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Millennials' Purchase Intention of Cruelty-free Cosmetics

The mediating and moderating effects of Attitude, Altruism and Knowledge

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Dissertation written under the supervision of Professor Marta Bicho

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ABSTRACT

Millennial's Purchase Intention of Cruelty-free Cosmetics.

The mediating and moderating effects of Attitude, Altruism and Knowledge.

By Mariana Gris

Cruelty-free cosmetics tend to evoke highly favourable attitudes and behaviours. Indeed, the millennial generation, recognised as the largest and most influential consumer segment, has driven a shift towards more conscientious consumption, notably in the demand for ethical cosmetics. Consequently, to enhance consumer appeal, companies are increasingly exploring certification label attributes that symbolise their abstaining commitment from animal testing.

This research strives to understand millennials' intention to purchase cruelty-free cosmetics, emphasising the mediating effect of attitudes towards cruelty-free cosmetics, and the moderating effects of both consumers altruism and knowledge of such cruelty-free labels, utilising a moisturiser cream as an example.

The study employed an exploratory sequential mixed method, combining a focus group for stimulus development with an online questionnaire featuring three stimuli randomly assigned to each respondent. Key findings indicate that the presence of a cruelty-free logo significantly influences consumers' purchase intention, with certified cruelty-free logos yielding more positive intentions to purchase compared to uncertified logos. However, the results suggests that neither attitude serves as a mediator nor knowledge and altruism act as moderators in the model.

In conclusion, this study provides cosmetic brands' managers and marketers with valuable insights on enhancing consumers purchase intention, by incorporating cruelty-free labels, particularly those certified by independent entities.

Keywords: Cruelty-free cosmetics, cruelty-free logos, certified cruelty-free logos, self-claimed cruelty-free logos, purchase intention, attitudes towards cruelty-free cosmetics, millennials altruism, knowledge of cruelty-free labels

RESUMO

Intenção de Compra dos Millennials por Cosméticos Cruelty-Free.
Os Efeitos Mediadores e Moderadores de Atitude, Altruísmo e Conhecimento.

Por Mariana Gris

Produtos cosméticos cruelty-free têm a tendência de evocar atitudes e comportamentos altamente favoráveis. De facto, a geração millennial, reconhecida como o maior e mais influente segmento de consumidores, tem impulsionado uma mudança em direção a práticas de consumo mais conscientes, especialmente na demanda por produtos cosméticos éticos. Como resultado, para aumentar o apelo ao consumidor, as empresas estão cada vez mais explorando atributos de rótulos de certificação que simbolizam o seu compromisso com a abstinência de testes em animais.

Esta pesquisa visa compreender a intenção dos millennials em comprar cosméticos cruelty-free, enfatizando o efeito mediador das atitudes em relação a esses cosméticos e os efeitos moderadores tanto do altruísmo quanto do conhecimento dos rótulos cruelty-free, utilizando um creme hidratante como exemplo.

O estudo empregou um método misto sequencial exploratório, combinando um grupo focal para o desenvolvimento de estímulos visuais com um questionário online contendo três estímulos visuais atribuídos aleatoriamente a cada respondente. As principais descobertas indicam que a presença de um logotipo cruelty-free influencia significativamente a intenção de compra dos consumidores, sendo que os logotipos certificados cruelty-free geram intenções mais positivas de compra em comparação com logos não certificados. No entanto, os resultados sugerem que nem as atitudes servem como mediadoras, nem o conhecimento e o altruísmo atuam como moderadores no modelo.

Em conclusão, este estudo fornece aos gestores e profissionais de marketing de marcas de cosméticos insights valiosos sobre como aumentar a intenção de compra dos consumidores, incorporando rótulos cruelty-free, especialmente aqueles certificados por entidades independentes.

Palavras-chave: Cosméticos cruelty-free, logotipos cruelty-free, logotipos certificados cruelty-free, logotipos autointitulados cruelty-free, intenção de compra, atitudes em relação a cosméticos cruelty-free, altruísmo dos millennials, conhecimento de rótulos cruelty-free.

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Glossary

ECHA – European Chemicals Agency

EU – European Union

ECHA – European Chemicals Agency

PETA – Ethical Treatment of Animals

PI – Purchase intention

RQ – Research Question

USA – United States of America

1. Introduction

Over the past few decades, consumer preferences have been changing. Even though personal preferences of consumers remain the primary driver for choosing cosmetic products, there is a discernible shift towards placing greater importance on environmental and ethical factors during the decision-making process (Liobikienė & Bernatonienė, 2017; Sahota, 2014)

Unethical practices such as animal testing have drawn the scrutiny of various stakeholders, including policymakers, industry experts, and, most notably, individual consumers, prompting cosmetic companies to explore alternative testing methods (Hou & Lampe, 2015). Indeed, the use of animals in laboratory tests for cosmetic development has been widely criticised by animal protection groups and consumers at large (Alaouir et al., 2019).

The millennial generation, often referred to as Generation Y, stands at the forefront of this transformative shift towards conscientious, sustainable, and environmentally friendly consumption practices, standing out as one of the most ethically conscious consumer segments (Marton et al., 2020). Therefore, as one of the most ethically conscious consumer segments, millennials wield significant influence (Arli et al., 2017), driving the increasing demand for ethical cosmetics (Alaouir et al., 2019).

This generational cohort's ethical considerations extend beyond personal choices, as they actively engage in companies' business decisions (Smith, 1995). Serving as activists, they possess the capacity to boycott and punish unethical behaviours yet are also inclined to reward companies for ethical decisions (Carrigan & Attalla, 2001). In response to this evolving consumer landscape, companies are strategically exploring certification labels' attributes to enhance their consumer appeal (Brach et al., 2018). Certifying organisations such as Leaping Bunny, PETA, and Choose Cruelty-Free certify companies that abstain from animal testing, symbolising their commitment through official "bunny" logos. While the term "cruelty-free" lacks a formal legal definition, it generally denotes a product composed of raw materials obtained without causing harm to animals and having undergone no animal testing (U.S. Food & Drug Administration, 2020).

In essence, cruelty-free cosmetics have garnered significantly favourable attitudes and behaviours, primarily driven by considerations of animal rights and welfare. Nevertheless, previous research on cruelty-free cosmetics has not provided a comprehensive and dependable explanation of attitudes and purchase intentions regarding products that refrain from animal testing (Sheehan & Lee, 2014).

1.1. Academic and managerial relevance

Prior research has predominantly focused on unravelling the factors driving consumers' intentions to purchase ethical products. Nevertheless, a noticeable research gap persists within the cosmetics domain, particularly concerning cruelty-free cosmetics and their impact on purchase intention (Alaouir et al., 2019). This gap is further pronounced when considering Generation Y, where even fewer studies explore their intention to purchase cruelty-free cosmetics, underscoring the growing significance of such studies.

Identifying and understanding consumers' ethical purchase intentions holds immense value for companies striving to develop more ethically friendly business strategies (Yadav & Pathak, 2017). By delving into the purchase intentions of Generation Y individuals regarding cruelty-free cosmetic products, this study aims to bridge these gaps in the existing body of knowledge. Through an analysis of the impact of three distinct factors – attitude, altruism, and knowledge – this research seeks to empower managers and marketers of ethical cosmetic brands.

1.2. Problem statement

This research aims to explore the influence of cruelty-free labels on millennial consumers' purchase intentions concerning cosmetic products. Specifically, it seeks to determine whether certified cruelty-free labels wield a more substantial influence than self-claimed (or uncertified) ones. Additionally, the study aims to investigate the mediating and moderating effects of millennials' attitudes, knowledge, and altruism on the purchase intentions of such labels.

RQ1: *How do cruelty-free logos influence millennials' purchase intentions regarding cosmetic products?*

RQ2: *How do consumer attitude, knowledge, and altruism influence millennials' purchase intentions regarding cruelty-free cosmetic products?*

1.3. Methodology

To effectively address the research questions, this study adopts an explanatory approach integrating both qualitative and quantitative methodologies, utilising a focus group and online survey as primary research methods. These methods aim to assess the relationship between cruelty-free labels and purchase intention while examining the mediating and moderating effects of consumer knowledge, attitude, and altruism.

1.4. Thesis organisation

This dissertation is organised as follows: the first chapter introduces the topic, along with the problem statement, research questions, and an outline of the thesis structure. The subsequent chapter conducts a thorough literature review, delving into prior studies on the topic and discussing their limitations. The third chapter provides insight into the employed research methodology and details the data collection process. Following this, the fourth chapter delves into data analysis, presenting findings derived from the collected data. Finally, the concluding chapter summarises key insights, delineates the research's contributions, acknowledges its limitations, and offers suggestions for future research in this field.

2. Literature review

This chapter establishes a theoretical framework to address research questions, presenting definitions and insights from prior empirical studies. The topics are analysed, interpreted, and discussed, leading to the formulation of hypotheses for subsequent analysis. The chapter concludes by presenting the underlying conceptual framework, illustrating the relationships between the selected variables.

2.1. Purchase intention

Intention, as described by O'Brien (1971, p.283), denotes the "extent of commitment to a future action, self-prediction of anticipated behaviour, or, more simply, plans". Ajzen (2002) emphasises that intention, serving as a precursor to behaviour, delineates an individual's motivation and willingness to invest effort in a specific course of action. In essence, attitude leads to intention, and intention, in turn, leads to behaviour (Zollo et al., 2018).

Within the context of consumer behaviour, intention reflects the likelihood of purchasing a particular product or brand (Morrison, 1979). Therefore, purchase intention entails an individual's own awareness of the effort they are willing to exert to purchase a given brand (Spears and Singh, 2004), reflecting consumers' inclination toward making future purchases, dependent on their evaluation process and the perceived value anticipated from the product (Chang & Wildt, 1994).

This concept holds significant value for marketing managers, as it consistently predicts actual purchase behaviour (Morrison, 1979), aids in estimating market demand (Morwitz et al., 2007) and facilitates the forecasting of product sales (Newberry et al., 2003).

Nonetheless, a notable attitude-behaviour gap persists between consumers' stated intentions and their actual purchase behaviour (Carrigan & Attalla, 2001). Despite some contradictory studies questioning its reliability, purchase intention has been extensively employed as a proxy for consumer behaviour in academic research (de Cannière et al., 2010). Indeed, empirical evidence has consistently shown that strong purchase intentions are often converted into actual purchases, establishing a positive relationship between purchase intention and behaviour (Armstrong et al., 2000).

