Key Drivers of Cruelty-Free Cosmetics: Mediating Role of Purchase Intention

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Abstract

This study aims to explore the factors influencing the purchase decisions of cruelty-free cosmetics, focusing on the mediating role of purchase intention. The objectives include evaluating the impact of internal factors (attitude, altruism, environmental knowledge) and external factors (social media, subjective norms) on purchase intention and decision-making. Structural equation modeling (SEM) analyzes the data from a survey of 199 participants to test the relationships between variables. Findings show that internal factors, especially altruism and environmental knowledge, have a stronger influence on purchase intention compared to external pressures from social media and subjective norms. The results indicate that personal beliefs play a vital role in shaping consumers' ethical purchase behavior. This study provides practical insights for cosmetic brands, suggesting that campaigns emphasizing environmental awareness and animal welfare can boost purchase intentions. The novelty of the research lies in differentiating the impacts of internal and external factors, highlighting that consumers prioritize personal values over social influences when making ethical purchasing decisions. The study also offers managerial implications, recommending that brands enhance consumer engagement through educational campaigns to foster long-term commitment to cruelty-free products.

1- Introduction

We anticipate substantial success for the cosmetic industry, which is experiencing significant growth. However, this prosperity comes with the daily torture of numerous small animals in experimental production. As per the findings of Cruelty Free Europe, the number of animals utilized in research experiments and subsequently discarded in 2015 exceeded 192.1 million. Hazardous and toxic chemicals contaminated a significant proportion of these animals, surpassing the previous average estimate of 115 million animals killed annually and affecting a staggering 77.1 million animals [1]. The environmental impact of waste products generated from animal bodies and tissues is of utmost importance [2]. Consumers are increasingly expressing apprehension about the cosmetic industry's impact on the environment and animal welfare as the harsh realities of the industry come to light. This has led to a growing inquiry into the ethical considerations of the current state of the cosmetic industry and its implications for humanity. Humanistic perspectives view animal testing as a highly condemnable practice. Despite the availability of alternative methods, this atrocity is still being carried out unnecessarily. In fact, refraining from animal testing is often more effective and reliable.

The impact of social media and ethical considerations has led to an increased consciousness among consumers regarding their ability to exert influence through ethical purchasing behavior. Consumers perceive that they can effect change in ethical quandaries by altering their purchasing patterns [3]. The aforementioned factors have imposed a sense

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of urgency on brands to promptly exhibit compassion in their merchandise by pledging to discontinue animal testing and strive for a more favorable future for individuals, the ecosystem, and fauna. In 2018, The Body Shop collaborated with Cruelty Free International on the Against Animal Testing campaign, which garnered 8.3 million signatures from 100 animal rights organizations and advocates worldwide within a span of 15 months. The initiative aimed to exert pressure on the brand and raise consumer awareness to end painful animal experiments globally. We subsequently presented the signatures to the United Nations Headquarters, seeking an official ban on such experiments. We expect the cruelty-free cosmetic market to grow in the upcoming years, projecting a value of 14.23 billion USD by 2030 [4], based on a compound growth estimate of 6% per annum. Ethical consumerism is on the rise in Vietnam, but significant barriers such as product accessibility and consumer knowledge gaps may hinder the translation of ethical intentions into action, as the research component of this trend remains underdeveloped. The current research landscape tends to prioritize investigations into ethical and sustainable purchasing intentions rather than exploring the ethical or cruelty-free cosmetics sector within the context of purchase intention. Consequently, there is a dearth of studies and scientific reports in the country that specifically examine the purchase intention of cruelty-free or not tested on animals cosmetics. The aforementioned statement implies that cruelty-free cosmetic companies operating within the nation may encounter challenges in discerning the variables that impact consumers' proclivity to make a purchase. Identifying and understanding consumers' ethical purchasing intentions is of great value to companies trying to develop ethical and friendly business strategies [5]. Once the domestic market becomes less fertile and opportunities arise, it will be a significant challenge for brands that are cruelty-free to animals and the environment to decide whether to participate and grow.

Numerous international studies have investigated the phenomenon of purchasing cruelty-free cosmetics, which pertains to sensitive matters concerning animal welfare and environmental sustainability. Silva et al. (2021) [6] have identified several factors, including attitude, altruism, environmental knowledge, and social media, that significantly influence the intention to purchase cruelty-free cosmetics. These factors influence individuals, leading them to develop a heightened awareness and inclination towards purchasing cosmetics that do not harm animals or the environment. The investigation's findings show similarities in attitude and environmental knowledge [7], altruism [8], and social media [9] compared to previous studies. Grappe et al. (2021) [10] and Magano et al. (2022) [11] have reported that the subjective norm of individuals in the immediate social circle is a crucial determinant of the intention to purchase cruelty-free cosmetics. This is because consumers tend to rely on the support and persuasion of their peers while making purchase decisions, rather than their own intrinsic motivations [12]. This case also encompasses additional factors such as animal welfare considerations [10] and ecological motivation [7]. This problem led the author to ask the first question: The current investigation aims to ascertain whether internal factors like positive attitude, altruism, and environmental knowledge primarily drive consumer purchase intention towards cruelty-free cosmetics, motivating individuals to steer clear of negative environmental impacts and painful experiments. Alternatively, it explores the possibility that external pressures, such as social media and subjective norms from peers, may influence consumer behavior toward cruelty-free cosmetics.

Studies and scientific reports conducted abroad regarding cruelty-free or non-animal tested cosmetics in relation to purchase intention have gained popularity. However, there has been no continuation of these studies to explore the decision-making process behind purchases. If we don't inherit and continue research, the absence of data and measurement of variables influencing consumer purchasing behavior will significantly impact the cruelty-free cosmetics market across all countries, making it difficult to achieve the estimated growth. Cowe & Williams (2000) [13] discovered that a mere 3% of the 30% of consumers surveyed indicated their intention to purchase ethical and eco-friendly products. This implies that survey-based studies [14] may overstate the actual adoption of ethical and cruelty-free practices. This issue prompted the author to pose the first question: If consumers have the intention to buy cruelty-free cosmetics, will they continue to make these purchases?

The research paper, key drivers of cruelty-free cosmetics: the mediating role of purchase intention, was conducted in response to the aforementioned issues and the desire to learn and grow further. The study has proposed several management implications to promote behavior through more effective purchase intention based on the acquired results, contributing to economic improvement for the domestic and international cruelty-free cosmetics market. Once the market grows and becomes fertile, it will be a solid potential backing for brands to continue to participate and fight for more vibrant environmental and animal activities.

2- Literature Review and Hypotheses

2-1- Literature Review

2-1-1- Cruelty-Free Cosmetics

In accordance with the Food and Drug Administration (2022) [15], while the term "not tested on animals" is explicitly defined as not having undergone animal testing, the term "cruelty-free" lacks an official legal definition at present. The term in question is widely employed by cosmetic companies and brands for promotional purposes across various contexts

to convey to consumers that their production process is ethical and cruelty-free [16]. Blili & Bezencon (2010) [17] define cruelty-free cosmetics as beauty products that adhere to environmental and social standards, such as safeguarding animal welfare and preserving the natural ecosystem. A cosmetic product is deemed to be cruelty-free if it satisfies certain criteria, namely that the final product has not been subjected to animal testing, the ingredients used in the formulation have not been tested on animals, and the product has not been tested on animals by a third-party entity acting on behalf of the brand, except where mandated by law. In addition, the aforementioned product is required to undergo various stringent assessments in order to obtain certifications for being cruelty-free from esteemed entities such as PETA, Cruelty Free International, and Choose Cruelty Free. The purpose of this study is to elucidate that cosmetics labeled "cruelty-free" are those that have not undergone testing or treatment that is deemed cruel during the production process.

