



**Linnæus University**

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Bachelor Thesis

# More Than Skin Deep

*An Investigation of Consumer Behavior  
Toward Green Skincare Products in  
the European Context*



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## Abstract

This bachelor's thesis is a quantitative study examining the factors influencing the Green Purchase Intention of (green) skincare among European consumers. The underpinning theory for this paper was the Theory of Planned Behavior and its influencing constructs such as Attitude, Subjective Norm, and Perceived Behavioral Control, as well as various selected determinants such as Environmental Concern, Environmental Knowledge, Health Concern, Injunctive Norm, Descriptive Norm, Electronic Word-of-Mouth, Price Sensitivity, Availability, and Perceived Consumer Effectiveness. The determinants were selected after conducting a literature review that primarily consisted of secondary data in the form of research articles dealing with the same research area of Green Purchase Intention. In order to collect primary data relevant to this study, an online survey in the form of a questionnaire was employed. Overall, 385 respondents from various European countries took part in this study. The survey sample was statistically tested using the SPSS AMOS and SPSS software. This was done in order to utilize the data collected fully. Therefore, two hypothesis models were constructed for this study. The results of Model 1, which were tested using SPSS AMOS denoted that Attitude had a significant relationship with Green Purchase Intention of green skincare products. The results of Model 2, which were tested using SPSS showed that Environmental Concern, Environmental Knowledge, Health Concern, and Perceived Consumer Effectiveness had a significant positive relationship with Green Purchase Intention. Thus, as a result, this study offers findings that manufacturers and retailers of green skincare could use to advance their marketing strategies. Primarily, it can be argued that green skincare brands should focus on targeting consumers who are already environmentally conscious rather than trying to gain over consumers with no environmental knowledge and concern. However, we do not deem our results sufficient enough to allow us to provide further managerial contributions.

## Keywords

*Skincare, green skincare, sustainable skincare, environmentally friendly skincare, Green Purchase Intention, Theory of Planned Behavior, Attitude, Subjective Norm, Perceived Behavioral Control, Environmental Concern, Environmental Knowledge, Health Concern, Injunctive Norm, Descriptive Norm, Electronic Word-of-Mouth, Price Sensitivity, Availability, Perceived Consumer Effectiveness*



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## List of Abbreviations

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<b>Abbreviation</b>	<b>Definition</b>
ATT	Attitude
AV	Availability
P-value	Probability value



## List of Acronyms

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<b>Acronym</b>	<b>Definition</b>
AMOS	Analysis of a Moment Structures
BPC	Beauty and personal care
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN/DF	Minimum Discrepancy Function by Degrees of Freedom Divided
DN	Descriptive Norm
DV	Dependent Variable
EC	Environmental Concern
EK	Environmental Knowledge
EEA	European Economic Area
EFTA	European Free Trade Association
EU	European Union
eWOM	Electronic Word-of-Mouth
H	Hypothesis
HC	Health Concern
GFI	Goodness of Fit Index
GPI	Green Purchase Intention
IN	Injunctive Norm
IV	Independent Variable
LVMH	LVMH Moët Hennessy Louis Vuitton
PBC	Perceived Behavioral Control
PCE	Perceived Consumer Effectiveness
PS	Price Sensitivity
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SN	Subjective Norm
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Square Residual
TBL	Triple Bottom Line
TBH	Theory of Planned Behavior
TLI	Tucker-Lewis Index
US	United States
VOCs	Volatile Organic Compounds



## **1. Introduction**

*In the following chapter, the main field of this study will be introduced. The chapter provides the reader with the background of the skincare industry and the significance of sustainability in retailing, followed by the emergence of green skincare and the regulations within Europe that regard it. In the section of Problem Discussion, the theoretical and managerial implications of green skincare and consumer behavior that regards it are discussed, followed by sections where the research questions and the purpose of the study are presented. The last section of this chapter regards the study's limitations.*

### **1.1. Background**

Since the dawn of civilization, humans have used cosmetics as an essential part of their body care rituals (Banerjee and Samanta, 2022). Thus, cosmetics have become an important component of human society (Banerjee and Samanta, 2022). The first use of cosmetics traces back to ancient Egypt, where it was mostly used for hygiene but also for its health benefits (Amberg and Fogarassy, 2019). Today, over half of cosmetics consumers favor cruelty-free and ecologically friendly products, and buying such products has become more crucial than ever before (King, 2021). Nevertheless, being a responsible consumer can be overwhelming and complicated for many. This might be driven by obstacles that can have different forms. For example, the absence of clear and transparent information and details on the packaging can discourage potential consumers from buying (ibid.). Other obstacles and barriers to purchasing green products are prices, product attributes, certifications, trust, or product availability (Joshi and Rahman, 2015).

