values are below 0.9, meaning discriminant validity has been established.

4.3. Evaluation of the Structural Model and Hypothesis Testing

The PLS-SEM evaluation of the structural model involves assessing the model's ability to predict the variance in the dependent variables [71]. Thus, after establishing reliability and validity, the structural model was evaluated based on the multicollinearity evaluation, the f^2 effect size and path coefficient estimation and significance, the coefficient of determination (R^2), and the predictive relevance (Q^2) [64,66].

The procedure of consistent resampling of bootstrapping PLS, where 5000 subsamples were used, and the default settings (i.e., parallel processing, without sign changes) aimed at evaluating the path coefficients and their significance levels.

4.3.1. Multicollinearity Evaluation

This study verified multicollinearity using variance inflation factor (VIF). A model is considered free of bias when its VIF value is less than 5.0 [65], and all exogenous constructs had VIF values less than this value. Thus, multicollinearity in the structural model was satisfactory.

4.3.2. f^2 and Path Coefficients

For calculating the effect size (f^2) of each path of a model, it is suggested that it be calculated using Cohen's f^2 [72]. Thus, as a general rule, it is established that values greater than 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes, respectively [73]. These results will be discussed in the hypothesis test.

4.3.3. Coefficients of Determination (R^2) and Predictive Relevance (Q^2)

The coefficients of determination (R^2) and predictive relevance (Q^2) are used to determine the predictive relevance of a model. R^2 refers to the level of variation by which the exogenous constructs explain the endogenous constructs, and values of 0.02, 0.13, and 0.26 indicate a weak, moderate, and substantial level [73]. Thus, R^2 values for attitude ($R^2 = 0.637$) and the intention to purchase green cosmetics ($R^2 = 0.529$) are significant, representing the % of the variable explained by the items that constitute it. Q^2 values greater than zero for an explicit reflexive endogenous latent variable indicate the predictive relevance of the pathway model for a specific dependent variable [66,74]. In this study, Q^2 values are greater than zero.

4.3.4. Hypothesis Testing

In this study, hypothesis testing was used. It consists of a method of verifying the veracity of a statement related to a maximum risk of error, with the significance level being the probability of making an error, which can be 5%, 1%, or 10% [75]. Thus, the p -value (probability of significance) must be less than the error defined for this study, 5%, so the hypothesis is not rejected [75]. The t -value quantifies the difference between population means; the p -value is the probability of obtaining a t -value at least as large as that observed in the data sample if the hypothesis is true [76]. In this way, the t -value is an intermediary to calculate the p -value, the two being complementary and supporting each other in validating or rejecting the hypothesis [76].

The results of this study (Table 5) show that H1 is confirmed. e-WOM affects the purchase intention of green cosmetics (H1: $\beta = 0.344$; $t = 2.506$; $p < 0.05$). However, this effect is small ($f^2 = 0.135$). Additionally, it is possible to verify that the predicted positive impact of influencer marketing on the purchase intention of green cosmetics (H2: $\beta = (-0.151)$; $t = 1.577$; $p > 0.05$) is negative and insignificant, and H2 is not supported. In hypothesis H3, the positive effect of brand content on the purchase intention of green cosmetics is confirmed (H3: $\beta = 0.283$; $t = 2.113$; $p < 0.05$). However, the results show a negligible effect ($f^2 = 0.083$). Still, H4 is supported since the link between attitude and intention to purchase green cosmetics is positive and significant (H4: $\beta = 0.216$; $t = 2.002$; $p < 0.05$). In addition, it is verified that attitude has a negligible effect on the intention to purchase green cosmetics ($f^2 = 0.061$). Finally, H5 is rejected because, according to Table 6,

the results reflect a statistically insignificant effect of subjective norms on the purchase intention of green cosmetics (H5: $\beta = 0.158$; $t = 1.504$; $p > 0.05$).

Table 6. Results of the evaluation of the structural model and hypothesis test.

Path	Beta (β)	T	P	VIF	f ²	R ²	Q ²
e-WOM → Purchase Intention of Green Cosmetics	0.344	2.506	0.012	1.845	0.135	0.52	0.284
Influence Marketing → Purchase Intention of Green Cosmetics	−0.151	1.577	0.115	1.336	0.036		
Brand Content → Purchase Intention of Green Cosmetics	0.283	2.113	0.035	2.074	0.083		
Attitude → Purchase Intention of Green Cosmetics	0.216	2.002	0.045	1.621	0.061		
Subjective Norms → Purchase Intention of Green Cosmetics	0.158	1.504	0.133	1.264	0.042		

5. Discussion and Conclusions

This section will look at the veracity of the research hypotheses, as well as provide an answer to the proposed objective. The main limitations of this research will also be mentioned, which will also be suggestions for future research, and, finally, contributions to the management of this research will be addressed.