2-1-2- Attitude

Ajzen (1975) [18] stated that a person's attitude is a reflection of their internal assessment. The individual's performance of the act is directly influenced by the evaluation, whether it is positive or negative. Ajzen (1991) [19] posits that an individual's attitude towards a particular behavior is influenced by their perceptions, beliefs, and emotions towards that behavior. The intensity of the individual's attitude is directly proportional to their intention to perform the behavior. Ajzen (1991) [19] posits that attitude comprises two dimensions: attitude towards the object and attitude towards the behavior. The present study aims to underscore that attitude represents an individual's internal, subjective perception of an object and behavior, which subseque'tly influences the individual's intention to engage in behavior.

2-1-3- Altruism

Batson (2010) [20] states that altruism pertains to the conduct of an individual across various situations, wherein the individual prioritizes the emotions and well-being of others over their own. Altruism can be defined as a deliberate act of an individual to benefit another without any anticipation of reciprocation, as stated by Oh & Yoon (2014) [21]. When an individual is driven to act based on empathy, comprehension, and a wish to promote the well-being of others, the underlying motivation is solely rooted in altruism. According to Batson (2010) [20], if an individual perceives the ultimate objective of benefiting others as a means of enhancing their own well-being or self-interest, then such an action is driven solely by egoism. Numerous academic studies have provided evidence in favor of the concept of egoism, indicating that an individual's altruistic conduct is not solely driven by empathy and selflessness. Rather, it is influenced by a range of contextual factors that make the behavior more intricate and multifaceted. The study conducted by Cialdini et al. (1997) [22] revealed that the level of an individual's self-esteem and self-assertion has a significant impact on their altruistic behavior. Schwartz (1977) [23] posited that individuals engage in altruistic behavior solely when they perceive it as a moral obligation to comply with societal norms. The author of this study solely examines and references altruism in its most basic form, which is driven by a selfless concern, without any influence from egoism [24]. Altruism can be defined as a selfless act in which an individual willingly relinquishes their own rights and interests to promote the pleasure and happiness of others, without any expectation of recognition or reward. Moreover, an individual who exhibits ethical conduct based on empathy for the environment and animal welfare can also be regarded as displaying altruistic behavior.

2-1-4- Environmental Knowledge

Environmental knowledge is commonly referenced in academic literature pertaining to green or sustainable consumer behavior. As per Arcury's (1990) [24] findings, the concept of environmental knowledge pertains to the extent to which an individual can comprehend and assimilate information concerning environmental issues or aspects. Environmental knowledge can be defined as a broad range of information encompassing symbols, concepts, and factual data that pertain to the natural environment and its associated ecosystems [25]. The acquisition of this knowledge is frequently derived from personal observations and evaluations of the interactions with the surroundings. According to Oguz et al. (2010) [26], there is a positive correlation between the level of concern and awareness of environmental issues and the prevalence of environmentally friendly consumption behavior. The present study aims to elucidate that environmental knowledge pertains to a broad range of information and facts that have a direct impact on the habitats of flora and fauna and that individuals can comprehend and assimilate.

2-1-5- Social Media

Social media encompasses a diverse array of Internet applications that are founded on the principles and technology of Web 2.0. These platforms facilitate the production and sharing of content that is generated by users themselves [27]. According to Mangold & Faulds (2009) [28], social media refers to a range of online platforms that facilitate word-of-mouth communication, including information-sharing sites, blogs, forums, and social networks. These platforms enable consumers to generate, exchange, receive, and deliberate on various forms of content through the Internet. Furthermore, this platform encompasses various dimensions, such as social influence, social interaction, social affiliation, and social identity, as noted by Kudeshia & Kumar (2017) [29]. The present study aims to highlight social media as a social platform

that facilitates the transmission of information among individuals through social connections, leading to the formation of a community for discussion and sharing.

2-1-6- Subjective norm

According to the study conducted by Park & Lessig (1997) [12], the majority of consumers can be influenced by a reference group in order to carry out a behavioral intention or subjective norm. According to Ajzen (1991) [19], a subjective norm refers to an individual's personal perception of the need to conform to societal norms. This perception is influenced by the beliefs and encouragement of individuals in the individual's social circle, who may either endorse or discourage the behavior in question. According to Taylor & Told (1995) [30], the subjective norm, which is based on social norms, exerts pressure on individuals through their social circles, including friends, family, and colleagues, to conform to a particular behavioral intention. The present study aims to elucidate the concept of subjective norm as a construct that encompasses the external social pressures that impact an individual's perception of engaging in a specific behavior. There exists a positive correlation between the level of pressure and the degree of intention to engage in a particular behavior.

2-1-7- Relationship between Purchase Intention and Purchase Decision

Purchase intention refers to the inclination of a consumer to acquire a product or service in the near future, according to Wu et al. (2011) [31]. In particular, the concept of purchase intention refers to an individual's personal assessment of the likelihood of acquiring a particular product or service, which ultimately influences their decision-making process regarding the purchase [32]. According to Ajzen (1991) [19], there exists a positive correlation between purchase intention and the subjective likelihood of engaging in the act of purchasing.

According to the Theory of Planned Behavior, an individual's behavioral outcome is a manifestation of their behavioral intention [19]. Despite the challenges in practical confirmation, various studies have revealed that there exists a gap between an individual's intention and their actual behavior. The decision to purchase a product or service is influenced not only by personal factors but also by other contributing factors [33]. The influence of ethical purchase intention on realistic purchasing behavior is subject to variability. According to Cowe and Williams' (2000) research [13], a mere 3% of the 30% of consumers who expressed interest in purchasing ethical and cruelty-free products that are environmentally and animal-friendly actually followed through with their intention. This suggests that ethical standards will be lower than those observed in the survey-based findings [14].

2-2- Theory

The theoretical approach in this research builds upon established consumer behavior models, particularly the Theory of Planned Behavior (TPB) and the Ethical Consumer Decision-Making Model (ECDM). These frameworks provide a foundation for understanding the factors that influence consumer intentions and actions regarding cruelty-free cosmetics.

Theory of Planned Behavior (TPB): Ajzen (1991) [19] developed the TPB, which posits that three components guide behavior: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude reflects the individual's positive or negative evaluation of purchasing cruelty-free cosmetics. In this context, consumers who are aware of animal welfare and environmental concerns tend to have a favorable attitude toward cruelty-free products, which enhances their likelihood of engaging in such purchases. Subjective norms reflect the perceived social pressure to perform or not perform a certain behavior. In the context of cruelty-free cosmetics, subjective norms may stem from social media influencers, friends, family, or broader societal trends that endorse ethical consumption. Perceived behavioral control encompasses the consumer's belief in their capability to make an ethical purchase despite potential barriers such as product availability or cost. For instance, consumers may want to buy cruelty-free products but may feel restricted by higher prices or limited accessibility. Thus, perceived control can either facilitate or inhibit the conversion of intention into actual purchasing behavior [34, 35].