#### **1.1.1. Skincare**

According to Gagliardi and Donato (2007), cosmetics refer to any items used for cleaning, enhancing, beautifying, or maintaining the skin, hair, or overall appearance of the human body that have an effect or impact on the body. Cosmetics are personal care products and items, such as skincare, body or hair care, hair color, oral care, and toiletry products (Suphasomboon and Vassanadumrongdee, 2022). Sharma, Gadiya and Dhawanat (2018) define cosmetics as substances used to improve or enhance the external and internal appearance of the body. According to the Cambridge Dictionary, skincare are the “things that you do and use to keep your skin healthy and attractive” (Cambridge Dictionary, n.d.). Furthermore, Surber and Kottner (2016, p. 1) define skincare as products and procedures which are used to “clean, soothe,



restore, reinforce, protect, and to treat our skin and hence to keep it in ‘good condition.’” Thus, skincare products are formulated to care for the skin’s appearance, health, or condition or to treat or prevent different skin conditions. According to Surber and Kottner (2016), skincare is cosmetic products such as creams, cleansers, moisturizers, emollients, humectants, ointments, lotions, gels, and others.

In 2023, the international beauty industry’s worth will be more than 570 billion USD (Statista, n.d.-a). Additionally, in 2023 the global skincare segment will be worth 155 billion USD, and more specifically, in the upcoming four years, it is predicted that its annual growth will be 3.9% (Statista, n.d.-b). In the same year, the worth of the European skincare segment will be 33.85 billion EUR, and in the upcoming four years, the segment is expected to grow by 1.85% annually (Statista, n.d.-c). The MBS Group (2020) interviewed over 80 beauty industry stakeholders and leaders, and the report from the interviews indicated that throughout the Covid-19 pandemic, buyers shifted to bath-and-body and skincare products. It was noted that this shift was caused by consumers’ increased free time, which allowed them to spend more time of their days on their beauty routines (The MBS Group, 2020). Nevertheless, skincare also has self-soothing and therapeutic attributes and has the ability to improve people’s self-esteem or mood (Reddy, 2021). That is beneficial, especially during periods of increased stress and pressure on mental health, such as the period during the Covid-19 pandemic and beyond (Wirkner et al., 2022).

### **1.1.2. Sustainability in Retailing**

For quite a long time, unrestrained and unbridled consumption has entailed dangers that have concerned people, especially the dangers related to environmental sustainability (Wilson, 2013). Diverse academics have expressed concerns about environmental sustainability in their works. Still, sustainable development was not defined before the report by Brundtland was published (1987). Brundtland defined sustainable development as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 41). Sustainability is signified by ideas, behaviors, strategic attitudes, or intentions embracing consideration of the economic, environmental, and social resources that are beneficial for both current and future generations (Vadakkepatt et al., 2021).

Works of other authors and Brundtland's Report (1987) were the foundations on which Elkington’s (1994) concept of the Triple Bottom Line (TBL) was built upon. The TBL concept interconnects three components of sustainability: social,



environmental, and economic (Elkington, 1994). People, planet, and profit represent these three TBL components, and they refer to the considerations of the economic performance and environmental and social impacts of companies (Elkington, 1994). The economic element of sustainable development is related to the capability of businesses to develop and accomplish long-term growth in the challenging and ever-changing market and economy. The central emphasis has historically been on companies' economic performance, for example, on the growth of sales. Regardless, over time enterprises have apprehended that incorporating sustainability objectives also allows for improved growth and profits (Vadakkepatt et al., 2020). Social sustainability is predominantly grounded in ethical philosophy and moral initiatives but also extends to social topics. Social sustainability identifies the human impacts companies have on workers, suppliers, and communities they function in, and it also identifies the impacts these groups have on companies (ibid.). Finally, the last area of sustainable development considers environmental sustainability, which is represented by the planet and regards the environmental impacts companies have on it (Elkington, 1997).

Green approaches and strategies have become integral to business sustainability, and businesses with such approaches and strategies have become paramount in modern manufacturing. The European Commission (2009) created sustainable policies and suggested the Sustainable Consumption and Production Action Plan, identifying the retail sector's important role in sustainable consumption and production. The retail sector has a unique position that permits it to impact and affect both production methodologies and consumption practices (Kotzab et al., 2011). Retailers can unite suppliers and consumers, while retail endeavors can help recycle, reuse, and reduce (Vadakkepatt et al., 2020). As the significance of sustainability in retailing increased (Wiese et al., 2012), numerous organizations embraced the TBL concept and established their development of a sustainable model and their sustainable objectives on it (Wilson, 2013). Sustainability impacts retailing on numerous levels, from design to construction and operation of shopping centers and retail stores. Adopting sustainability visions into a business strategy can help businesses in multiple ways, for example, via brand differentiation from competitors, through the improvement of their brand equity, or via customer loyalty building (Erez, 2019). In retail supply chains, businesses can improve their attractiveness to consumers with the help of integrated sustainability goals (Rakowski, 2018).