Consumers' purchase intentions are influenced by a multitude of factors that play a pivotal role in their decision-making processes (Ajzen, 1991). Personal factors, including age, gender, occupation, economic conditions, personality, and self-consciousness, along with psychological

factors such as motivation, perception, and knowledge, can exert influence on consumers' purchase intentions (Stávková et al., 2008). Age, in particular, might hold relevance given its prospective differential impact on purchase intentions. At the same time, consumers' knowledge takes on substantial importance, playing a role in providing relevant information to the public and thereby influencing purchase intentions (Stávková et al., 2008).

As such, while multiple factors contribute to consumers' purchase intentions, this research seeks to elucidate the complex interplay of millennials' consumer attitudes towards cruelty-free cosmetic products, knowledge of cruelty-free cosmetic logos, and their altruistic motives in shaping intentions to purchase cruelty-free cosmetic products.

2.2. The millennial (generation Y) consumer

Millennials, commonly referred to as Generation Y, encompass individuals born between the early 1980s and early 2000s (Lee & Kotler, 2015). Comprising a substantial portion of the population and wielding an estimated annual purchasing power of approximately $200 billion (Moreno et al., 2017), the millennial generation not only stands as the largest but also one of the most influential and powerful consumer segments (Dimock, 2019; Arli et al., 2017). Thus, this demographic represents a substantial and dominant market force, underscoring its significance both presently and in the future (Anastasia et al., 2019; Khalek et al., 2015).

This tech-savvy generation has matured in a rapidly evolving technological landscape, earning them a reputation for being astute and well-informed. Nurtured in a consumption-oriented society, they possess a wealth of brand knowledge, attributed in part to their ready access to technology and information (Noble et al., 2009).

A report from the World Economic Forum's Global Shapers Annual Survey (2017) underlined the environmental concerns of this generation. A Statista (2019) study found that 82% of respondents considered environmental issues to be significant in their lives. Consequently, this young consumer generation is not only predisposed to support organisations contributing to communities and the environment (Synodinos & Bevan-Dye, 2014) but is also progressively willing, particularly in developing countries, to purchase green products and adopt responsible consumption practices (Yadav et al., 2016; Uddin et al., 2018; Agrawal et al., 2018).

Nonetheless, this generation exhibits a strong and emotional response to ethical concerns (Kanchanapibul et al., 2014), being driven by personal motivation to purchase ethical products, encouraging greater participation in ethical consumption among the succeeding generation, and

consequently contributing to boosted revenues for this sector (Kanchanapibul et al., 2014; Marton et al., 2020). Notably, Min et al. (2018) observed a rise in the percentage of young consumers opposing animal testing, increasing from 31% in 2001 to 54% in 2013.

Accordingly, given the heightened awareness of ethical concerns, millennials significantly contribute to the rising demand for ethical cosmetics (Alaouir et al., 2019), and are willing to overspend on sustainable and animal cruelty-free cosmetics as it enables them to express their sympathy as well as contribute towards creating a sustainable future for upcoming generations (Sustainability in the Cosmetic Industry, 2019). Therefore, it becomes crucial to delve into the purchase intention patterns of the millennial generation in this context.

2.3. Cosmetic industry

Cosmetics and cosmetic products, as defined by article 2 of the prevailing European regulation (European Commission, 2015), refer to "any substance or mixture intended to be placed in contact with the external parts of the human body (epidermis, hair system, nails, lips and external genital organs) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance, protecting them, keeping them in good condition or correcting body odours" – emphasising the industry's multifaceted role in a contemporary society (Bom et al., 2019).

Undoubtedly, the cosmetic industry stands as a global giant (Lourenço-Lopes et al., 2020) – the international cosmetics market reached a valuation of USD 103.82 billion in 2023 and is expected to maintain a steady growth trajectory according to Statista (2023b). Indeed, Statista (2023b) anticipates that the market for cosmetics will expand further, reaching an estimated USD 128.89 billion by 2028.

This dynamism within the cosmetics industry is propelled by various factors, including market trends, political influences, societal shifts, and heightened consumer awareness. Given this ever-evolving landscape, cosmetic companies continually engage in innovation, refining their products, sourcing methods, and manufacturing processes to not only stay competitive but also resonate with the preferences of consumers (Ramli, 2015).

Moreover, prominent cosmetic brands such as L'Oréal, Unilever, Procter & Gamble Co., The Estée Lauder Companies, Shiseido Company, and Beiersdorf, have been acknowledged as key players with prominent Global Cruelty-Free Cosmetics profiles (Statista, 2023a).

2.4. Cruelty-free labels

According to Cruelty free International (2023) consumers generally perceive “cruelty-free” as a label applied to products that are manufactured without causing harm to animals throughout the entire supply chain, ensuring they have not undergone testing on animals.

Given the absence of a formal legal definition, cosmetic companies can freely employ the term “cruelty-free” for marketing purposes, even if their products may not be entirely harmless towards animals (U.S. Food & Drug Administration, 2020). However, in recent decades, limitations of animal testing have become increasingly evident, with a notable push for regulatory measures and initiatives supporting alternative toxicity testing methods, especially in the realm of cosmetic products (Marton et al., 2020).

To assure consumers of the absence of animal testing, cosmetic and skincare products may undergo registration with recognised organisations overseeing such practices, such as PETA, Choose Cruelty-Free, and Cruelty-Free International.

Known for its Leaping Bunny trademark (Figure 1), Cruelty Free International mandates brands to completely prohibit animal testing during production. As a result, products cannot be sold in China through B2B channels and can only be sold directly to consumers (Cruelty free International).

Figure 1 – Cruelty Free International’s certified cruelty-free logo.

Similarly, Choose Cruelty Free (Figure 2), an Australian organisation associated with Cruelty-Free International, provides certification to companies demonstrating five years of cruelty-free testing practices and refraining from selling in markets that require animal testing, such as China (Free the Bunnies; Choose Cruelty Free).

Figure 2 – Choose Cruelty-Free's certified cruelty-free logo.

PETA's certification process includes a questionnaire verifying a commitment to avoiding animal-derived ingredients and cruelty towards animals during product development (Figure 3). Paradoxically, however, PETA permits the sale of certified products in China, where mandatory animal testing is in practice. This means that, despite PETA's apparently stringent criteria, some approved products may still contain ingredients that underwent animal testing within the Chinese market (PETA).

Figure 3 – PETA's certified cruelty-free logo.

In 2013, the European Union implemented a comprehensive ban on the production and commercialisation of cosmetics tested on animals globally, covering both cosmetic products as well as their ingredients (European Commission, 2013). Despite these progressive bans, challenges persist within the regulatory landscape.

The European Chemicals Agency (ECHA), backed by the European Commission, might occasionally necessitate animal testing for cosmetics chemicals "as a last resort", for instance. A significant challenge also lies in a loophole allowing companies to test products in countries like China, where animal testing is mandated, and still market these products within the EU. Challenges also extend beyond the European context, with both the United States and Canada currently lacking explicit prohibitions against such practices. The United States notably remains a global leader in animal testing, with a staggering 20 million animals employed for research purposes in 2020 (Statista, 2021).

A study conducted by Sheehan & Lee (2014) revealed that the presence of a cruelty-free logo had a significant motivating effect on certain consumers, particularly those advocating for animal rights. These findings align with the general perception that "negatively framed" messages, such as cruelty-free labelling, are deemed informative and essential by consumers (Newburger, 2009) which is substantiated by well-established typologies within the cosmetics industry (Fowler et al., 2015).

There are companies that adhere to cruelty-free practices but choose not to display any certified logos or instead prefer to display self-claimed logos on their products, often influenced by the annual fees associated with certifications. However, self-claimed logos are known to potentially generate confusion among informed consumers regarding the authenticity of the claim (Sheehan & Lee, 2014). Research also indicates that consumers generally prefer certifications conducted independently by third parties over self-claimed labels (Md et al., 2017). In light of these observations, the following hypotheses are proposed:

H1: *Featuring a cruelty-free logo on cosmetics positively impacts millennial consumers' purchase intention.*

H2: *Certified cruelty-free logos have a higher impact on millennials' purchase intention than uncertified (self-claimed) cruelty-free logos.*

2.5. Factors influencing millennials' purchase intention:

2.5.1. Consumer attitude

"The degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188)

Attitudes serve as great predictors for beliefs and behavioural intentions (Shaari & Tan, 2017) by assessing the attributes associated with behaviour and ultimately determining the positivity or negativity of these attributes (Çoker & van der Linden, 2022).

As mentioned previously, attitude leads to intention, and intention, in turn, leads to behaviour (Zollo et al., 2018). Consequently, the stronger an individual's attitude is toward a particular behaviour, the stronger their intention to act accordingly becomes (Ajzen, 1991). Indeed, research has consistently shown that as attitudes become more favourable, purchase intentions also tend to increase (Loo et al., 2013; Kim & Chung, 2011; Tarkiainen & Sundqvist, 2005).

Understanding consumers' attitudes becomes instrumental for refining market strategies and engaging with consumers effectively (Miguel et al., 2020), as it often serves as a mediator in the connection between their values and behaviour (Shim & Eastlick, 1998). Therefore, attitudes can be linked to consumers' concerns about the repercussions of their purchases and altruistic motives. Both these elements play a role in driving consumers towards ethical consumption, overall contributing to a market more grounded in ethicality (Gustavsson et al., 2019).

Insights from a study conducted by Wuisan et al. (2022) revealed that attitude positively and significantly influences consumers' intention of purchasing cruelty-free cosmetics products. Similarly, Alaouir et al. (2019) conducted a study on female millennials in Sweden, highlighting that, among various factors, a positive attitude significantly affects the intention to buy cruelty-free cosmetics.

This collective body of evidence suggests that consumers' attitudes are likely to influence millennials' purchase intention for cruelty-free cosmetics. Therefore, the following hypothesis is put forward:

H3: *Millennials' attitude towards cruelty-free cosmetics mediates the relationship between cruelty-free labels and purchase intention.*

2.5.2. Consumer knowledge of cruelty-free labels

Individuals' knowledge and concerns regarding animal welfare, environmentally friendly products, and labour conditions have been revealed as influential factors positively affecting consumers' intention to adopt ethical consumption choices (Sebastiani et al., 2013).