Ethical Consumer Decision-Making Model (ECDM): The ECDM provides a complementary lens for examining the internal ethical motivations that drive consumer decisions [36]. This model integrates ethical values, such as altruism and environmental concern, as intrinsic motivators in the decision-making process. According to ECDM, ethical purchase decisions stem not only from social pressures but also from personal values. Research indicates that consumers with high environmental awareness and strong altruistic values are more likely to opt for cruelty-free products.

Integrating TPB and ECDM in the Present Study: By integrating TPB and ECDM, this study seeks to address the intention-behavior gap that often exists in ethical consumption. While TPB explains how attitudes, social influences, and perceived control affect purchase intentions, ECDM provides insight into why consumers feel morally compelled to make ethical choices. This combined approach is especially relevant for exploring cruelty-free cosmetics in Vietnam, where ethical consumerism is on the rise but where significant barriers—like product accessibility and consumer knowledge gaps—may prevent ethical intentions from translating into action.

2-3- Hypothesis

According to Ajzen (1991) [19], attitude toward behavior refers to the extent of a positive or negative assessment of that particular behavior. There exists a positive correlation between an individual's inclination towards cruelty-free cosmetics and their corresponding purchasing behavior, whereby a stronger inclination towards cruelty-free cosmetics is indicative of a stronger intention to purchase such products, and vice versa. Numerous studies have indicated that there exists a positive correlation between attitude and the intention to purchase green cosmetics [7, 30, 33, 37], as well as cruelty-free cosmetics [6, 10, 38, 39], in agreement with the aforementioned viewpoint. Positive consumer attitudes, particularly when aligned with environmental and ethical values, strongly influence the purchase intentions of vegan cosmetics [34]. Similarly, Nguyen-Viet & Nguyen (2024) [40] highlighted that animal welfare concerns significantly shape consumer attitudes, which subsequently drive intentions to purchase green beauty products, despite skepticism toward green advertising. Finally, Nguyen et al. (2024) [35] proved that attitude positively affects the purchase intention of Vietnamese female consumers.

From there, the study suggests the following:

H1: Attitude has a positive relationship (+) with the intention to purchase cruelty-free cosmetics.

According to Webb et al. (2000) [41], in addition to actions such as volunteering and charitable donations, consumer engagement in communal and societal responsibility is also regarded as an act of altruism. This is because consumers take into account their own happiness and well-being, rather than causing harm to third parties, including the environment and animals. Dasunika and Gunathilake (2021) [9] found that there is a positive correlation between levels of altruism and the inclination to purchase ethical products. Various research studies have indicated that there exists a positive correlation between altruism and the intention to purchase cruelty-free cosmetics [6, 9].

The study posits the subsequent hypothesis:

H2: Altruism has a positive relationship (+) with the intention to purchase cruelty-free cosmetics.

Most environmental crises and animal extinctions are due to illegal exploitation and cruel animal testing [42]. Individuals with limited environmental knowledge or inconsistent, inaccurate knowledge may make poor environmental decisions [43]. According to Kaufmann et al. (2012) [44], individuals who exhibit a keen concern for environmental issues and animal welfare are inclined toward procuring eco-friendly and cruelty-free products as compared to those who exhibit less interest. According to Sebastiani et al. (2013) [45], there exists a positive correlation between the level of concern and the propensity of consumers to prioritize ethical and cruelty-free products. According to Laroche et al. (1996) [46] and Malik & Singhal (2017) [37], the most precise determinant of consumers' rising preference for eco-friendly and cruelty-free products is their awareness of environmental concerns. Several studies have indicated that there exists a positive correlation between environmental knowledge and the intention to purchase cruelty-free cosmetics. These studies include works by Mostafa (2006) [38], Silva et al. (2021) [6], Shimul et al. (2021) [7], and Dasunika & Gunathilake (2021) [9]. Moreover, Solaiman & Rana (2023) [47] indicated that there is a moderating effect of eco-knowledge (the special kind of environmental knowledge) in the relationship between perceived consumer effectiveness and green purchase decisions. Therefore, the study proposes the following hypothesis:

H3: Environmental knowledge has a positive relationship (+) with the intention to purchase cruelty-free cosmetics.

Recent times have demonstrated the capacity of social media to encourage sustainable lifestyles, behaviors, and consumption across various domains, including the cosmetics sector [48]. The study by Min et al. (2018) [49] indicates a significant increase in the younger generation's trend against animal testing. The percentage has risen from 31% in 2001 to 54% in 2013. Consumers' use of social media has facilitated the promotion of animal rights by animal protection organizations, leading to this shift in attitude. According to Zahid et al. (2017) [50], the utilization of social media as a catalyst has had a noteworthy impact on the stimulation and augmentation of consumer consciousness regarding ethical purchase inclination. Social media plays an important role in shaping consumer choices, including their intentions during decision-making [51]. Several studies have demonstrated a positive correlation between the intention to purchase cruelty-free cosmetics and the increase in social media usage [6, 9], which aligns with the previously mentioned perspective. The study posits the subsequent hypothesis:

H4: Social media has a positive relationship (+) with the intention to purchase cruelty-free cosmetics.

Francis & Hoefel (2018) [52] found that 63% of the surveyed consumers view recommendations from friends as a reliable and trustworthy source of information. According to Park and Lessig [12], the reference group has a significant influence on the behavioral intention of consumers, commonly referred to as the subjective norm. According to Ajzen (1991) [19], subjective norm refers to an individual's perception of the need to conform to social norms. If individuals in their social circle advocate for the use of cosmetics without animal testing, their purchasing intention is likely to increase. Numerous studies have demonstrated a positive correlation between the purchase intention for green cosmetics [33] and cruelty-free cosmetics [10, 11, 39] and the subjective norm. Subsequently, the study suggests the following hypothesis:

H5: Subjective norm has a positive relationship (+) with the intention to purchase cruelty-free cosmetics.

According to the Theory of Planned Behavior, an individual's behavioral manifestation is a function of their behavioral intentions (Ajzen, 1991) [19]. Numerous academic studies have indicated a positive correlation between purchase intention and the purchasing decision of conventional cosmetics [53], sustainable cosmetics [54], and green cosmetic products [55].

The study subsequently presents the last hypothesis:

H6: *Purchase intention has a positive relationship (+) with the decision to purchase cruelty-free cosmetics.*

2-4- Proposed Research Model

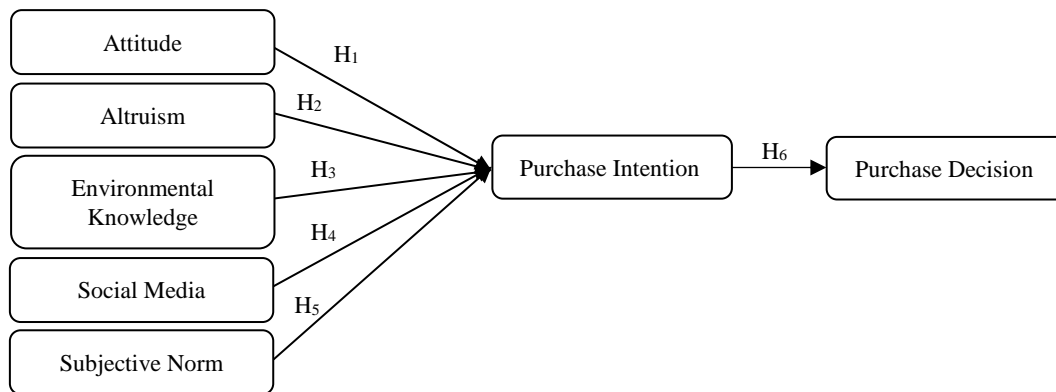The proposed research model is shown in Figure 1.