Similarly, embracing sustainable practices such as waste reduction, energy saving, or reducing costs for transportation and packaging helps businesses to cut their fixed



and variable costs (Vadakkepatt et al., 2020). Noteworthy trends in the sustainable personal care retailing market contain a growing fondness for ecological products, an overflow in demand for organic and natural ingredients, and an increased environmental concern (Gururaj and Roshan, 2021). According to Steingoltz and De Vestern (2022), countless consumers are keen to shell out an extra 35–40% for sustainable variants of their regular brand of personal care (BPC) products. This tendency has occurred as a significant stimulus for the blossoming of BPC brands, and companies that make strides toward meeting these expectations are encountering tangible benefits and increased value (Steingoltz and DeVestern, 2022).

### 1.1.3. Green Skincare

Unfortunately, advancements in appearance, skin health, but also mental health come at a cost. The beauty industry has been growing significantly, which has had negative impacts on the environment (Martinez, 2022). Vast quantities of cosmetics are used globally, of which numerous contain an abundance of chemical blends used to amplify their characteristics, features, and quality and to prolong their best-before date. These compounds consist of substances such as dyes, additives, stabilizers, fragrances, surfactants, shine, and preservatives (Bilal, Mehmood and Iqbal, 2020). Due to the widespread use of cosmetic products, the active residues from these products, such as bioactive chemicals, enter the environment and accumulate there, which poses a significant risk to both ecosystems but also public health (ibid.).

Further harmful impacts of the cosmetic industry on the environment regard wasteful packaging. The various packaging components are often made of mixed materials that are problematic and hard to recycle (Martinez, 2022). Annually approximately 120 billion single-use packaging units are produced in the cosmetics industry (Morosini, 2021), but only a small percentage of them are recyclable (Martinez, 2022). The United Nations report that merely 9% of plastic waste has been recycled (Morosini, 2021). The cosmetic industry is also accountable for contaminating the environment with microplastics. Microplastics are small microbeads that are used in various products, such as exfoliators or scrubs (Martinez, 2022). Likewise, Volatile Organic Compounds (VOCs) can be found in various cosmetic products. For instance, they are present in hair sprays, deodorants, and fragrances, thus contributing to carbon dioxide emissions (ibid.). It is also crucial to mention that the ingredients used in cosmetics are often dissolved in water. Hence, the increased water consumption that is needed to produce cosmetics is accountable for water wastage (ibid.). Lastly, testing on animals is a cruel practice that is typical for numerous companies in the cosmetic industry (ibid.).



Traditional personal care products can negatively impact consumers' health and the environment. Therefore natural products are more sustainable and a safer cosmetics alternative for their hygiene and health benefits (Kumar et al., 2021). Consumers acknowledge that natural and ecological skincare has rarer side effects than chemical-based skincare products (Jog and Singhal, 2019). The awareness of consumers on the environmental impacts of cosmetic products has been increasing globally (Suphasomboon and Vassanadumrongdee, 2022). Consequently, consumers aware of these effects have adjusted their shopping routines (Simão, Rohden and Pinto, 2022). Consumers' consciousness and mindfulness about the environment, and the increasing trend of green consumption, resulted in the growing popularity of cosmetics that is usually referred to as 'green cosmetics' or just 'green' (Jog and Singhal, 2019; Jaini et al., 2020; Suphasomboon and Vassanadumrongdee, 2022). The rise and launch of new ecological brands in the market followed the growing demand for green products (Jog and Singhal, 2019). Numerous existing brands met this demand by launching new and green products (Jog and Singhal, 2019).

The results of the study by weDo/ Professional revealed that 54% of the study respondents claimed that sustainability is an essential factor for them when buying cosmetic products (King, 2021). For 56% of the participants, recyclable packaging was important, and 44% answered that for them, it was products that are cruelty-free that were important (ibid.). In 2022, the Benchmarking Company conducted a study in the US on 2000 female beauty consumers (Herich, 2022). The results showed that 64% of the study participants stated that sustainability is important in their purchase decisions, while 20% responded that they look for sustainable packaging in the products they purchase, 25% preferred sustainable ingredients, and 38% looked for clean and free of toxic chemicals formulas (Herich, 2022).