Based on the theory of planned behaviour, this study aimed to understand the impact of online communication strategies on consumers' purchase intention of green cosmetics. According to the research findings, it was possible to verify that only two online green marketing strategies positively impact the purchase intention of the Portuguese consumer of green cosmetics, namely e-WOM and brand content. e-WOM influences the purchase intention of green cosmetics. These results align with some authors' claims that e-WOM influences the consumer's green purchasing behaviour [17,18,21,40,77]. Furthermore, refs. [40,77] confirm that consumers tend to trust the information provided by others. Regarding the positive effect of brand content on Portuguese consumers' intention to purchase green cosmetics, the results are confirmed by authors who demonstrate that it encourages and causes a change in consumers' purchasing behaviour [33,34,50,51], namely in their purchase intention through the information made available to increase environmental knowledge [19,23]. Much of the existing literature states that influencer marketing affects the purchase intention of ecological cosmetics [4] and that, by using influencer marketing, socially responsible brands strengthen their relationship with customers and influence their decisions [44,45]; it should be noted that, although knowledge and influence are fundamental for an individual to be considered an opinion leader, they work separately, since someone with very high knowledge may not be an influencer and someone with high influence may not have high knowledge and may even pass on misinformation on a given topic [78]. It is therefore important to understand which digital influencers specialise in the area in which the brand operates [79]. We conclude from this study that influencer marketing has no impact on Portuguese consumers' intention to buy green cosmetics.

Regarding the intention to purchase green cosmetics by Portuguese consumers, it is positively impacted by attitude. However, its effect on the intention to purchase green cosmetics is small. These results are corroborated by some authors who claim that attitude is a determinant of green consumption [2,29], namely that it influences the purchase intention of green cosmetics [2,13,25]. However, it is essential to highlight that consumers' positive attitudes toward ecological issues do not always translate into actual purchasing behaviour [80]. It is also possible to conclude that subjective norms do not impact the purchase intention of green cosmetics by Portuguese consumers, contrary to what is stated by some authors who claim that they influence the purchase intention of these cosmetics [13,24,31]. It is also possible to conclude that subjective norms do not impact the purchase intention of green cosmetics by Portuguese consumers, contrary to what is stated by some authors who claim that they influence the purchase intention of these cosmetics [19,24,56,81].

Considering the findings of the research, it is essential to mention that even if the adoption of the theory of planned behaviour is adequate to explain the perspectives on

consumer purchase intention of green cosmetics, the variables included in this study did not demonstrate a significantly high importance. It is concluded that it is relevant to enhance the basic model with the addition of independent variables to understand the purchase intention of green cosmetics better.

Another important consideration that requires more attention from researchers is that subjective norms were not considered significant in determining consumer purchase intention. Thus, the low relevance of subjective norms should be explored in further research.

Ajzen's theory of planned behaviour also includes perceived behavioural control and beliefs (behavioural, normative, and control). In this study, these variables were not considered, so it is suggested that future research address online marketing strategies (e-WOM, influencer marketing, and brand content) and their impact on perceived behavioural control and beliefs.

This study had some limitations which should be considered. Firstly, since the sample was small and non-probabilistic, the results obtained do not allow statistical generalisations of the population to be made, thus affecting the representativeness of the study. Another limitation is that this study is purely quantitative, using a questionnaire survey, which could lead to participants not being precise in their answers.

However, scientific studies still need to be conducted due to the increasingly implicit environmental problems and the cosmetics area being subject to demands regarding the manufacturing process of its products and environmental issues. Since this is such an important topic today but so little explored, with the literature scarce and inconclusive, it is essential to study the impact of other antecedents and other online green marketing strategies on the intention to purchase green cosmetics to broaden the range of information on the topic. In addition, studies by category of cosmetics are also essential. For future investigations, it is also suggested that this study be applied to other countries and that it uses, as a complement to the quantitative approach, a qualitative approach so that it is possible to compare results.

For the academic community, this research can be a starting point for future studies on the impact of digital marketing on consumer behaviour about green cosmetics, namely on purchase intention. Since no other studies on the behaviour of the Portuguese consumer regarding the purchase of green cosmetics were identified in the literature, this research will contribute quantitatively to an increase in academic knowledge about the purchase intention of these cosmetics and the influence of green strategies online marketing, namely e-WOM and branded content, on it.

Regarding the relevance for management, this study will provide relevant information for marketing professionals who work with socially responsible cosmetic brands, providing an informative means for them to better implement online communication strategies, helping them in decision-making at an operational level, and providing them with a better perception of the factors that motivate the intention to purchase these cosmetics. Thus, these professionals will be able to broaden the motivations of consumers of green cosmetics and predict purchasing behaviour based on ecological attitudes and behaviour.

In short, this study will be relevant in professional and academic terms as it highlights e-WOM and brand content as online green marketing strategies that impact the purchase intention of Portuguese consumers of green cosmetics. In addition, it reveals the attitude of these consumers as an essential antecedent in the purchase intention of these cosmetics.

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