Figure 1. Research model proposed by the author

3- Research Methodology

The advancement of research is typically categorized into two distinct phases: preliminary and formal research. The initial stage of research is conducted through the utilization of qualitative and preliminary quantitative research methodologies. The qualitative research methodology involves the utilization of two theoretical models and five relevant scientific reports as references and sources of inspiration to construct the framework of a preliminary scale and formulate a questionnaire. The scale and questionnaire in development will undergo further refinement through the application of group discussion methodology involving 10 participants. This approach aims to ensure that survey respondents possess a clear understanding of the scale's contents and are not susceptible to confusion. The proposed variables for matching the research objectives and context are AT1, AT2, and AL1, as determined by the group discussion results. The preliminary survey questionnaire comprises 7 constructs and 30 observation variables, each corresponding to a distinct statement. The study employed preliminary quantitative research methods by means of an online survey utilizing Google Forms. A convenient, non-probability sampling technique was utilized to gather data, resulting in 52 valid questionnaires. The findings of the study indicate that the 7 constructs possess high reliability, as evidenced by the results of Cronbach's Alpha coefficient analysis and exploratory factor analysis. Moreover, it was observed that 29 out of the 30 observation variables met the criteria proposed by Hair et al. (2010) [56] and were deemed appropriate for inclusion in the study.

The formal quantitative research method is utilized to conduct the main research phase. The present investigation conducted statistical analyses, including Cronbach's Alpha coefficient analysis and exploratory factor analysis (EFA) using SPSS 20, as well as confirmatory factor analysis (CFA) and Structural Equation Modeling (SEM) utilizing AMOS 20. The determination of the minimum sample size is based on two factors, as proposed by Hair et al. (1998) [57], namely, a minimum of 50 and the number of observed variables incorporated in the model analysis. Based on the survey table, a minimum sample size of n = 145 would be required for a dataset containing 29 observed variables with a ratio of k = 5/1. In order to mitigate the risk of unsatisfactory survey results stemming from the absence of participants who currently reside in Ho Chi Minh City, lack awareness, or exhibit no purchase decision with respect to cruelty-free cosmetics, the study has opted to employ a non-probability sampling technique to investigate a minimum sample size of 180 respondents or greater.

The development of the formal quantitative research scale was informed by prior research and refined through analysis of both qualitative and preliminary quantitative data. The quantitative research scale, as officially recognized, comprises of five distinct independent scales, one intermediate scale, and one dependent scale. The scale is composed of 29 observed variables, each corresponding to a unique statement. The measuring scale and sources are presented in Table 1.
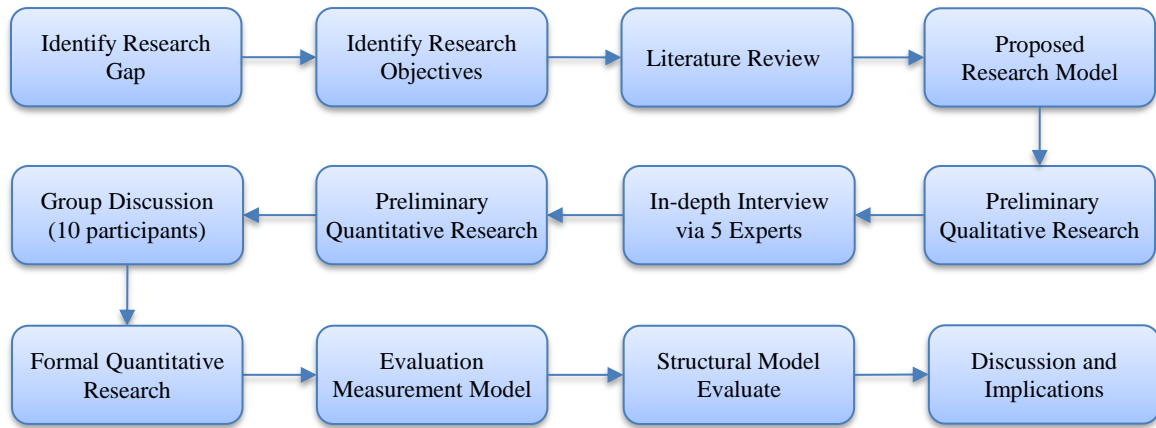
Figure 2. The research process

Table 1. The scale and reference sources

	Scale	Source
	Attitude (AT)	
AT1	I appreciate not testing on animals from cruelty-free cosmetics.	Suggested from the results of qualitative research
AT2	I appreciate the protection of the environment and animals from cruelty-free cosmetics.	
AT3	I feel that buying cruelty-free cosmetics is worth it.	
AT4	I feel that buying cruelty-free cosmetics is favourable.	
AT5	I feel that buying cruelty-free cosmetics is important.	[6]
AT6	I feel that buying cruelty-free cosmetics is desirable.	
AT7	I feel that buying cruelty-free cosmetics is pleasant.	
	Altruism (AL)	
AL1	I put animal welfare and environmental responsibility above personal interests.	Suggested from the results of qualitative research
AL2	I buy or will buy cruelty-free cosmetics because it helps reduce the number of animals that are tested each year.	
AL3	I buy or will buy cruelty-free cosmetics for the welfare of animals.	
AL4	I buy or will buy cruelty-free cosmetics for the environment.	[6]
AL5	I buy or will buy cruelty-free cosmetics because it positively affects the problems of society.	
	Environmental knowledge (EK)	
EK1	I am aware of cruelty-free cosmetics that will not harm the environment and animals.	
EK2	I know how to choose cosmetics that are not harmful to the environment and animals.	
	Environmental knowledge (EK)	[6]
EK3	I am aware of the negative effects of animal testing on the environment.	
EK4	I am aware that cruelty-free cosmetic brands have not tested their products on animals.	
	Social media (SM)	
SM1	Social media raised my awareness about animal testing.	
SM2	Social media suggested I buy cruelty-free cosmetics for the environment and animals.	[6]
SM3	Social media recommended cruelty-free cosmetic content to me.	
SM4	My interactions with social media influenced my intention to buy cruelty-free cosmetics.	
	Subjective norm (SN)	
SN1	People around me (friends, family, colleagues, etc.) think that I should buy cruelty-free cosmetics.	
SN2	The people who are important and influential in my decisions think that I should buy cruelty-free cosmetics.	[7, 10]
SN3	The people that I admire, and idols think that I should buy cruelty-free cosmetics.	
	Purchase intention (PI)	
PI1	My probability of buying cruelty-free cosmetics in the near future is very high.	
PI2	If I plan to buy a similar product, I will buy cruelty-free cosmetics.	[7, 10]
PI3	I will consider switching from normal cosmetics to cruelty-free cosmetics because of animals and the environment.	
	Purchase decision (PD)	
PB1	I often buy cosmetics that are cruelty-free to animals and the environment.	
PB2	When given a choice between two similar cosmetics, I always choose cruelty-free cosmetics because of animals and the environment.	[58, 59]
PB3	I switched from regular cosmetics to cruelty-free cosmetics because of animals and the environment.	