Similarly, manufacturers have started adopting eco-friendly manufacturing processes and practices in response to the increasing appeal of sustainable cosmetic products (Martinez, 2022). Some businesses and skincare manufacturers aspire to decrease their impact on the environment by offering skincare products with packaging that is either sustainable or recyclable (Jog and Singhal, 2019; Jaini et al., 2020). Besides, manufacturing products with natural components and ingredients that aim to be more suitable and better both for the environment and consumers' well-being (Jaini et al., 2020). In addition, manufacturers have been influenced to source ethically the raw components they use when manufacturing their products. The influence has come from the consumers who shifted to consumerism and are more inclined towards



sustainable products (Martinez, 2022). Green cosmetic and skincare products usually include organic and natural components, and they avoid utilizing synthetic and artificial additives, chemical agents, or synthetic coloring (Suphasomboon and Vassanadumrongdee, 2022; Chin et al., 2018). The benefits of green cosmetic products include mainly higher safety due to their lower toxicity but even the fact that during their manufacture and production, the use of natural resources was minimized (Chin et al., 2018).

In September 2021, the largest cosmetics producers and manufacturers revealed that they plan to co-develop an assessment and scoring system for the impacts on the environment of the cosmetic products they produce (Morosini, 2021). This beauty consortium comprises companies such as L'Oréal, Henkel, Natura & Co, LVMH, and Unilever. They all consented to team up and cooperate in order to lessen the environmental impacts of their businesses (ibid.). On the contrary, many brands and manufacturers market themselves by proclaiming that they use environmentally friendly and natural ingredients in their products and packaging, whereas in reality, they do not live up to their promises. Such companies engage in so-called 'greenwashing' (Jog and Singhal, 2019).

#### **1.1.4. European Cosmetics Regulations**

The Cosmetics Directive was introduced in 1976 to coordinate cosmetic legislation and to ensure free circulation of cosmetic products within the European Union (EU) (European Union, n.d.; Cosmeticseurope.eu, n.d.). The directive was introduced to encourage the commonly agreed upon safety standards. The EU Cosmetic Regulation (EC 1223/2009) is the primary governing authority for regulating all cosmetic products intended for the EU market (Europa.eu, n.d.-a). The regulation ensures that all cosmetic products that comply with the regulation's requirements are safe for use (ibid.). The EU Cosmetics Regulation sets guidelines for assessing the safety of cosmetic products and their ingredients. Among others, it includes a list of prohibited and approved ingredients (Cosmeticseurope.eu, n.d.). On top of the fact that manufacturers must conduct safety assessments related to ingredients, chemical structure, level of exposure, and the population groups using the given product, they must also comply with other specific obligations, such as providing product information, following ingredients and labeling rules before they can place their products on the EU market (Cosmeticseurope.eu, n.d.).



Although EU cosmetics regulations are restrictive, and despite the popularity of natural or organic ingredients in skincare products, there exists no legal definition of natural or green cosmetic products in the EU (Cosmeticseurope.eu, n.d.). Regardless, all skincare products, including regular cosmetics and those marketed as green, natural, or organic, must comply with The EU Cosmetics Regulation to guarantee the quality and safety of these products (Cosmeticseurope.eu, n.d.).

The absence of a legal definition for natural ingredients emphasizes the importance and significance of using safe concentrations of ingredients. Furthermore, it is essential to ensure that the final combination of ingredients is safe, as per a safety assessment (CBI.eu, 2023). Clear labeling is necessary for cosmetic products to guarantee their safety and to provide information on their ingredients, function, precautions, and justifiable claims (ibid.). Additionally, there are European countries that are not members of the EU, such as the European Economic Area (EEA) and the European Free Trade Association (EFTA) (Efta.int, n.d.-a; Efta.int, n.d.-b). The EEA Agreement aligns EFTA countries' cosmetic regulations of the EU, including the EU Cosmetic Regulation (Efta.int, n.d.-c; Europa.eu, n.d.-b). EFTA countries have adopted the same legal framework as the EU regarding cosmetic products, including the safety assessments mentioned above, ingredient regulations, labeling requirements, and animal testing bans (Efta.int, n.d.-c; Europa.eu, n.d.-b). Nonetheless, it is important to note that there still might exist differences. For instance, in specific requirements such as language requirements for labeling or differences in the list of prohibited and allowed ingredients.