Findings that deal with the correlation between knowledge and purchase intention demonstrate that knowledge positively influences purchase intention (Haro et al., 2018; Nurhayati et al., 2020; Rahim Romle et al., 2016). However, it is crucial to consider the roles played by consumers' environmental and label-specific knowledge in this context (Daugbjerg et al., 2014; Taufique et al., 2016).

Research by Taufique et al. (2016) compared general environmental knowledge with label-specific knowledge using survey data and found that label-related knowledge is more effective in stimulating consumer purchasing behaviour than general environmental knowledge. Similarly, Daugbjerg et al. (2014) observed that eco-label knowledge enhances consumer trust in eco-labels and is likely to influence their purchasing decisions.

Moreover, beyond the direct impact of knowledge and purchase intention, research conducted by Amalia & Darmawan (2023) provides solid evidence supporting the idea that consumer knowledge significantly and positively shapes attitudes toward the intention to purchase cruelty-free products.

Consequently, consumers equipped with a deeper understanding of cruelty-free labels are more likely to hold not only positive intentions to purchase cruelty-free products, but also shape favourable attitudes toward cruelty-free cosmetics and, subsequently, intentions to purchase such products. To formalise these dynamics, the following hypotheses are presented:

H4: *Millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and attitudes toward cruelty-free cosmetics.*

H5: *Millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and purchase intention.*

2.5.3. Consumer altruism

"A desire to benefit someone else for his or her sake rather than one's own."

(Batson, 2011, p. 3)

According to Batson (2014), altruism is characterised as a selfless act of helping others without seeking self-interests, monetary compensation, or selfish motives. It encapsulates voluntary acts of kindness towards others, driven by the pure intent of offering help without expecting any form of reward (Oh & Yoon, 2014).

Pro-social behaviour, rooted in societal norms and expectations, often leads individuals towards altruistic acts due to societal norms and expectations. However, while altruistic behaviour is a form of pro-social behaviour, not all pro-social actions are truly altruistic. To classify an act as purely altruistic, one must demonstrate the intention behind the behaviour and the so-called purity of the underlying motives (Bar-Tal, 1982).

Shaw and Shiu. (2002) argue that consumers are increasingly influenced by ethical and moral considerations that extend beyond self-interest, aligning with a sense of responsibility towards others. Building upon this perspective, Davies & Gutsche (2016) identified additional factors contributing to altruism and ethical consumption. These factors include social guilt, where consumers either experience peer pressure or firsthand exposure to poor working conditions, compelling them to make ethical purchases. Another motivating factor is self-satisfaction, driven by the desire to feel good when choosing fair-trade products (Davies & Gutsche, 2016a).

Research conducted by Oh & Yoon (2014) provided evidence that altruism exerts a positive influence on both attitudes towards ethical purchase intentions and has a direct impact on purchase intention. Grappe et al. (2021) explored the impact of claims such as "not tested on animals" on consumers' behavioural intentions. Their findings indicate that, among various factors, altruism significantly influences the intention to purchase cruelty-free products.

Research consistently suggests that altruistic motives exert a profound influence on intentions to purchase products bearing cruelty-free labels, playing a moderating pivotal role between attitudes and actual purchase intention. Consequently, the following hypotheses are proposed:

H6: *Millennials' altruism moderates the relationship between their attitude toward cruelty-free cosmetics and purchase intention.*

H7: *Millennials' altruism moderates the relationship between cruelty-free labels and purchase intention.*

2.6. Conceptual framework

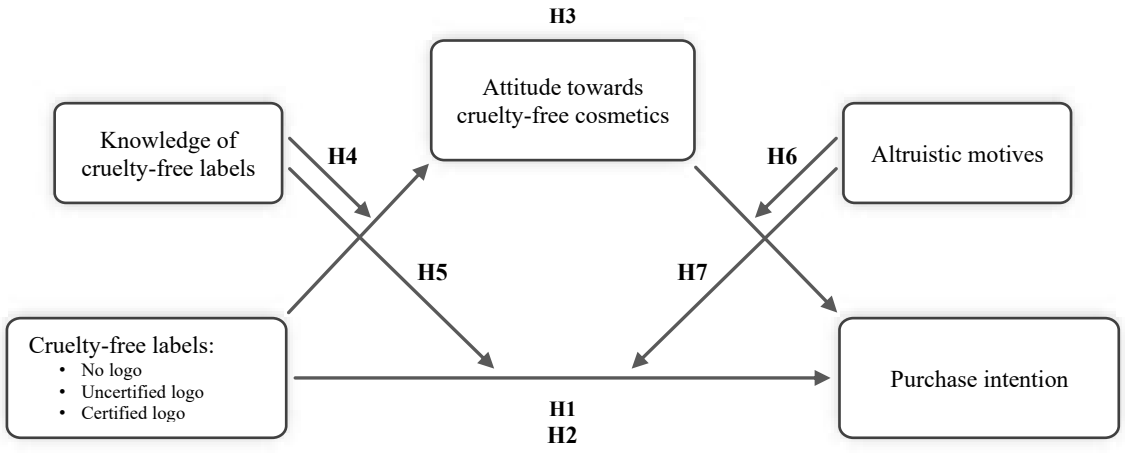

Figure 4 – Conceptual framework.

3. Methodology

The following chapter outlines the methodology employed to address the research questions and validate the proposed hypotheses. It begins by addressing the chosen research approach, followed by a comprehensive exploration of the primary data collection process. Additionally, it provides insights into the measurements and statistical techniques utilised in the study.

3.1. Research approach

The primary objective of this research was to examine how cruelty-free labels influenced the purchase intentions of millennials, with a specific focus on whether official certification carried more weight than self-claimed labels. The study also investigated how certain consumer factors – attitude, knowledge, and altruism – contributed to these purchase intentions.

To achieve these goals, an explanatory research approach was adopted to establish cause-effect relationships among variables(Saunders et al., 2009). The study applied both qualitative and quantitative methods, incorporating a focus group and an online survey (Greener & Martelli, 2008).

The focus group aimed to develop stimuli by assisting in the selection of cosmetic products and determining the most suitable cruelty-free labels (both certified and uncertified). On the other hand, the online questionnaire was developed to facilitate the quantitative analysis of the chosen variable by quantifying their relationships and effects (Collis & Hussey, 2021; Kumar, 2019).

Experimental research with a between-group factorial experimental design was conducted to manipulate the independent variable and assess its impact on dependent variables (Vogt & Johnson, 2011). This approach allowed the examination of treatment effects through random assignment, while controlling for other factors (Creswell, 2014).

The online survey questionnaire, incorporating experimental manipulations and measures, was hosted on the Qualtrics platform. This method offered advantages such as higher response rates, versatility, flexibility, speed, cost-effectiveness, and data quality compared to traditional survey methods (Thompson, 2006). However, it is important to acknowledge its potential to introduce self-selection bias, as certain groups may be more inclined to participate while others might ignore it, potentially leading to a high survey abandonment rate and data validity concerns (Fan et al., 2010; Wright, 2005).

Following data collection, SPSS was used for statistical analysis.

3.2. Focus group

Focus groups offer the advantage of being able to identify a range of experiences and perspectives and, from this pool, derive themes that can be explored in greater detail (Morgan, 1996). From these insights, the goal of this focus group was to develop stimuli for the subsequent questionnaire: one cosmetic product without any cruelty-free logo, another featuring an uncertified logo and the other with a certified logo.

The process began by identifying the most frequently purchased cosmetic product by participants, and gauging how often they bought and used it. The next part was dedicated to exploring consumers' familiarity, trustworthiness, and experience regarding the certified cruelty-free logos. Participants were presented with three certified logos (Figure 5) and asked if they recognised any of them. They were also prompted to select the logo they were most familiar with. Additionally, they shared their interpretations of the logos, identified which logos they found most and least trustworthy, and indicated the cosmetic product categories that immediately came to mind when thinking about cruelty-free products. Finally, participants were asked if they had ever intentionally purchased any cruelty-free cosmetic products.

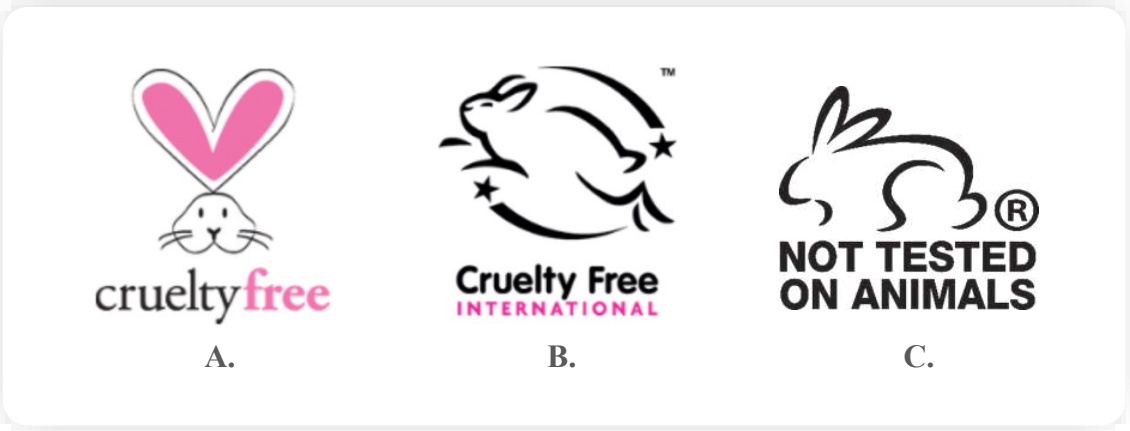

Figure 5 – Certified cruelty-free labels. **A:** PETA's cruelty-free logo; **B:** Leaping Bunny, Cruelty Free International's cruelty-free logo; **C:** Choose Cruelty-Free's cruelty-free logo.

Later, participants were presented with a hypothetical scenario to help develop an uncertified cruelty-free logo for the upcoming stimuli.

The focus group included eight participants of different genders, all belonging to the millennial generation. Each participant answered the questions from each section individually to avoid response bias. Following this, a group discussion was held to facilitate further exploration of the topics at hand.