4- Results

The formal survey collected 400 questionnaires, including 199 satisfactory and 201 unsatisfactory ones. Out of 201 unsatisfactory questionnaires, there are one in Case 1 (not living in Ho Chi Minh City), 27 in Case 2 (knowledge about cruelty-free cosmetics), and 173 in Case 3 (no intention to purchase yet). We present the research results based on 199 valid questionnaires.

4-1- Statistical Results

Based on the statistical results in Table 2, it shows that most of the survey respondents have the following characteristics: female (137 people, accounting for 74.7%), from 18 to 30 years old (159 people, accounting for 80.9%), identified mainly through social networks (98 people, accounting for 49.2%).

Table 2. Statistic results

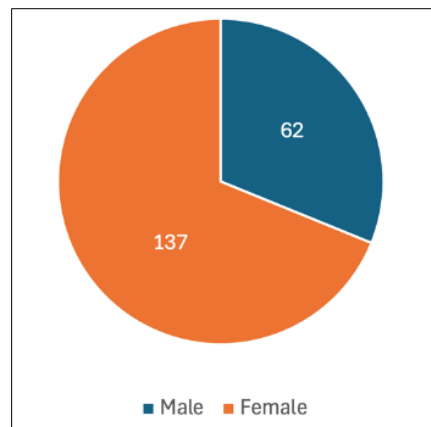| Sample characteristics					
Gender	**Quantity**	**%**	**The information channels**	**Quantity**	**%**
Male	62	31.2	Social network	98	49.2
Female	137	68.8	Blogs, forums	14	7.0
Age	**Quantity**	**%**	Newspapers	10	5.0
Under 18	32	16.1	Friends, family, colleagues	53	26.6
From 18 to 30	159	79.9	Other	24	12.1
From 31 to 45	8	4.0			

Figure 3. Pie chart of male and female

Based on the descriptive statistics presented in Table 2, the survey results show that out of 199 respondents, 137 are female consumers, representing 68.8%, while 62 are male consumers, accounting for 31.2%. Overall, the gender distribution within the sample reveals a disparity of approximately 37.6%. This difference aligns with broader trends, as women are generally more inclined towards purchasing cosmetics and skincare products. However, it is also notable that male consumers are increasingly interested in these products.
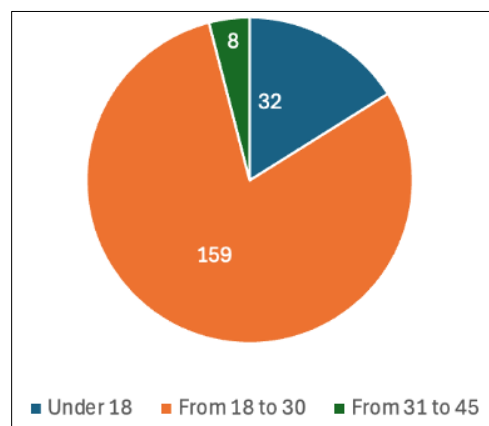

Figure 4. Pie chart of age

Based on the descriptive statistics presented in Table 2, among the 199 survey respondents, 32 consumers are under 18 years old, comprising 16.1% of the sample; 159 consumers are between 18 and 30 years old, accounting for 79.9%; and 8 consumers fall within the 31 to 45 age range, representing 4%, with no consumers over the age of 46. This distribution reveals a notable age disparity, with the majority of respondents (18 to 30 years) vastly outnumbering the younger (under 18) and middle-aged (31 to 45) groups.

This pattern reflects broader trends in consumer behavior, particularly among the 18 to 30 demographic, which includes Millennials and Gen Z. These young, dynamic consumers expect brands to adopt sustainable practices and demonstrate a commitment to strong environmental and animal protection [60, 61]. They tend to make purchasing decisions based on personal values and principles that align with environmental and social concerns [61]. They are more likely to purchase cruelty-free cosmetics compared to other age groups. In contrast, consumers under 18 show lower purchasing potential due to limited exposure and access, as many in this group are students with fewer opportunities for cosmetic engagement. Meanwhile, the 31 to 45 age group, often characterized by established preferences and prior experiences, tends to demonstrate lower intent and behavior toward switching from traditional cosmetics to cruelty-free alternatives due to concerns about potential product risks and the challenge of adjusting longstanding beauty routines.
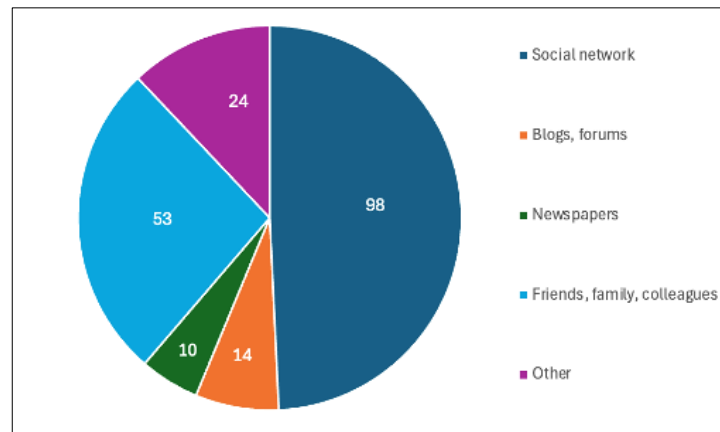

Figure 5. Pie chart of information channels

According to the descriptive statistics presented in Table 2, out of 199 survey participants, 98 consumers (49.2%) identify social media platforms—including Facebook, Instagram, and YouTube—as the most effective channels for raising awareness about cruelty-free cosmetics and issues related to animal testing. Recommendations from friends, family, and colleagues rank second at 26.6%, followed by other sources not included in the study at 12.1%, blogs and forums at 7%, and print media at 5%. Although there is variation in information channels, all 199 respondents show a certain level of awareness about cruelty-free cosmetics across these sources, affirming the relevance of their participation in the study.

4-2- Reliability Testing

Based on the reliability test results in Table 3, the scales have Cronbach's alpha coefficient greater than 0.6, 29 observed variables have a Corrected Item-Total Correlation coefficient greater than 0.3, and Cronbach's alpha if item deleted coefficient is lower than Cronbach's Alpha coefficient. This proves that 7 scales have high reliability and 29 observed variables have mutual correlation overall, as proposed by Hair et al. (2010).