## **1.2. Problem Discussion**

### **1.2.1. Theoretical Problematization**

Most existing literature regarding the theory of Green Purchase Intention (GPI) focuses on investigating the phenomenon using the Theory of Planned Behavior by Ajzen (1991). The theory states that the individual's attitude, the influence of social groups (subjective norm), and the amount of perceived control can predict or explain the intention to do something (Ajzen, 1991). The research by Yadav and Pathak, (2017), Hsu, Chang, and Yansritakul (2017), Liu, Liu and Mo (2019), Ruangkanjanases et al. (2020), Paul, Modi and Patel (2016), Maichum, Parichatnon and Peng (2016) successfully investigated GPI using the theory. Furthermore, there exists only a small number of research where the focus of the study is specifically on green purchase intention toward green skincare, such as the papers by Yang (2017), Chin et al. (2018), Al Mamun et al. (2020) and Ruslim, Kartika and Hapsari (2022).



However, the studies above researched markets within Asian countries, such as Malaysia, India, China, Indonesia, and Taiwan. This is congruent with the findings by Wijekoon and Sabri (2021), where it was revealed that most of the studies on GPI are from Asia. Thus, we concluded that there exists a gap in the existing literature on Green Purchase Intention toward green skincare products for the European market and context.

## **1.2.2. Managerial and Practical Problematization**

Cosmetics industry is large, considering it will reach 570 billion USD in 2023 (Statista, n.d.-a). The international and European skincare segments are expected to grow annually in the upcoming four years (Statista, n.d.-b; Statista, n.d.-c). Furthermore, the skincare industry experienced additional growth during and post-Covid-19 pandemic (The MBS Group, 2020). There is a growing trend in demand for eco-friendly products with natural and organic ingredients (Gururaj and Roshan, 2021). Additionally, consumers have shown that they are willing to pay an extra 35–40% for green personal care products, which fuelled the growth of green skincare products on the market (Steingoltz and De Vestern, 2022). Sustainable manufacturing of green skincare entails many positives for businesses and possibilities to save on expenses and cut costs through saving energy, using sustainable packaging or transportation, and reducing the waste of produce (Vadakkappatt et al., 2020). Moreover, sustainability is one of the most critical issues of the 21st century. More and more consumers concerned about the environment turn to sustainable brands to reduce their own individual negative footprints (Gururaj and Roshan, 2021). Since the trend of sustainable approaches is on the rise, whether in manufacturing, production, and business, but also in the everyday lives of people, the presented paper can be of aid to skincare manufacturers or retailers in their efforts to advance their marketing strategies and to better their focus on the right target groups on the skincare or personal care market.

## **1.3. Research Gap**

There currently exists a research gap on consumer attitudes and behavior that investigates green purchase intention, meaning that studies must include multiple relevant determiners, such as price, attitude toward sustainable brands, and ingredient habits; little is also known about different antecedents, mediators, and moderators, on green cosmetics purchase intentions (Liobikienė and Bernatoniene, 2017; Delistavrou, Tilikidou and Papaioannou, 2023; Siyal et al., 2021; Limbu, Pham and Nguyen, 2022; Maichum, Parichatnon and Peng, 2016). Moreover,



according to Al Mamun et al. (2020), much of the research on the topic of green production and consumption is focused mainly on the topics such as organic food, green hotel stays, and bio-fuel purchase. The authors recognize the scarcity of empirical studies regarding consumer purchase behavior related to green skincare products (Al Mamun et al., 2020). Chin et al. (2018) identified a lack of behavioral research in most of the research regarding green cosmetics. According to the paper by Wijekoon and Sabri (2021) reviewing 108 studies about Green Purchase Behavior from the period 2015 to 2021, even though the quantity of studies investigating consumers' green purchasing behavior is growing, a significant proportion of these studies focus on data from just five Asian countries, such as China, India, Malaysia, Pakistan, and Taiwan. Wijekoon's and Sabri's (2021) findings suggest that developing countries may prioritize these environmentally-friendly purchases to a greater extent than their Western counterparts due to being more affected by the effects of a lack of environmental concern. Therefore, due to the majority of existing literature and studies being focused on the markets in Asia, the topic of Green Purchase Intention of skincare products of Western consumers is a remaining research gap (ibid.).

## 1.4. Research Questions

Q1: What determinants influence Green (Skincare) Purchase Intention among consumers in the European context?

Q1a: What factors influence Green (Skincare) Purchase Intention using the Theory of Planned Behavior?

## 1.5. Purpose

The purpose of this study is to investigate the different determinants influencing Green (Skincare) Purchase Intention (GPI) among consumers in the European context. This will be done using two hypothesis models. The first model groups the determinants based on the Theory of Planned Behavior into three latent constructs and postulates their relationship with GPI. Furthermore, the second model tests the relationship between GPI and the determinants separately. The determinants will be selected after conducting a literature review, primarily consisting of the most relevant quantitative research articles on the topic of green consumer behavior. All in all, this will allow us to research what affects potential consumers the most when considering green skincare purchases.