3.2.1. Findings

When participants were asked about the cosmetic category they most frequently purchased, skincare emerged as the primary choice, with moisturising cream being the most selected product among both female and male participants. The study's results revealed that all participants were familiar with at least one certified cruelty-free logo, with the logos from PETA and Choose Cruelty-Free being the most widely recognised. Participants conveyed that these logos communicated the message that the product is "not tested on animals" and does not harm animals during the production process. However, the majority had not deliberately purchased a cosmetic product based on this cruelty-free feature.

Regarding the reliability of the logos, participants expressed that PETA's logo (Figure 5, logo A) seemed somewhat childish, and the statement "cruelty-free" could be difficult to understand for those unfamiliar with its meaning. Concerning the Leaping Bunny logo (Figure 5, logo B), some participants mentioned that the absence of a text explicitly stating "not tested on animals" could make it difficult to discern the intended message. The Choose Cruelty-Free logo (Figure 5, logo C) was considered the most reliable and trustworthy, being the most suitable for communicating that a product is not tested on animals since it features both a bunny image and the text "not tested on animals".

Participants unanimously stressed the importance of incorporating a bunny image symbolising "no harm to animals" for an uncertified logo, in the context of cruelty-free logos. Furthermore, the inclusion of explicit text such as "not tested on animals" and/or "cruelty-free" along with the bunny image was deemed essential for conveying the logo's meaning effectively.

These findings form the basis for defining the three stimuli crucial for the upcoming experiment and are represented below (Figure 6).

Figure 6 – Survey visual stimuli versions. A: "No logo" image; B: "uncertified logo" image; C: "certified logo" image.

3.3. Survey questionnaire

3.3.1. Pre-survey

Prior to the online survey distribution, a pre-survey was conducted to certify that all items and scales are clearly understood by participants, ensuring appropriateness for the experiment (Goodwin, 2010). It also helps in identifying and rectifying potential biases by improving question wording, scales, and measurements (Creswell, 2014).

Following this, participants were queried about their perceptions of the study, including the clarity of items and scales, and the credibility of the stimuli.

Of the 32 responses received during the pre-survey, 28 adhered to the stipulated criteria and were therefore deemed valid. Within the valid participants' responses, 68% were female, and 57% fell within the age range of 27 to 34 years. Out of these, 8 respondents were presented with the scenario without a cruelty-free logo, 11 were shown the certified certification scenario, while the remaining 9 got the self-claimed certification scenario. Regarding the former scenario, 88% responded accurately, while in the remaining scenarios only 82% and 67% of respondents were able to identify the certified and uncertified cruelty-free versions of the logos in the product, respectively. Given this data, the manipulation check for the primary study was deemed acceptable for the main study.

3.3.2. Data collection

The survey was distributed online through social media, which provided a rich platform for conducting the study. This approach allows for fast data collection and provides access to a broad and diverse participant pool that might be otherwise challenging to reach (Wright K. B., 2005). The

survey was conducted in English, ensuring inclusivity across various nationalities, and enabling the collection of a substantial amount of data.

For the target group's purpose, two screening questions were added at the beginning of the survey. The questions excluded participants who do not purchase moisturiser cream, and those who were born outside the range of 1980 to 2000, to ensure the research focuses on the millennial demographic.

Given the challenge of obtaining a sample that can be generalised to the entire population due to the lack of specific instruments for reaching this demographic, the experiment will employ a non-probability (or convenience) sampling method (Creswell, 2014).

3.3.3. Research design

The research design serves as the foundation that aligns the study's purpose with the specific methods for gathering and analysing data to draw meaningful conclusions (Kumar, 2019).

The questionnaire started with both aforementioned screening questions, to filter suitable respondents. Following this, participants were randomly allocated to one of three scenarios, each showcasing a different product presentation with the intent of looking for purchase intention variations: the first featuring a moisturiser without a cruelty-free logo, the second displaying a product with an uncertified cruelty-free logo, and the third a product with a certified cruelty-free logo.

For each scenario, a manipulation question assessed participants' ability to correctly perceive the respective stimulus. Additional questions were included to control for various factors, which remained consistent across all groups – questions related to the dependent variable (purchase intention), the mediator (consumer attitude), and the moderating variables (consumer knowledge and altruism).

The survey concluded with demographic and personal inquiries, encompassing aspects such as gender, age range, educational level, occupation status, and gross monthly income, aiming to better characterise the study sample.

In summary, the questionnaire evaluated respondents' purchase intention of their assigned scenario. Respondents also provided insights into how their attitude towards cruelty-free cosmetics, knowledge of cruelty-free labels, and altruistic motives influenced their intentions to purchase such products.

3.3.4. Scale measures

In this study, a series of constructs were employed, each quantified using a balanced 7-point Likert scale, with 1 indicating "strongly disagree" and 7 indicating "strongly agree" (Table 1).

Consumer purchase intention was analysed by presenting an image of a moisturiser alongside a three-item construct, a methodology derived from Spears & Singh (2004). This approach was chosen due to its proven effectiveness in measuring attitudes towards the brand and purchase intentions within a well-established theoretical framework.

To ascertain consumer attitudes towards cruelty-free cosmetics, respondents were presented with a four-item construct, following the studies of Han & Kim (2010) on consumer behaviour in the cosmetics industry.

The assessment of consumer knowledge regarding cruelty-free labels was conducted using a five-item scale, a method previously validated by Park et al. (1992) and subsequently applied by Ghazali et al. (2017) and Zollo et al. (2021).

Finally, consumer altruism was evaluated using a five-item construct developed by Davies & Gutsche (2016). This construct aimed to measure the extent of participants' altruistic motives.

Framework	Measure	Items	Scale	Reference
Independent variable	Cruelty-free cosmetics	N/A	N/A	N/A
Moderator	Consumer knowledge of cruelty-free labels	5	7-point Likert scale	Park et al. (1992)
Moderator	Consumer altruism	5	7-point Likert scale	(Davies & Gutsche, 2016b)
Mediator	Consumer attitude	6	7-point Likert scale	Han & Kim (2010)
Dependent variable	Purchase intention	2	7-point Likert scale	Spears & Singh (2004)

Table 1 – Measurement model.

3.3.5. Data analysis

The quantitative data collected underwent analysis using IBM's SPSS software, where a set of statistical tests were employed to study the proposed hypotheses.

Descriptive statistics, including frequencies, provided insights into demographics to characterise the sample. The Mann–Whitney U test explored how the presence of cruelty-free logos influenced purchase intentions, as well as assessed differences between certified and uncertified cruelty-free logos. Assumptions were tested using Kolmogorov-Smirnov, Shapiro-Wilk and Levene's tests.

Moderation and mediation analyses, conducted with Hayes' macro-PROCESS model 29, examined the influence of consumers' altruism, attitude towards cruelty-free cosmetics, and knowledge of cruelty-free labels.

4. Results and discussion

The upcoming chapter is dedicated to the analysis, understanding and presentation of survey questionnaire findings. Following the characterisation of the sample in demographic terms, each hypothesis will be tested, leading to a subsequent discussion and interpretation of the statistical results.

4.1. Results

4.1.1. Outliers

The survey gathered a total of 286 responses, with 11 participants failing to complete the survey, and 35 participants failing the screening questions. Among those, 23 did not belong to Generation Y, and 12 had never purchased cruelty-free cosmetic products.

To ensure data integrity, Mahalanobis distance analysis was employed. Based on this analysis, two outliers were identified and subsequently excluded from further analyses.

Participants were randomly and homogenously assigned to each stimulus. Nevertheless, 64 respondents were excluded as they did not correctly perceive the manipulation question, culminating in a total of 174 valid responses for the analyses. This led to a somewhat imbalanced distribution in the number of participants exposed to different types of logos – 43% respondents were exposed to the stimuli without any logo, 26% received a self-claimed cruelty-free logo, and 31% observed a certified cruelty-free logo (Table 2).

Framework	Frequency	Percent	Valid percent	Cum. percent
No logo	74	42,5	42,5	42,5
Uncertified logo	46	26,4	26,4	68,9
Certified logo	54	31,0	31,0	100,0
Total	174	100,0	100,0	–

Table 2 – Distribution of respondents based on framework types.

4.1.2. Sample characterisation

Out of the 174 participants, 56% were female, with the majority (67%) falling within the age group of 27-34 years (Table 3). Although the survey was distributed among various

nationalities, most participants were from United Kingdom, Portugal, and Poland (for a combined 53% of the sample).

Concerning employment status, most participants were employed (74%), and the educational background varied, with most having completed high school, a bachelor's, or a master's degree (for a combined 91%). Moreover, a significant portion of participants reported a monthly gross income ranging from €500 to €2,499 (66%).

		No logo	Uncertified logo	Certified logo	Avg.
Gender	Male	33,8%	47,8%	40,7%	40,8%
	Female	64,9%	47,8%	57,4%	56,7%
	Non-binary	1,4%	4,3%	0,0%	1,9%
	Prefer not to say	0,0%	0,0%	1,9%	0,6%
	Total	100,0%	100,0%	100,0%	–
Age	27 - 34	67,6%	65,2%	70,4%	67,7%
	35 - 42	32,4%	34,8%	29,6%	32,3%
	Total	100,0%	100,0%	100,0%	–
Education level	< High school degree	1,4%	2,2%	1,9%	1,8%
	High school degree	21,6%	15,2%	13,0%	16,6%
	Bachelor's degree	40,5%	39,1%	48,1%	42,6%
	Master's degree/MBA	28,4%	32,6%	27,8%	29,6%
	Doctoral degree or PhD	5,4%	10,9%	5,6%	7,3%
	Professional degree	2,7%	0,0%	3,7%	2,1%
	Total	100,0%	100,0%	100,0%	–
Occupation status	Student	1,4%	8,7%	9,3%	6,4%
	Student-Worker	9,5%	4,3%	5,6%	6,5%
	Employed	73,0%	67,4%	70,4%	70,2%

	Unemployed	12,2%	17,4%	13,0%	14,2%
	Retired	0,0%	0,0%	0,0%	0,0%
	Other	4,1%	2,2%	1,9%	2,7%
	Total	100,0%	100,0%	100,0%	–
Gross monthly income	No Income	8,1%	6,5%	3,7%	6,1%
	Less than 500€	2,7%	13,0%	5,6%	7,1%
	500€ - 999€	17,6%	10,9%	16,7%	15,0%
	1000€ - 1499€	20,3%	19,6%	16,7%	18,8%
	1500€ - 1999€	17,6%	23,9%	16,7%	19,4%
	2000€ - 2499€	13,5%	8,7%	14,8%	12,3%
	2500€ - 3000€	5,4%	4,3%	7,4%	5,7%
	More than 3000€	8,1%	10,9%	7,4%	8,8%
	Prefer not to say	6,8%	2,2%	11,1%	6,7%
	Total	100,0%	100,0%	100,0%	–

Table 3 – Respondent demographic characterisation.