Table 3. Reliability test results

Observed variable	Corrected Item – Total Correlation	Cronbach's Alpha if item deleted	Conclusion
Attitude: Cronbach's Alpha = 0.917			
AT1	0.762	0.902	Accepted
AT2	0.749	0.904	Accepted
AT3	0.741	0.904	Accepted
AT4	0.722	0.906	Accepted
AT5	0.737	0.905	Accepted
AT6	0.735	0.905	Accepted
AT7	0.760	0.902	Accepted

Altruism: Cronbach's Alpha = 0.854			
AL1	0.720	0.810	Accepted
AL2	0.676	0.822	Accepted
AL3	0.607	0.840	Accepted
AL4	0.670	0.823	Accepted
AL5	0.664	0.825	Accepted
Environmental knowledge: Cronbach's Alpha = 0.852			
EK1	0.692	0.812	Accepted
EK2	0.654	0.828	Accepted
EK3	0.686	0.815	Accepted
EK4	0.739	0.792	Accepted
Social media: Cronbach's Alpha = 0.844			
SM1	0.689	0.798	Accepted
SM2	0.655	0.813	Accepted
SM3	0.662	0.810	Accepted
SM4	0.714	0.788	Accepted
Subjective norm: Cronbach's Alpha = 0.765			
SN1	0.624	0.654	Accepted
SN2	0.571	0.713	Accepted
SN3	0.596	0.685	Accepted
Purchase intention: Cronbach's Alpha = 0.851			
PI1	0.706	0.806	Accepted
PI2	0.721	0.792	Accepted
PI3	0.736	0.777	Accepted
Purchase decision: Cronbach's Alpha = 0.879			
PB1	0.791	0.806	Accepted
PB2	0.759	0.835	Accepted
PB3	0.749	0.844	Accepted

4-3- Confirmatory Factor Analysis

The confirmatory factor analysis results show that CMIN/df = 1.277 less than 3, IFI = 0.969, CFI = 0.969 greater than 0.9, and RMSEA = 0.037 less than 0.08 are suitable, GFI = 0.869 between 0.8 and 0.9 is also accepted as suggested by Baumgartner & Homburg (1996) [62], this model is goodness of fit. Besides, the standardized estimate weights are higher than 0.5 and the statistical significance Sig is less than 0.05, which means the scale has a convergent value [57].

Table 4. The index of CFA

Index	Criteria	Result
CMIN/df	< 3	1.295
GFI	0.8 < X < 0.9	0.868
IFI	> 0.9	0.966
TLI	> 0.9	0.961
CFI	> 0.9	0.966
RMSEA	< 0.08	0.039

Based on the composite reliability and variance extracted results in Table 5, which show that the correlation coefficient between research concepts is different from 1, and the statistical significance is less than 0.05, the scale has a discriminant value. Besides, the reliability of the factors is higher than 0.5, the total variance extracted AVE is greater than 0.5, and the composite reliability CR is greater than 0.7, which means the scales have high reliability as proposed by Fornell & Larcker [63].

Table 5. Composite reliability and variance extracted results- Source: Analyze data collected from AMOS 20

	CR	AVE	AT	AL	EK	SM	SN	PI	PD
AT	0.885	0.607	0.779						
AL	0.864	0.559	0.450	0.736					
EK	0.858	0.602	0.420	0.513	0.770				
SM	0.852	0.591	0.411	0.330	0.417	0.760			
SN	0.810	0.588	0.557	0.421	0.419	0.383	0.767		
PI	0.845	0.576	0.710	0.719	0.759	0.545	0.616	0.803	
PD	0.876	0.702	0.247	0.163	0.227	0.092	0.204	0.307	0.842

4-4- Structural Equation Modeling

Based on the structural equation modeling results, which show that CMIN/df = 1.267 less than 3, IFI = 0.970, CFI = 0.970 greater than 0.9, and RMSEA = 0.037 less than 0.08 are suitable, the model is fit for market data. Besides, based on the structural equation modeling results in table 6, the statistical significance with P value of the factors is less than 0.05, which means the hypotheses from H1 to H6 are suitable and accepted with a confidence level of 95%. Based on the standardized estimate, the factors that have a positive relationship with the purchase decision of cruelty-free cosmetics mediated by the purchase intention, in descending order, are environmental knowledge, altruism, attitude, subjective norm, and social media.

Table 6. Structural equation modeling results

Hypotheses		St. Est.	Unst. Est.	S.E.	C.R.	P	Hypothesis
H_1	PI ← AT	0.259	0.269	0.070	3.819	***	Supported
H_2	PI ← AL	0.295	0.303	0.068	4.472	***	Supported
H_3	PI ← EK	0.372	0.397	0.075	5.313	***	Supported
H_4	PI ← SM	0.127	0.134	0.061	2.190	0.029	Supported
H_5	PI ← SN	0.143	0.159	0.074	2.140	0.032	Supported
H_6	PD ← PI	0.299	0.228	0.061	3.766	***	Supported

However, from another aspect, based on the standardized estimate, the author found a difference in the level of influence between the group of internal factors and the group of external factors, specifically that the group of internal factors, including attitude, altruism, and environmental knowledge, affect the purchase decision of cruelty-free cosmetics more than the group of external factors, including social media and subjective norm. Does this imply that it is internal perceptions and desires such as positive attitude, altruism, and environmental knowledge that lead one to hope that the use of cruelty-free cosmetics, which will inhibit painful trials and avoid negative environmental impacts, is a prerequisite factor that plays an important role in influencing the purchase intention of cruelty-free cosmetics, and that pressures from the external environment such as social media and subjective norms from people around such as friends, family, and colleagues only have a small and trivial influence in this case? So is this research result a suitable proof according to the ECDM model, consumers have prioritized personal values and desires when making ethical and cruelty-free purchasing decisions, rather than external pressure?

The study assumes that during the participation, the group of external factors directly influenced the group of internal factors instead of the purchase intention as originally hypothesized, making consumers gradually aware and forming a more positive attitude, altruism, and knowledge of the environment and animals, and from there, contributing to improving the influence of the group of internal factors on the intention to purchase cruelty-free cosmetics instead of the group of external factors. Or, in other words, social media and subjective norms not only directly affect the original hypothesis but also arise and directly affect the internal factors and indirectly affect the purchase intention of cruelty-free cosmetics again, leading to a level of direct influence that is a significant difference. This assumption is also completely consistent with the research results of Pop et al. (2020) [64] that social media positively affects the attitude and purchase intention of green cosmetics and Magano et al. (2022) [11] that subjective norms positively affect the attitude and purchase intention of cruelty-free cosmetics. It also complements Schwartz's (1977) [23] statement that a person only engages in altruistic behavior when he or she feels that it is a moral obligation to perform to conform to social norms. In general, with the assumptions that can be made, the difference in the level of influence between the group of internal and external factors is also a limited part of the research interest.

4-5- Discussion

First, hypothesis H1 is appropriate and accepted, showing that attitude has a positive relationship (+) to purchasing cruelty-free cosmetics, similar to the previous research results of previous studies [6, 10, 38, 39]. Second, hypotheses H2, H3, and H4 are appropriate and accepted, showing that altruism, environmental knowledge, and social media have a positive relationship (+) to purchasing cruelty-free cosmetics, similar to the research results of [6, 9]. Third, hypothesis H5 is appropriate and accepted, showing that the subjective norm has a positive relationship (+) with purchasing cruelty-free cosmetics, similar to the research results of [10, 11, 39]. This study complements the Silva et al. (2021) [6] study, which has not yet explored the factor of subjective norm. Finally, this study supports and accepts hypothesis H6, which aligns with previous research on the intention-behavior gap for conventional cosmetics [53] and sustainable cosmetics [54].