## 1.6. Delimitations

The environmental area of the TBL concept is fundamental for the presented study as we intended to examine the behavior of the consumers of environmentally sustainable products, their environmental knowledge, concern, and attitudes. Liobikienė and Bernatoniienė (2017) recommend that future researchers of green purchase should consider the categories of green products that are being investigated and choose more specific categories because different factors can affect the purchase of the said green products differently. Therefore, the green products category chosen for this study belongs to the cosmetics category of skincare products, i.e., products used to keep an individual's skin healthy and attractive and products that aim to enhance and support it. Skincare products include cleansers, exfoliators, eye creams, face oils, masks, moisturizers, serums, sunscreens, treatments, and more.

For the purposes of this study, we defined green skincare as any of the products from the list above that is environmentally friendly and minimizes environmental impact through having one or more of the following characteristics:

1. These products include organic, natural, and sustainable ingredients that are free from harmful and synthetic chemicals or additives or are fully plant-based.
2. They are produced using eco-friendly or renewable methods and are sustainably and renewably sourced.
3. They are packed in biodegradable or recyclable packaging.
4. Furthermore, these products are cruelty-free, meaning they are not tested on animals.

Additionally, due to the earlier mentioned research gap on the buying behavior of green skincare consumers in markets outside of Asia, such as European and other Western markets, this study focuses on investigating the consumer behavior of European consumers (Wijekoon and Sabri, 2021), namely the countries within the EU, EEA, and EFTA.

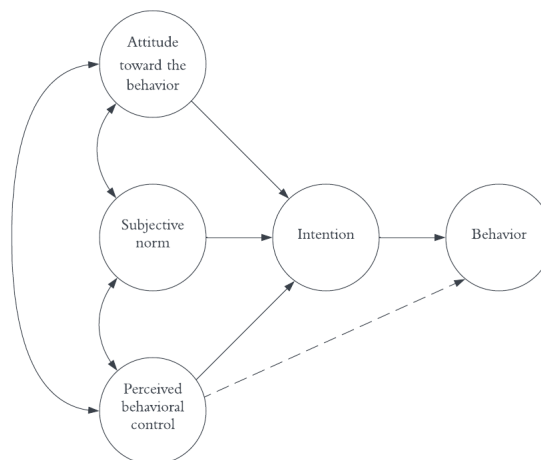
## 2. Literature Review

*This chapter outlines the fundamental theories pertaining to this research, including the Theory of Planned Behavior and Green Purchase Intention and Behavior. Furthermore, various concepts, such as Environmental Concern, Environmental Knowledge, and Health Concern, Injunctive Norm, Descriptive Norm, Electronic Word-of-Mouth, Price Sensitivity, Availability, and Perceived Consumer Effectiveness, are defined and introduced; along with Attitude, Subjective Norm, and Perceived Behavioral Control taken from the Theory of Planned Behavior. The concepts were all utilized in developing the hypotheses.*

### 2.1. Theory of Planned Behavior

The Theory of Planned Behavior, originally developed by Icek Ajzen (1991), offers a comprehensive framework that establishes connections between key determinants such as Attitude, Subjective Norm, and Perceived Behavioral Control with intention and subsequent behavior (refer to Figure 1). Within this theory, the antecedent of Attitude towards a specific behavior encompasses an individual's beliefs concerning that behavior, as outlined by Ajzen (1991). Similarly, the antecedent of Subjective Norm encompasses societal influences on an individual's beliefs regarding a particular behavior (ibid.). Lastly, the antecedent of Perceived Behavioral Control relates to the perceived level of control or the perceived difficulty in carrying out a behavior (ibid.). These three predictors of intention, depending on their situational favorability and intensity, are hypothesized to significantly impact actual behavior (ibid.).

**Figure 1: Theory of Planned Behavior**



Source: Ajzen (1991, p. 182).



## 2.2. Green Purchase Intention

Green Purchase Intention refers to the willingness of a consumer to purchase green products (Joshi and Rahman, 2015). By the same token, Rashid (2009) defines green Purchase Intention as an individual's probability and preference to choose sustainable and environmentally friendly products. Regarding green product consumption, the concept of Green Purchase Intention can be referred to as consumers' determination to behave or act in a particular way (Ramayah, Lee and Mohamad, 2010). According to Chaudhary and Bisai (2018), it can be a predictor of influenced consumer purchase behavior. Moreover, Lasuin and Ng (2014) argue that consumers' belief that their use of green skincare products might have a positive effect on the environment can turn their Green Purchase Intention into green purchase behavior. Previous research showed a significant positive effect of green purchase intention on consumers' green purchase behavior and a strong relationship between consumers' purchase intention and purchasing of green skincare products (Yang, 2017; Chin et al., 2018; Al Mamun et al., 2020; Ruslim, Kartika and Hapsari, 2022).