In terms of purchasing behaviour, there was a relatively even distribution among those who buy moisturiser cream monthly (16%), every three months (37%), and every six months (24%). As for usage habits, the majority reported using it daily (51%).

4.1.3. Measure reliability

To validate the hypotheses, constructs from the survey questionnaire were extracted from existing literature. Despite prior validation from other studies, an analysis of the reliability of the constructs under study was deemed necessary due to slight modifications tailored to fit the research objectives. Cronbach's alpha coefficient was employed to measure the consistency of the scale items.

For purchase intention (PI), Cronbach's alpha was initially calculated for all stimuli concurrently. Subsequently, Cronbach's alpha was assessed independently for each stimulus, with

calculations based on the three items associated with each stimulus, therefore resulting in three distinct values.

With values ranging between 0 and 1, the interpretation of Cronbach's alpha values followed the guidelines presented by George & Mallery (2003). According to the researchers, an alpha higher than 0.80 is considered good, and higher than 0.90 is considered excellent (George & Mallery, 2003).

Most constructs under analysis had Cronbach's alpha values either exceeding or very close to 0.8, indicating good or high reliability. However, altruism did not achieve a Cronbach's alpha value near 0.8, requiring adjustments to its construct.

	Original		Adjusted		
Construct	**Items**	**Cronbach's Alpha**	**Items**	**Cronbach's Alpha**	**Quality**
PI (overall)	3	0.944	–	–	Excellent
PI (no logo)	3	0.944	–	–	Excellent
PI (certified)	3	0.923	–	–	Excellent
PI (uncertified)	3	0.912	–	–	Excellent
Attitude	6	0.901	–	–	Excellent
Knowledge	4	0.849	–	–	Good
Altruism	5	0.731	4	0.802	Good

Table 4 – Reliability analysis of measurement constructs.

4.1.4. Manipulation check

To assess participants' accurate perception of the stimuli, the questionnaire included a manipulation question, which aimed to determine if respondents could correctly identify the presence and type (certified or self-claimed) of cruelty-free logo on the product.

Each stimulus was presented to an average of 80 respondents. However, after excluding participants who didn't correctly perceive the manipulated stimuli, there were variations in respondent counts among different groups. As stated before, among those who received the stimulus without a logo, 42.5% responded accurately. For participants exposed to the uncertified cruelty-free logo, 26.4% accurately identified the uncertified logo on the product. In the case of the certified cruelty-free stimulus, 31% correctly confirmed its presence.

			Manipulation check		
			Wrong answers	Correct answers	Total
Group	**No logo**	Count	5	74	79
		% within group	7.8%	42.5%	33.2%
	Uncertified logo	Count	27	46	73
		% within group	42.2%	26.4%	30.7%
	Certified logo	Count	32	54	86
		% within group	50.0%	31.0%	36.1%
Total		Count	64	174	238
		% within group	100.0%	100.0%	100.0%

Table 5 – Group-wise analysis of manipulation check responses.

Overall, 73% (174) of the 238 respondents (excluding outliers, participants who did not complete the survey, and individuals who failed the screening questions) comprehended and correctly answered the manipulation question, indicating the effectiveness of the manipulation.

4.2. Results from the hypotheses tests

4.2.1. The impact of cruelty-free logos on purchase intention

H1: *Featuring a cruelty-free logo on cosmetics positively impacts millennials' purchase intention.*

This research primarily aims to comprehend the influence of cruelty-free labels (either certified or self-claimed) on consumers' purchase intention. As a result, an empirical statistical analysis was carried out to explore the relationship of purchase intention between two distinct groups: individuals exposed to a moisturiser packaging with a cruelty-free logo and those exposed to one without such logo.

Before proceeding, a series of assumptions needed verification. Kolmogorov-Smirnov and Shapiro-Wilk normality tests were conducted for the two conditions (Appendix 3). The results indicated a violation of the normality assumption in both conditions, as the p-values are below the conventional significance level ("No Logo" $p = 0.007$; "Logo" $p = 0.01$).

To address this, a nonparametric Mann-Whitney U test was employed to compare purchase intention between groups with and without the cruelty-free logo (Appendix 4). The Mann-Whitney

U test assumes that the observations in each group are independent; seeing as each respondent answered independently from anyone else in the survey, this requirement is met.

The model showed statistically different results between the two groups ($U = 2454.50;\ p < 0.05$), suggesting that the presence of a cruelty-free logo is associated with higher intentions to purchase.

Parallel to these results, means and standard deviations were also examined, revealing a higher mean purchase intention in the group exposed to the cruelty-free logo ($\bar{x} = 4.29;\ \sigma = 1.43$) compared to the group without the logo ($\bar{x} = 3.42;\ \sigma = 1.46$), implying that, on average, participants who were presented with the cruelty-free logo expressed a higher level of purchase intention compared to those who did not see the logo, supporting earlier findings from the Mann-Whitney U test results.

In conclusion, H1 cannot be rejected, supporting the claim that the presence of a cruelty-free logo on a cosmetic product significantly and positively impacts purchase intention for the millennial generation when compared to a cosmetic without any type of cruelty-free label.

4.2.2. The influence of cruelty-free label types on purchase intention

H2: *Certified cruelty-free logos have a higher impact on millennials' purchase intention over cosmetic products than uncertified (self-claimed) cruelty-free logos.*

The second hypothesis (H2) of this study proposed that certified cruelty-free logos have a more significant impact on millennials' purchase intention for cosmetic products than uncertified, self-claimed cruelty-free logos. To test this hypothesis, a two-step statistical analysis was conducted.

Firstly, the normality of the data was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests (Appendix 7). The results revealed that the data for uncertified logos adhered to the normality assumption with a p-value greater than 0.05 ($p = 0.129$). However, the data for certified logos violated the normality assumption, with p-values less than the 0.05 threshold ($p = 0.027$).

Given the non-normal distribution of the data for the certified group, the Mann-Whitney U test, was again deemed appropriate for the next step of the analysis, as it does not require the assumption of normality, and is suitable when comparing two independent groups – as is once more the case, since each respondent answered independently from anyone else in the questionnaire.

The Mann-Whitney U test results provided compelling evidence in support of H2. The test revealed a significant difference in purchase intention between uncertified ($Mean\ Rank = 35.66$) and certified logos ($Mean\ Rank = 63.14$) (Appendix 9), with a p-value less than 0.001 ($U = 559.500$; $Z\ score = -4.738$) (Appendix 8). The negative Z score indicates that the mean rank of purchase intention for certified logos is higher than for uncertified logos.

As such, these findings provide strong evidence in support of H2, suggesting that certified cruelty-free logos have a more substantial impact on millennials' purchase intention for cosmetic products than uncertified logos.

4.2.3 Consolidating the impact of cruelty-free logos on purchase intention

To further substantiate and ensure the statistical robustness of the findings from hypotheses 1 and 2, comparisons between all logo groups were drawn. As some groups do not meet ANOVA requirements of normal distribution, the non-parametric Kruskal-Wallis alternative was conducted to compare the purchase intentions across all three logo types.

The Kruskal-Wallis test revealed a significant difference in purchase intention across the three logo types (Appendix 10). To identify which specific groups differed from each other, pairwise comparisons were conducted.

The pairwise comparisons showed no significant difference in purchase intention between no logo and uncertified logo ($p = 1.000$). However, there were significant differences in purchase intention between no logo and certified logo ($p < 0.001$), and between uncertified logo and certified logo ($p < 0.001$).

Pairwise Comparisons of Logo Type					
Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
No logo-Uncertified logo	-4.396	9.419	-0.467	0.641	1.000
No logo-Certified logo	-50.488	8.979	-5.623	0.000	0.000
Uncertified logo - Certified logo	-46.092	10.066	-4.579	0.000	0.000

Table 6 – Kruskal-Wallis pairwise comparisons. Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

These results indicate that the presence of a certified logo significantly increases purchase intention compared to both no logo and uncertified logo. Overall, these findings provide robust evidence in support of both hypotheses 1 and 2, reinforcing the notion that certified cruelty-free logos have a more pronounced impact on millennials' purchase intention for cosmetic products than uncertified logos or no logo at all.

4.3. Mediation and moderation model

The subsequent analyses were conducted utilising the SPSS macro-PROCESS developed by Hayes (2013), employing model 29 (Appendix 11). This approach was performed since the conceptual framework and hypotheses included 1 mediator – attitude towards cruelty-free cosmetics – and 2 moderators – altruism and knowledge of cruelty-free logos. This analysis facilitates the exploration of the multiple effects resulting from both mediation and moderation processes, allowing for the assessment of a moderated mediation model (Borau et al., 2015).

4.3.1. Mediator

H3: *Millennials' attitude towards cruelty-free products mediates the relationship between purchase intention and cruelty-free labels.*

As previously stated, to evaluate the mediating effect that attitude towards cruelty-free cosmetics has between cruelty-free labels and purchase intention, a PROCESS analysis was performed using macro-PROCESS (Hayes, 2013) model 29.

Attitude is defined by the below expression:

$$Attitude = 5.4584 + (-0.1296 * Logo)$$

The R-squared value is 0.0289, which means that only about 2.89% of the variance in attitude can be explained by the presence of cruelty-free labels. The p-value for the F statistic is also not statistically significant ($p = 0.1718 > 0.05$), with a coefficient of -0.1296. This suggests that the model is not significantly better at explaining the outcome than an empty model.

It is fundamental to compare the total effect of cruelty-free labels on purchase intention, with the value representing the direct plus indirect effect of cruelty-free labels on purchase intention through attitude. This helps to assess if attitude indeed mediates the effect of cruelty-free labels on purchase intention.