5- Conclusions, Limitations, and Suggestions for Future Research

5-1- Conclusion

By integrating TPB and ECDM to address the gap between intention and purchase behavior in ethical consumption, the research results reveal that the purchase decision of cruelty-free cosmetics is influenced by both internal ethical motivations such as attitude, altruism, and environmental knowledge, as well as external factors such as social media and subjective norms, all of which are mediated by purchase intention. Personal values, such as the hope that using cruelty-free cosmetics will prevent painful experiments and negative environmental impacts, have a greater influence on consumers' purchase decisions than external pressures like social media, support, and expectations from others around them.

The research, in terms of scientific significance, aims to serve as a reference for research in the field of cruelty-free or animal testing-free, particularly in the context of subsequent purchase behavior, by synthesizing theories, models, and research findings from previous works. In terms of practical significance, the research makes a valuable contribution by providing relevant information and overview data that domestic cosmetic brands can use to develop business strategies and promote purchasing behavior. This is achieved through education that delves into personal values and external environmental pressures on cruelty-free cosmetics. The growth of the domestic and international cruelty-free cosmetics market is a result of this contribution.

5-2- Managerial Implications

Environmental knowledge is the most influential factor, with EK3 and EK4 having the lowest mean values. These indicate that consumers possess specific knowledge and awareness about the cosmetic industry's testing practices, and they choose cosmetics that are not harmful to the environment or animals. However, this knowledge is still not enough to convince them to make a purchase decision. What brands should do is provide information and education to enhance consumers' knowledge and understanding, preventing them from making incorrect environmental decisions due to limited knowledge or inaccurate and inappropriate environmental information. Specifically: First, brands should leverage their personal strengths by not testing on animals and demonstrating transparency in the cosmetic production process through certifications and cruelty-free commitments on packaging and labeling. This will not only attract and inform consumers, but also help them understand the product's origin, production process, and ingredients, enabling them to make informed decisions about their purchase intentions and behaviors. Second, brands should expand their orientation plans and educational outreach projects in schools and communities to provide detailed information about the testing process. They should also highlight the unethical issues of the activity towards the environment and the rights of the animals involved. This will help consumers build a solid foundation of knowledge and concern for the environment and animals from a young age, motivating them to become stronger in making ethical consumption choices towards the environment and animals.

Altruism is the second-most influential factor, with AL1 and AL5 having the lowest average value. Consumers have altruistic awareness and put personal interests after animal welfare and environmental quality, but this awareness is not enough to promote behavior. Brands should share and encourage empathy for the right to live a worthy life for animals and a better environment, specifically: First, brands should focus on conveying articles and stories related to animal welfare and the grave deterioration of animals under the impact of testing taken from Cruelty Free International and PETA through media campaigns and propaganda films to share and encourage consumers' altruism in stopping the use of cruel cosmetics. Second, brands should organize practical activities and fundraising programs in conjunction with animal protection organizations such as the Animals Asia Foundation in the form of volunteers to create opportunities for consumers to directly access and observe the condition of animals that have been weakened after rescue, helping them to be more open, stimulating more empathy and understanding towards animals, and enhancing altruistic behavior in cruelty-free cosmetics consumption.

Attitude is the third most influential factor, with AT3, AT4, and AT5 having the lowest average value. This shows that consumers have certain attitudes toward cruelty-free cosmetics; they feel that buying them is worthwhile, favorable, and essential. Brands should promote ethical values and provide consumers with more opportunities to participate and support cruelty-free behavior, specifically encouraging positive attitudes and assertive behaviors. First, brands should focus on developing community projects in conjunction with animal rights and welfare organizations to promote activities and valuable information about ethics and the profound benefits of using cruelty-free cosmetics for the environment and animals. Stimulate consumers to feel that cruelty-free cosmetics are essential and worthwhile. Second, allowing consumers to participate in and support animal charities and organizations creates additional social benefits and contributes to increasing positive attitudes and purchasing behavior toward the product.

The fourth most influential factor is the subjective norm, with SN1 and SN3 having the lowest average value. These findings demonstrate that influential factors, such as idols, individuals consumers admire, and those in their immediate vicinity, are insufficient to persuade consumers that using cruelty-free cosmetics is appropriate in this context. In order to inspire and pressure consumers, brands should establish a supportive and positive environment. Specifically, they should collaborate with organizations and strategic partners to establish a community that encourages and supports the use of cruelty-free cosmetics, as it is a suitable practice. Second, brands should expand and develop the role of brand ambassadors to engage with communities and inspire consumers to believe that using cruelty-free cosmetics is not a cruel practice and that the people they admire are trying to change that, and they should do the same. From there, it becomes more advantageous to contribute to the promotion of cruelty-free cosmetic purchasing behavior.

Social media is the fifth most influential factor, with SM1 and SM2 having the lowest mean. These indicate that despite the media's gradual popularization of content and its recommendation of cruelty-free cosmetics and cruel animal testing activities, consumers are still not persuaded to take action. Brands should develop a social campaign that incorporates rich content to enhance social marketing and encourage consumer interaction and participation in the decision to purchase cruelty-free cosmetics. Specifically, they should organize regular group discussions using specific hashtags to encourage consumers to share their experiences and messages about using cruelty-free cosmetics, rejecting testing, and advocating for the right to live a life worthy of animals on various social networking platforms. This approach would allow brands to better understand consumers' desires and understanding of the discussed issue, thereby building a database to more effectively reach the customer group. Second, brands should use marketing tools to deliver digital campaigns to consumers more effectively, creating a strong ripple effect on cruelty-free cosmetics purchasing behavior.

5-3- Limitations, and Suggestions for Future Research

Based on research results, it appears that the factors of attitude, altruism, environmental knowledge, social media, and subjective norm all have a positive relationship with the purchase decision of cruelty-free cosmetics, and hypotheses H1–H6 are suitable and accepted in this case. Besides, the study still has some limitations: First, animal testing is a covert operation, and data on animals damaged per year by cosmetic manufacturing can be hard to find, leading to limited information and citation data and not providing the desired overview. Second, the sample size of 199 observations from consumers under 45 years old is very low, leading to the proposal being still temporary and not close to reality. Third, the research results show a difference in the level of influence between the group of internal and external factors as discussed, whether social media and subjective norms affect the group of internal factors and indirectly on purchase intention as the study hypothesized, or whether this is the real influence of them on the purchase intention of cruelty-free cosmetics. Finally, altruism is a difficult factor to measure. This study solely examined altruism in its purest form, devoid of any selfishness. During the survey process, consumers are inevitably influenced by their personal interests and image, particularly when it comes to sensitive issues and animal welfare. They tend to show the best version of themselves and avoid engaging in in-depth discussions about ethics, honesty, and animal treatment. This makes them rate totally agree on the altruism scale instead of totally disagree, leading to the research results prioritizing internal values influencing purchasing behavior more than external pressure.

With the above limitations, the author has suggested the following directions: First, the research should expand the search for domestic and foreign animal rights and welfare organizations with a larger number to collect data and statistics that are most closely related to the actual situation. Second, the study should expand the scope and research subjects to those 46 years old and older in different regions to improve representativeness and suggest governance implications that are more relevant to higher practice. Third, to explain the difference between the group of internal and external factors, the author proposed two studies: The first study examined how social media and subjective norms affect attitudes, altruism, environmental knowledge, and purchase intentions for cruelty-free cosmetics, based on the results of a study by Pop et al. (2020) [64] and Magano et al. (2022) [22]. The second study examines how altruism, environmental knowledge, social media, and subjective norms affect attitudes and purchase intentions toward cruelty-free cosmetics, based on the research results of Shimul et al. (2021) [7], Pop et al. (2020) [64], and Magano et al. (2022) [22]. Finally, to measure the altruism factor further, the following study will describe the concept of altruism more clearly. Simultaneously, the study will incorporate the egoism factor, or egoistic motivation, which influences purchase intention, based on the proposed results of Alam et al. (2023) [65].

6- Declarations

6-1- Author Contributions

Conceptualization, H.H.N; methodology, H.H.N.; software, H.H.N.; validation, H.H.N.; formal analysis, H.H.N.; investigation, H.H.N.; resources, H.H.N.; data curation, H.H.N.; writing—original draft preparation, H.H.N.; writing—review and editing, P.V.L-H.; visualization, H.H.N.; supervision, P.V.L-H.; project administration, P.V.L-H.; funding acquisition, P.V.L-H. All authors have read and agreed to the published version of the manuscript.

6-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

6-3- Funding

This work has been sponsored and funded by Industrial University of Ho Chi Minh City.

6-4- Institutional Review Board Statement

Not Applicable.

6-5- Informed Consent Statement

Informed consent was obtained from all subjects involved in the study

6-6- Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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Appendix I: Survey Questionnaire

We are committed to maintaining the confidentiality of all information provided in this survey. All responses will be used solely for research purposes and will remain anonymous. Your participation and input are invaluable to the success of this study, and we sincerely appreciate your cooperation.

Dear respondent,

I am conducting a research study on "The relationship between attitude, altruism, environmental knowledge, social media, and the behavior of purchasing cruelty-free cosmetics: The mediating role of purchase intention."[*] I would greatly appreciate your contributions to this research, as your feedback will provide valuable insights and serve as a solid foundation to explore, evaluate, and suggest management implications that will assist domestic cruelty-free cosmetic brands in formulating effective strategies to promote consumer purchasing behaviors through increased purchase intention.

Thank you very much!

A. Screening questions

1. Your current region of residence is:

   □ Ho Chi Minh City (Continue)

   □ Hanoi (Stop)

   □ Other (Stop)

2. Are you aware of cruelty-free cosmetics?

   □ Yes (Continue)

   □ No (Stop)

3. What is your current attitude toward cruelty-free cosmetics?

   □ Aware but no intention to buy (Stop)

   □ Aware with intention to buy (Stop)

   □ Aware and have purchased (Continue)

B. Respondent Information

4. Your age is:

   □ Under 18

   □ 18 – 30

   □ 31 – 45

   □ Above 46

5. Your gender is:

   □ Male

   □ Female

6. Which information channel most effectively introduced you to cruelty-free cosmetics?

   □ Social media (Facebook, Instagram, LinkedIn, YouTube, etc.)

   □ Blogs, forums

   □ News

   □ Friends, family, colleagues

   □ Other

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[*] The authors began their research with the title "The relationship between attitude, altruism, environmental knowledge, social media, and the behavior of purchasing cruelty-free cosmetics: The mediating role of purchase intention". After receiving feedback from reviewers, the authors revised the research title to "Key drivers of cruelty-free cosmetics: the mediating role of purchase intention".

C. General assessment

Please indicate your level of agreement with the following statements by marking (X) in the boxes from 1 to 5 below, where 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, and 5: Strongly Agree.

Attitude (AT)	1	2	3	4	5
AT1: I appreciate not testing on animals from cruelty-free cosmetics.	□	□	□	□	□
AT2: I appreciate the protection of the environment and animals from cruelty-free cosmetics.	□	□	□	□	□
AT3: I feel that buying cruelty-free cosmetics is worth it.	□	□	□	□	□
AT4: I feel that buying cruelty-free cosmetics is favourable.	□	□	□	□	□
AT5: I feel that buying cruelty-free cosmetics is important.	□	□	□	□	□
AT6: I feel that buying cruelty-free cosmetics is desirable.	□	□	□	□	□
AT7: I feel that buying cruelty-free cosmetics is desirable.	□	□	□	□	□

Altruism (AL)	1	2	3	4	5
AL1: I put animal welfare and environmental responsibility above personal interests.	□	□	□	□	□
AL2: I buy or will buy cruelty-free cosmetics because it helps reduce the number of animals that are tested each year.	□	□	□	□	□
AL3: I buy or will buy cruelty-free cosmetics for the welfare of animals.	□	□	□	□	□
AL4: I buy or will buy cruelty-free cosmetics for the environment.	□	□	□	□	□
AL5: I buy or will buy cruelty-free cosmetics because it positively affects the problems of society.	□	□	□	□	□

Environmental Knowledge (EK)	1	2	3	4	5
EK1: I am aware of cruelty-free cosmetics that will not harm the environment and animals.	□	□	□	□	□
EK2: I know how to choose cosmetics that are not harmful to the environment and animals.	□	□	□	□	□
EK3: I am aware of the negative effects of animal testing on the environment.	□	□	□	□	□
EK4: I am aware that cruelty-free cosmetic brands have not tested their products on animals.	□	□	□	□	□

Social Media (SM)	1	2	3	4	5
SM1: Social media raised my awareness about animal testing.	□	□	□	□	□
SM2: Social media suggested I buy cruelty-free cosmetics for the environment and animals.	□	□	□	□	□
SM3: Social media recommended cruelty-free cosmetic content to me.	□	□	□	□	□
SM4: My interactions with social media influenced my intention to buy cruelty-free cosmetics.	□	□	□	□	□

Subjective Norms (SN)	1	2	3	4	5
SN1: People around me (friends, family, colleagues, etc.) think that I should buy cruelty-free cosmetics.	□	□	□	□	□
SN2: The people who are important and influential in my decisions think that I should buy cruelty-free cosmetics.	□	□	□	□	□
SN3: The people that I admire, and idols think that I should buy cruelty-free cosmetics.	□	□	□	□	□

Purchase Intention (PI)	1	2	3	4	5
PI1: My probability of buying cruelty-free cosmetics in the near future is very high.	□	□	□	□	□
PI2: If I plan to buy a similar product, I will buy cruelty-free cosmetics.	□	□	□	□	□
PI3: I will consider switching from normal cosmetics to cruelty-free cosmetics because of animals and the environment.	□	□	□	□	□

Purchase Behavior (PB)	1	2	3	4	5
PB1: I often buy cosmetics that are cruelty-free to animals and the environment.	□	□	□	□	□
PB2: When given a choice between two similar cosmetics, I always choose cruelty-free cosmetics because of animals and the environment.	□	□	□	□	□
PB3: I switched from regular cosmetics to cruelty-free cosmetics because of animals and the environment.	□	□	□	□	□

D. Survey Completion

Thank you once again for participating in this survey!