The direct effect of cruelty-free labels on purchase intention is -0.2449, and the outcomes are not statistically significant ($p = 1.4135 > 0.05$). Similarly, the indirect effect of attitude on purchase intention is also not significant ($p = 1.7802 > 0.05$), with a coefficient value of 0.5573.

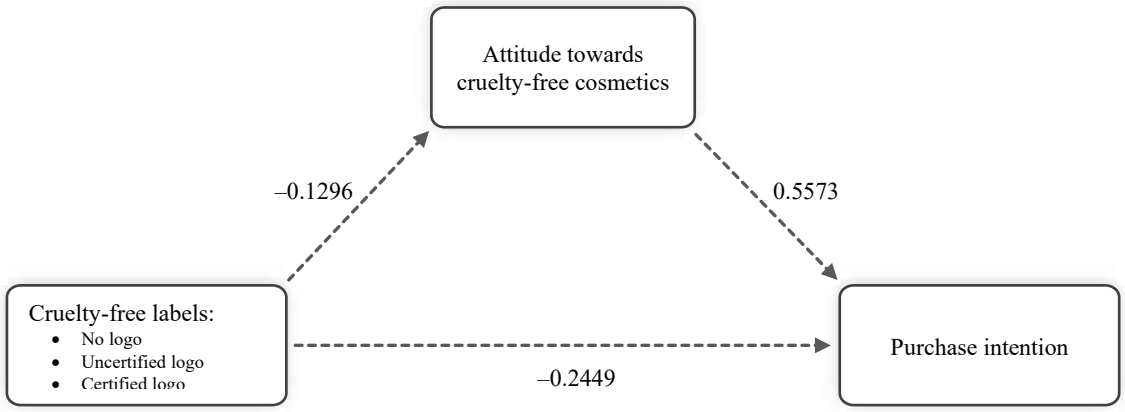

Figure 7 – The mediation effect of attitude with its respective coefficients.

In conclusion, the total effect was also found to be not significant ($p = 0.2746 > 0.05$). Furthermore, the 95% bootstrap confidence interval, being close to zero, suggests the absence of mediation through attitude. This interpretation leads to the conclusion that the hypothesis H3 cannot be validated.

4.3.2. Moderators

The inclusion of a moderator variables, demonstrating a statistically significant effect, contributes significantly to the enhancement of explaining the variance of the dependent variable (Borau et al., 2015). Consequently, this study seeks to investigate the moderation effects of variables through the following hypotheses:

H4: *Millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and attitude towards cruelty-free cosmetics.*

H5: *Millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and purchase intention.*

H6: *Millennials' altruism moderates the relationship between their attitude towards cruelty-free cosmetics and cruelty-free labels.*

H7: *Millennials' altruism moderates the relationship between cruelty-free labels and purchase intention.*

H4 proposes that millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and attitude, while H6 asserts that their altruism further moderates the relationship between attitude and purchase intention. Moreover, H5 and H7 propose that millennials' altruism and knowledge of cruelty-free labels moderate the relationship between cruelty-free labels and purchase intention. Hence, these hypotheses align with model 29 of the PROCESS analysis tool developed by Hayes (2013).

The interaction between cruelty-free labels and knowledge of cruelty-free labels did not yield statistically significant results ($p = 0.7317 > 0.05$, with a coefficient of 0.0217). Furthermore, the outcome indicated that knowledge of cruelty-free labels does not influence the attitude toward those labels in cosmetics ($p = 0.1709 > 0.05$, with a coefficient of 0.1025). Consequently, millennials' knowledge of cruelty-free labels is not considered a moderator between cruelty-free labels and attitude towards them, leading to the rejection of H4.

Similarly, the moderation effects of knowledge of cruelty-free labels on purchase intention results were not statistically significant ($p = 0.1850 > 0.05$, with a coefficient of -0.1503), resulting in the rejection of H5. On the other hand, the interaction between cruelty-free labels and knowledge of cruelty-free labels on purchase intention presented a p-value of $0.0053 < 0.05$ and a coefficient of 0.2692, and as such the interaction is recognised as statistically significant, therefore suggesting that the effect of logo type on purchase intention depends on the level of knowledge.

Lastly, the interaction between attitude towards cruelty-free cosmetics and altruism yielded the same conclusion ($p = 0.3815 > 0.05$, with a coefficient of -0.1095). Subsequently, since altruism does not impact purchase intention ($p = 0.3280 > 0.05$, with a coefficient of 0.7536), H6 is also rejected, i.e., altruism is rejected as a mediator between attitude regarding cruelty-free cosmetics and the intention to purchase them.

Additionally, no statistically significant interaction was found between cruelty-free labels and altruism on purchase intention ($p = 0.6808 > 0.05$, with a coefficient of -0.0551), resulting in the rejection of H7. Thus, millennials' altruism is not considered a moderator between cruelty-free labels and purchase intention.

In a 95% bootstrap confidence interval, the index of the moderated mediation demonstrated that knowledge and altruism were not statistically different from zero ($CI = [-0.0297; 0.0212]$), meaning that neither variable is a moderator of the model.

In conclusion, this data suggests that while millennials' knowledge of cruelty-free labels does influence the relationship between cruelty-free labels and purchase intention, their attitude towards cruelty-free products and their level of altruism do not have a significant impact on these relationships.

	Coefficient	P-value	LLCI	ULCI
Effect on Attitude				
Knowledge	0.1025	0.1709	-0.0446	0.2497
Logo x Knowledge	0.0217	0.7317	-0.1032	0.1466
Effect on Purchase Intention				
Altruism	0.7536	0.3280	-0.7632	2.2704
Attitude x Altruism	- 0.1095	0.3815	-0.3559	0.1369
Knowledge	- 0.1503	0.1850	-0.3731	0.0726
Logo x Knowledge	0.2692	0.0053	0.0809	0.4575
Logo x Altruism	-0.0551	0.6808	-0.3188	0.2087

Table 7 – Summary of results from macro-PROCESS Model 29.

4.4. Hypothesis testing overview

Hypothesis		**Outcome**
H1	Featuring a cruelty-free logo on cosmetics positively impacts millennials' purchase intention	Significant
H2	Certified cruelty-free logos have a higher impact on millennials' purchase intention over cosmetic products than uncertified (self-claimed) cruelty-free logos	Significant
H3	Millennials' attitude towards cruelty-free products mediates the relationship between purchase intention and cruelty-free labels	Not Significant

H4	Millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and attitude towards cruelty-free cosmetics	Not Significant
H5	Millennials' knowledge of cruelty-free labels moderates the relationship between cruelty-free labels and purchase intention	Significant
H6	Millennials' altruism moderates the relationship between their attitude towards cruelty-free cosmetics and cruelty-free labels	Not Significant
H7	Millennials' altruism moderates the relationship between cruelty-free labels and purchase intention	Not Significant

Table 8 – Summary of results from hypothesis testing.

5. Conclusions and limitations

The final chapter offers a comprehensive summary of the previous analysis results, to address the research questions. It also delves into managerial and academic contributions derived from the insights obtained. Furthermore, potential limitations and recommendations for future research will be presented and discussed.

5.1. Main findings and conclusions

This research investigated how cruelty-free labels on cosmetic products, specifically certified versus self-claimed logos, influence the purchase intentions of millennials. Additionally, the mediating role of attitudes and the moderating effects of altruism and cruelty-free knowledge were analysed. The study utilised an exploratory sequential mixed method, involving a focus group for stimulus development and an online experiment for the main investigation.

Regarding the questionnaire, to understand purchase intention of cruelty-free logos, the dependent variable was manipulated with three different stimuli – a moisturising cream without a cruelty-free logo, and the other two with certified and uncertified logos. Respondents were randomly assigned to each stimulus. Remaining variables were measured with metric multi-item and continuous scales. The main findings, described below, address the research problem, subdivided into two research questions.

RQ1: *How do cruelty-free logos influence millennials' purchase intention regarding cosmetic products?*

This initial research question aimed to understand how the display of cruelty-free logos on cosmetic products impacts millennials' purchase intention. According to Kanchanapibul et al. (2014), this generation exhibits a strong and emotional response to ethical concerns, significantly contributing to the rising demand for ethical cosmetics (Alaouir et al., 2019). Additionally, Sheehan & Lee (2014) acknowledge that the presence of cruelty-free logos had a significant motivating effect on consumers, especially those who champion animal rights.

Indeed, results confirmed a positive impact of cruelty-free labels on purchase intention. Findings in the present study highlighted that the presence of cruelty-free labels, whether certified or uncertified, significantly enhanced purchase intention when compared to the non-cruelty-free alternative.

Another crucial aspect was to investigate whether certified cruelty-free logos exert a more substantial influence on purchase intention compared to self-claimed (uncertified) logos. Despite similarities in objectives, uncertified labels may face challenges in eliciting the same response from consumers as those certified by independent entities since, according to Md et al. (2017) consumers generally prefer certifications conducted independently by third parties over self-claimed labels.

In fact, categorising respondents based on exposure to certified versus self-claimed logos and employing a Mann-Whitney U test revealed a statistically significant difference in purchase intention – the group exposed to certified cruelty-free logos demonstrated significantly higher purchase intention than the rest.

In conclusion, and despite limited existing research on purchase intentions regarding products refraining from animal testing (Sheehan & Lee, 2014), the findings align with expectations: consumers display a marked preference for cosmetic products adorned with a cruelty-free label, and especially those certified by independent entities. This aligns with the rising demand expressed by millennials to purchase cosmetics featuring such ethically certified labels (Alaouir et al., 2019).

RQ2: *How does consumer attitude, knowledge, and altruism influence millennials' purchase intention regarding cruelty-free cosmetic products?*

Attitude:

To address the second research question, the mediating effect of respondents' attitude toward cruelty-free cosmetics in the relationship between cruelty-free labels and purchase intention was assessed, given the belief that attitude leads to intention, which then leads to behaviour (Zollo et al., 2018).

The findings revealed that both the direct and indirect effects of the mediator were not statistically significant. Consequently, the total effect was also determined to be not significant.

Therefore, attitude was not found to be a mediator in the relationship between cruelty-free labels and purchase intention. This outcome suggests that attitude may not be a significant factor, since according to Ajzen (1991), consumers' purchase intentions are influenced by a multitude of factors.

Knowledge:

The present study aimed to analyse the moderator effect of millennials' knowledge of cruelty-free labels on the relationship between cruelty-free labels and attitude, as well as the relationship between cruelty-free labels and intention to purchase these products. Research conducted by Amalia & Darmawan (2023) suggested that, besides the direct impact of knowledge on purchase intention, consumer knowledge also significantly and positively shapes attitudes towards the intention to purchase cruelty-free products.

Results revealed that knowledge was not considered a moderator between cruelty-free labels and attitudes. However, when evaluating if the relationship between cruelty-free logos and purchase intention depends on the level of knowledge of cruelty-free branding, a statistically significant p-value was found, indicating that knowledge can be considered a moderator of the model. This means that millennials could have a higher positive attitude toward cruelty-free cosmetics and higher purchase intention of cruelty-free products if their knowledge on cruelty-free labels is larger.

Altruism:

Lastly, the moderation effect of altruism in the relationship between attitude and purchase intentions, as well as between cruelty-free labels and purchase intention was evaluated. While previous research conducted by Oh & Yoon (2014) suggested that altruism exerts a positive influence on both attitudes towards ethical purchase intentions and a direct impact on purchase intention, results from this research contradicted those conclusions.

The evaluation of the interaction between attitudes towards cruelty-free cosmetics and purchase intention, as moderated by altruism, revealed that altruism is not a moderator of the relationship. Similarly, altruism was not considered a moderator between cruelty-free labels and purchase intention. The absence of significant results in these relationships aids in the conclusion that higher levels of altruism on both relationships do not lead to a higher purchase intention.

Since attitude was not a mediator of the model, altruism consequently is also not a moderator, since according to Alaouir et al. (2019) attitude can be related to consumers' concern for the consequences of their purchase and altruistic motives, where both could influence consumers into becoming increasingly ethical.

Considering that Bar-Tal (1982) stated that even though altruistic behaviour is a form of pro-social behaviour, not all pro-social actions are truly altruistic since one must demonstrate not

only the intention behind the behaviour but also the so-called purity of the underlying motives. Thus, altruism is not a moderator of the relationship between the cruelty-free logos and purchase intentions, i.e. the presented model.

5.2. Managerial and academic implications

This study contributes to the current body of literature as it broadens scientific knowledge in the fields of cruelty-free cosmetics, the millennial generation, and consumer purchase intention.

The findings from this study indicate that incorporating a cruelty-free label on cosmetic products can positively influence consumers' intentions to make a purchase. In addition, this research demonstrated that consumers exhibit greater intention to purchase cosmetic products featuring a cruelty-free label certified by a third party, as opposed to a self-claimed label. To meet the increasing demand, companies are recommended to prioritise cruelty-free alternatives in their product offerings. At the same time, managers should strategically invest in the development of no-animal-testing practices and adhere to regulations to obtain cruelty-free labels certified by independent entities. While some companies may face challenges in affording certification costs, it remains crucial to communicate cruelty-free advantages to consumers.

From a managerial perspective, it is fundamental to examine the purchase intention of cruelty-free logos, as this concept reliably predicts actual purchase behaviour (Morrison, 1979) and assists in forecasting product sales (Newberry et al., 2003).

However, since prior research has delved into consumers' purchase intentions for cruelty-free products, a notable gap has existed in the investigation focused on millennial consumers in this domain. This gap is crucial, considering that Synodinos & Bevan-Dye (2014) emphasise that this generation is inclined to support organisations contributing to communities and the environment in sustainable ways. From an academic and managerial point of view, special attention should be granted to this generation, given their substantial and enduring influence as a dominant market force, underscoring their significance in both the present and the future (Anastasia et al., 2019; Khalek et al., 2015).

5.3. Limitation and future research

While this research has provided valuable insights, it is crucial to acknowledge inherent limitations and constraints associated with the nature of a master's thesis dissertation.

Firstly, participants in the conducted focus group may have felt compelled to provide socially desirable answers to align with group dynamics, potentially introducing biases to the collected data. Additionally, the online experiment sample is restricted due to non-probability sampling and a limited number of valid responses, resulting in a lack of representativeness for the broader population. Future research should aim to involve a larger pool of respondents to ensure more accurate and comprehensive conclusions.

As this research focused on a specific product category, extending investigations to other categories, particularly those emerging in the cruelty-free market, could yield diverse outcomes.

Despite efforts to simulate reality, a fictional brand was deliberately introduced to the experiment to minimize biases. This choice may have influenced participants' responses regarding purchase intention, as their choices might have been influenced not only by the ethical label but also by the characteristics of the fictional brand.

While purchase intention has been frequently used as a proxy for consumer behaviour in academic research (de Cannière et al., 2010), an acknowledged attitude-behaviour gap exists between consumers' stated intentions and their actual purchase behaviour (Carrigan & Attalla, 2001). This implies that participants' real attitudes may not perfectly align with their self-reported answers. Future research should explore actual purchase behaviour to bridge this intention-behaviour gap and gain a deeper understanding of consumers' actions.

Even though Generation Y holds a dominant position as the largest and most influential consumer segment (Dimock, 2019; Arli et al., 2017), it is imperative to direct future research towards emerging generations, notably Generation Z. This strategic shift would be particularly valuable given the expansive reach of the cosmetic industry globally, which is expected to witness further growth (Statista, 2023b).

Lastly, exploring and gaining insights into additional factors that could establish a causal relationship between the previously analysed independent and dependent variables holds significant value for both managerial and academic perspectives. For instance, considering millennials' status as a tech-savvy generation, nurtured in a consumption-oriented society with ready access to technology and information (Noble et al., 2009), an interesting avenue for further analysis would be to understand social media's influence on attitudes towards cruelty-free labels and, consequently, their intention to purchase cosmetics featuring such logos.

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7. Appendices

Appendix 1: Focus group

Hello everyone,

As part of my master's program at Católica Lisbon, I am conducting research for my dissertation. In this focus group, I will be posing a series of questions to gain insight into your personal experiences and perspectives. Your participation is highly valuable and appreciated, therefore please answer honestly and thoughtfully - please note, that there are no right or wrong answers.

The focus group is expected to last about 50 minutes. Your time and cooperation are sincerely valued.

Thank you!

Part 1 (15 min.) – Introductions:

Before we begin, I'd like to invite each of you to provide a brief self-introduction, allowing everyone to become more acquainted with one another.

Part 2 (10 min.) – Initial screening questions:

1. From which category do you purchase most cosmetic products?
    a) **Skin care**
    b) Body care
    c) Hair care

Participants most frequently chose skin care, followed by hair and body care.

2. From the chosen category, name the product that you purchase the most.

Makeup, moisturiser, and shower gel were the preferred choices by the six female participants, while shampoo and moisturiser cream were the ones selected by the two male participants.

3. How often do you purchase the product?

Responses ranged from monthly to every six months.

4. How often do you use the product?

Responses ranged from daily to 4-6 times a week.

Part 3 (15 min) – Choice of a certified cruelty-free logos for the main survey:

1. Do you recognise any of these logos?

Participants recognised at least one or two logos.

2. Which are you most familiar with?

PETA and the Leaping Bunny logos were the main recognisable.

3. What message do you think these logos are trying to communicate?

Participants expressed that the logos communicate that the product is "not tested on animals" and does not harm animals in the whole production process.

4. Which logo would you say is more trustworthy? And less trustworthy?

Participants perceived the "Choose Cruelty-Free" logo as the most trustworthy, while the "Leaping Bunny" logo was considered the least trustworthy.

5. Did you ever deliberately purchase a cosmetic product that was cruelty-free? Which one? Why?

The majority of participants did not intentionally purchase cruelty-free cosmetics; however, the three female participants who did, chose makeup, moisturiser, and serum. Their main justification was a heightened sensitivity towards animal cruelty.

Part 4 (10 min) – Development of an uncertified cruelty-free logo for the main survey:

Scenario: Imagine you are planning to launch a new line of cruelty-free products, at the cosmetic company where you work. You want to convey the cruelty-free aspect to consumers through a logo on your product, but you prefer not to incur the costs of obtaining official certifications. What would the logo look like, and what key design elements or features would you include too clearly communicate the cruelty-free nature of your product?

Summarised overall answers:

- *Image featuring a bunny, symbolising "no harm to animals" in the context of cosmetic products.*
- *Inclusion of "Not tested on animals" and "Cruelty-Free" text associated with the image to convey its meaning.*

Appendix 2: Survey questionnaire

Dear participant,

As part of my master's dissertation, I am investigating consumer purchase intentions on cruelty-free cosmetics – products free from animal testing or animal-derived ingredients – as well as how customers perceive either cruelty free-certified or self-claimed logos.

Your honest and thoughtful responses to this survey are crucial for the analysis. Rest assured, all your answers will be kept anonymous and confidential!

Thank you for your time and collaboration!

Part 1 – Screening questions:

1. Were you born between 1980 and 2000?
    a) Yes
    b) No

(End survey if "No" is selected)

2. Approximately how often do you purchase moisturiser?
    a) Weekly
    b) Every month
    c) Every three months
    d) Every six months
    e) Annually
    f) Never

(End survey if "Never" is selected)

3. Approximately, how often do you use a moisturiser?
    a) Daily
    b) 4-6 times a week
    c) 2-3 times a week
    d) Weekly
    e) Other _____

Part 2 – Manipulation question:

Imagine yourself at a cosmetic store, browsing for a moisturising cream. After exploring various options, you come across the following product:

1st scenario: Moisturiser cream without any cruelty-free logo:

2nd scenario: Moisturiser cream with an uncertified cruelty-free logo:

3rd scenario: Moisturiser cream with a certified cruelty-free logo:

(Randomly display one of the three stimuli)

1. Look closely at the product. Does the product feature a cruelty-free label?
   a) Yes: A certified cruelty-free logo
   b) Yes: An uncertified (self-claimed) cruelty-free logo
   c) No

Part 3 – Purchase intention:

Please indicate your level of agreement with the following statements.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I intend to purchase the product.	○	○	○	○	○	○	○
I have very high purchase interest.	○	○	○	○	○	○	○
I would probably purchase the product.	○	○	○	○	○	○	○

Part 4 – Consumer attitude:

For me, purchasing cruelty-free cosmetic products is

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Good	○	○	○	○	○	○	○
Favourable	○	○	○	○	○	○	○
Desirable	○	○	○	○	○	○	○
Pleasant	○	○	○	○	○	○	○
Wise	○	○	○	○	○	○	○
Positive	○	○	○	○	○	○	○

Part 5 – Consumer knowledge:

Please indicate your level of agreement with the following statements.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I am familiar with cruelty-free logos in the cosmetic industry.	○	○	○	○	○	○	○
I understand the features and benefits of cruelty-free cosmetics.	○	○	○	○	○	○	○
My knowledge about cruelty-free products is better relative to the people that I know.	○	○	○	○	○	○	○
I have great purchasing experience with cruelty-free cosmetic products.	○	○	○	○	○	○	○

Part 6 – Consumer altruism:

I purchase or would purchase a cruelty-free cosmetic product because of

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
The environment	○	○	○	○	○	○	○
Animal welfare	○	○	○	○	○	○	○
Self-satisfaction	○	○	○	○	○	○	○
Social guilt	○	○	○	○	○	○	○
Quality	○	○	○	○	○	○	○

Part 7 – Demographics:

1. What gender do you identify with?
   a) Male
   b) Female
   c) Non-binary
   d) Prefer not to say.

2. What country are you from?

   (Choose from survey list)

3. What is the highest level of school you have completed or the highest degree you have received?
   a) Less than high school degree
   b) High school graduate (high school diploma or equivalent including GED)
   c) Bachelor's degree in college
   d) Master's degree/MBA

e) Doctoral degree or PhD
f) Professional degree

4. What is your current occupation status?
   a) Student
   b) Student-Worker
   c) Employed
   d) Unemployed
   e) Retired
   f) Other _____

5. What is your individual monthly gross income, approximately?
   a) No Income
   b) Less than 500€
   c) 500€ - 999€
   d) 1000€ - 1499€
   e) 1500€ - 1999€
   f) 2000€ - 2499€
   g) 2500€ - 3000€
   h) More than 3000€
   i) Prefer not to say.

Appendix 3: Test of normality (H1)

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Purchase Intention	No logo	0,145	74	0,001	0,952	74	0,007
	Logo (any)	0,090	100	0,044	0,965	100	0,010

Appendix 4: Mann-Whitney U – test statistics (H1)

Test Statistics	
	Purchase Intention
Mann-Whitney U	2454,500
Wilcoxon W	5229,500
Z	-3,807
Asymp. Sig. (2-tailed)	0,000

Appendix 5: Mann-Whitney U – ranks (H1)

Ranks				
Cruelty-free Labels		N	Mean Rank	Sum of Ranks
Purchase Intention	No logo	74	70,67	5229,50
	Logo	100	99,96	9995,50
	Total	174		

Appendix 6: Descriptive statistics

				Statistic	Std. Error
Purchase Intention	No logo	Mean		3,4189	0,16958
		95% Confidence Interval for Mean	Lower Bound	3,0809	
			Upper Bound	3,7569	
		5% Trimmed Mean		3,4034	
		Median		3,5000	
		Variance		2,128	
		Std. Deviation		1,45878	
		Minimum		1,00	
		Maximum		6,67	
		Range		5,67	

		Interquartile Range		2,67	
		Skewness		0,127	0,279
		Kurtosis		-0,998	0,552
	Logo	Mean		4,2900	0,14313
		95% Confidence Interval for Mean	Lower Bound	4,0060	
			Upper Bound	4,5740	
		5% Trimmed Mean		4,3074	
		Median		4,3333	
		Variance		2,049	
		Std. Deviation		1,43130	
		Minimum		1,00	
		Maximum		7,00	
		Range		6,00	
		Interquartile Range		2,00	
		Skewness		-0,276	0,241
		Kurtosis		-0,703	0,478

Appendix 7: Test of normality (H2)

	LogoType	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PurchaseIntention	Uncertified logo	.122	46	.083	.961	46	.129
	Certified logo	.130	54	.024	.951	54	.027

a. Lilliefors Significance Correction

Appendix 8: Mann-Whitney U – test statistics (H2)

Test Statistics[a]	
	PI
Mann-Whitney U	559.500
Wilcoxon W	1640.500
Z	-4.738
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: LogoType

Appendix 9: Mann-Whitney U – ranks (H2)

Ranks

	LogoType	N	Mean Rank	Sum of Ranks
PI	Uncertified logo	46	35.66	1640.50
	Certified logo	54	63.14	3409.50
	Total	100		

Appendix 10: Kruskal-Wallis test

Test statistics

	Purchase intention
Kruskal-Wallis H	35.463
df	2
Asymp. Sig.	0.000

Ranks

	LogoType	N	Mean Rank
PurchaseIntention	.00	74	70.67
	1.00	46	75.07
	2.00	54	121.16
	Total	174	

Appendix 11: PROCESS model 29 output

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 29
    Y  : PI
    X  : LogoType
    M  : Attitude
    W  : Knowledg
    Z  : Altruism

Sample
Size:  174

**************************************************************************
```

```
OUTCOME VARIABLE:
 Attitude

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1700      .0289      .8107     1.6864     3.0000   170.0000      .1718

Model
             coeff         se          t          p       LLCI       ULCI
constant    5.4584      .3664    14.8974      .0000     4.7351     6.1817
LogoType    -.1296      .3102     -.4177      .6767     -.7420      .4828
Knowledg     .1025      .0745     1.3752      .1709     -.0446      .2497
Int_1        .0217      .0633      .3434      .7317     -.1032      .1466

Product terms key:
 Int_1    :        LogoType x        Knowledg

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0007      .1179     1.0000   170.0000      .7317

**************************************************************************
OUTCOME VARIABLE:
 PI

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4687      .2196     1.8354     6.6748     7.0000   166.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     .1932     3.7167      .0520      .9586    -7.1448     7.5312
LogoType    -.2449      .8400     -.2916      .7710    -1.9033     1.4135
Attitude     .5573      .6194      .8997      .3696     -.6657     1.7802
Knowledg    -.1503      .1129    -1.3310      .1850     -.3731      .0726
Int_1        .2692      .0954     2.8227      .0053      .0809      .4575
Altruism     .7536      .7682      .9810      .3280     -.7632     2.2704
Int_2       -.0551      .1336     -.4121      .6808     -.3188      .2087
Int_3       -.1095      .1248     -.8775      .3815     -.3559      .1369

Product terms key:
 Int_1    :        LogoType x        Knowledg
 Int_2    :        LogoType x        Altruism
 Int_3    :        Attitude x        Altruism

Test(s) of highest order unconditional interaction(s):
           R2-chng          F        df1        df2          p
X*W          .0375     7.9676     1.0000   166.0000      .0053
X*Z          .0008      .1698     1.0000   166.0000      .6808
BOTH(X)      .0387     4.1199     2.0000   166.0000      .0179
M*Z          .0036      .7701     1.0000   166.0000      .3815
----------
    Focal predict: LogoType (X)
          Mod var: Knowledg (W)
          Mod var: Altruism (Z)

Conditional effects of the focal predictor at values of the moderator(s):
```

```
   Knowledg   Altruism     Effect         se          t          p       LLCI
ULCI
     3.2500     4.2000      .3988      .2248     1.7741      .0779     -.0450
.8425
     3.2500     5.0000      .3547      .1879     1.8874      .0609     -.0163
.7258
     3.2500     6.0000      .2997      .2201     1.3614      .1752     -.1349
.7342
     4.7500     4.2000      .8026      .1706     4.7051      .0000      .4658
1.1393
     4.7500     5.0000      .7585      .1228     6.1773      .0000      .5161
1.0010
     4.7500     6.0000      .7035      .1723     4.0827      .0001      .3633
1.0437
     6.0000     4.2000     1.1391      .2062     5.5250      .0000      .7320
1.5461
     6.0000     5.0000     1.0950      .1717     6.3781      .0000      .7561
1.4340
     6.0000     6.0000     1.0400      .2129     4.8851      .0000      .6197
1.4603


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Conditional direct effects of X on Y
   Knowledg   Altruism     Effect         se          t          p       LLCI
ULCI
     3.2500     4.2000      .3988      .2248     1.7741      .0779     -.0450
.8425
     3.2500     5.0000      .3547      .1879     1.8874      .0609     -.0163
.7258
     3.2500     6.0000      .2997      .2201     1.3614      .1752     -.1349
.7342
     4.7500     4.2000      .8026      .1706     4.7051      .0000      .4658
1.1393
     4.7500     5.0000      .7585      .1228     6.1773      .0000      .5161
1.0010
     4.7500     6.0000      .7035      .1723     4.0827      .0001      .3633
1.0437
     6.0000     4.2000     1.1391      .2062     5.5250      .0000      .7320
1.5461
     6.0000     5.0000     1.0950      .1717     6.3781      .0000      .7561
1.4340
     6.0000     6.0000     1.0400      .2129     4.8851      .0000      .6197
1.4603

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 LogoType    ->    Attitude    ->    PI

   Knowledg   Altruism     Effect     BootSE   BootLLCI   BootULCI
     3.2500     4.2000     -.0057      .0284     -.0693      .0546
     3.2500     5.0000     -.0006      .0226     -.0483      .0536
     3.2500     6.0000      .0059      .0338     -.0580      .0869
     4.7500     4.2000     -.0026      .0157     -.0361      .0326
```

```
     4.7500     5.0000     -.0003      .0125     -.0257      .0306
     4.7500     6.0000      .0026      .0188     -.0330      .0495
     6.0000     4.2000      .0001      .0205     -.0440      .0470
     6.0000     5.0000      .0000      .0159     -.0321      .0368
     6.0000     6.0000     -.0001      .0248     -.0511      .0567

      Index of moderated moderated mediation
      Index     BootSE   BootLLCI   BootULCI
     -.0024      .0117     -.0297      .0212

      Indices of conditional moderated mediation by W
   Altruism      Index     BootSE   BootLLCI   BootULCI
     4.2000      .0021      .0137     -.0264      .0338
     5.0000      .0002      .0107     -.0230      .0236
     6.0000     -.0022      .0163     -.0404      .0308

************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

Z values in conditional tables are the 16th, 50th, and 84th percentiles.

------ END MATRIX -----
```