There have been numerous studies investigating purchase intention with the application of the Theory of Planned Behavior (Wei et al., 2021; Kim and James, 2016; Ketabi, Ranjbarian and Ansari, 2014; Wang, 2014; Gu, 2019). Purchase intention can be defined as plans to purchase goods and services. Specifically, there have also been studies investigating the purchase intention of green products using the Theory of Planned Behaviour (Yadav and Pathak, 2017; Hsu, Chang and Yansritakul, 2017; Liu, Liu and Mo, 2019; Ruangkanjanases et al., 2020; Paul, Modi and Patel, 2016; Maichum, Parichatnon and Peng, 2016). In a study conducted by Yadav and Pathak (2017), it was discovered that the components of Attitude, Subjective Norm, and Perceived Behavioral Control had an influence on the purchase intention of consumers towards environmentally friendly (green) products. Expanding upon this research, Hsu, Chang and Yansritakul (2017) undertook a study where they found direct positive effects of Attitude, Subjective Norm, and Perceived Behavioral Control on Green Purchase Intention, specifically within the context of green skincare products.

In a study conducted by Liu, Liu and Mo (2019), it was revealed that Attitude, Subjective Norms, and Perceived Behavioral Control exhibited a positive association with the purchase intention of green products. Meanwhile, Ruangkanjanases et al. (2020) found that, while the determinants of Attitude and Perceived Behavioral Control demonstrated a positive influence on purchase intention, the positive



influence of Subjective Norms on purchase intention was not supported. Interestingly, the expected positive influence of Environmental Responsibility on Subjective Norms was also not substantiated, potentially due to the prevalent mistrust of sustainability information available on the Internet and the lack of perceiving environmental sustainability as a personal responsibility (ibid.). Similarly, Paul, Modi and Patel (2016) also made a discovery confirming the positive relation between Attitude and Perceived Behavioral Control with the purchase intention of green products. However, a positive relation between Subjective Norm and purchase intention was not found. The explanation for this outcome suggests that the validation of various social groups, such as friends and family, holds little significance for most consumers when contemplating the purchase of green products (ibid.).

## 2.3. Attitude

Ajzen (2001) explains attitude as a predisposition of individuals or objects toward a specific direction. Al Mamun et al. (2020) argued that attitude is a learned manner that is represented by what individuals like or dislike regarding their purchase intention. Among others, attitude includes concepts such as Environmental Concern, Environmental Knowledge, or Health Concern. Although environmental attitudes have been acknowledged to predict buying decisions of green products significantly, their role in Green Purchase Behavior has been proven to be inconsistent (Tan, Ojo and Thurasamy, 2019). Namely, the study outcomes by Al Mamun et al. (2020) revealed that environmental attitudes towards green skincare products, together with Environmental Concern, had a significant effect on Green Purchase Intention. The study by Chin et al. (2018) showed that Attitude is a key factor in Green Purchase Intention and has had a positive effect on it. Contrary to the previously mentioned studies, the results of the research by Tan, Ojo and Thurasamy (2019) revealed that attitude did not have a significant effect on green buying behavior. Thus, the following hypothesis is proposed:

***Hypothesis 1 (H<sub>1</sub>):*** *Attitude has a significant relationship with Green Purchase Intention.*

### 2.3.1. Environmental Concern

Individual environmental concern regards the perception and personal belief that human behavior has impacts and consequences on the environment (Al Mamun et al., 2020) and relates to the level of an individual's emotional involvement in issues



regarding the environment (Lee, 2008). Environmental Concern can predict consumers' engagement in environmentally friendly practices and project into green consumption (Al Mamun et al., 2020). According to the studies by Xu et al. (2022) and Chin et al. (2018), Environmental Concern mostly motivates the adoption of green services and products and has a positive influence on the intention to purchase green skincare products. Individuals' Environmental Concern may influence Green Purchase Intention (Al Mamun et al., 2018; Al Mamun et al., 2020). This is in line with previous research that also showed the positive effect Environmental Concern has on the purchase intention of green products (Maichum, Parichatnon and Peng, 2016; Paul, Modi and Patel, 2016). In light of the presented literature, the following is hypothesized:

***Hypothesis 2 (H<sub>2</sub>):*** *Environmental Concern has a significant positive relationship with Green Purchase Intention.*

### **2.3.2. Environmental Knowledge**

Environmental knowledge (EK) is an important factor influencing buying decisions for green products (Paul, Modi and Patel, 2016; Yadav and Pathak, 2016). According to Maichum, Parichatnon and Peng (2016), environmental knowledge provides concepts and knowledge on how a product interacts with the environment, which can lead to sustainable development. EK refers to having an understanding of the facts and key relationships that contribute to environmental impacts and the responsibility of individuals to act in an environmentally responsible manner, which ultimately leads to sustainable development (Taufique et al., 2016). The knowledge an individual possesses regarding the environment has a significant impact on the way environmental issues are approached and addressed (Maichum, Parichatnon and Peng (2016). In conclusion, as EK increases, consumers become more knowledgeable, which in turn increases the likelihood of a higher purchase intention (Lee et al., 2012; Mahesh and Ganapathi, 2012). Maichum, Parichatnon and Peng, (2016) identified several studies that were conducted previously, which have shown that EK is a crucial variable that has a phase and significant influence on consumer intentions to purchase eco-friendly products. Hence, it is proposed that:

***Hypothesis 3 (H<sub>3</sub>):*** *Environmental Knowledge has a significant positive relationship with Green Purchase Intention.*



### 2.3.3. Health Concern

Health Concern (also referred to as health consciousness) could be defined as a person's willingness to undertake healthy actions and habits (Yen and Hoang, 2023). Various green products tend to be perceived as healthier (Abdulsahib, Eneizan and Alabboodi, 2019). In the context of green skincare, the products feature more natural ingredients and lower toxicity (Bilal, Mehmood and Iqbal, 2020; Kumar et al., 2021). Therefore, for the health concerned individuals, there is a higher appeal for such products, in contrast to regular skincare products that might feature irritating or even harmful ingredients (Shimul, Cheah and Khan, 2022). According to Wijekoon and Sabri (2021), Health Concern is one of the major positive influencing factors for predicting Green Purchase Intention. Furthermore, the paper by Liobikienė and Bernatoniene (2017) also highlighted the importance of Health Concern when analyzing the purchase behavior of green personal care products. Therefore, based on the discussed research, the following hypothesis is proposed:

***Hypothesis 4 (H<sub>4</sub>): Health Concern has a significant positive relationship with Green Purchase Intention.***

### 2.4. Subjective Norm

Subjective Norm is an individual's perception of the opinions and expectations of people who are important to them, this can include family, friends, and other social groups (Ajzen, 1991; Bui et al., 2021; Shimul, Cheah and Khan, 2022). Therefore when a consumer perceives that those people have a positive outlook on a particular product or service, they are more likely to form a positive intention to purchase that product or service (Shimul, Cheah and Khan, 2022). Subjective Norm includes concepts such as Injunctive Norms, Descriptive Norms, and Electronic Word-of-Mouth which are explained in the latter sections. Essentially, Subjective Norm encompasses the idea that we are influenced by the views and attitudes of others when deciding whether or not to engage in a particular behavior (Ajzen, 1991; Bui et al., 2021; Shimul, Cheah and Khan, 2022; Al Mamun et al., 2020). Research has shown that Subjective Norm can influence the purchase of green products (Abdulsahib, Eneizan and Alabboodi, 2019). There is also research showing that Subjective Norm can influence the purchase of green cosmetics (Shimul, Cheah and Khan, 2022). Furthermore, research displaying the influence of Subjective Norm on the purchase intention of green skincare products is also present (Bui et al., 2021; Hsu, Chang and Yansritakul, 2017). Thus, we propose that:



***Hypothesis 5 (H<sub>5</sub>): Subjective Norm has a significant relationship with Green Purchase Intention.***

### **2.4.1. Injunctive and Descriptive Norms**

Injunctive Norm refers to the social pressure, the approval or disapproval, that a person perceives towards certain behaviors, what they think they should do according to the opinions of others (Salmivaara, Lombardini and Lankoski, 2021; Ham, Jeger and Ivković, 2015). The paper by Xu et al. (2022) discovered that Injunctive Norm positively promotes Green Purchase Intention. On the other hand, Descriptive Norm refers to the behaviors that a person perceives to be normally done by others (Xu et al., 2022; Salmivaara, Lombardini and Lankoski, 2021). This can cause someone to think about whether their behavior is congruent with the behavior of others and try to match it if it is not (Xu et al., 2022; Salmivaara, Lombardini and Lankoski, 2021). The paper by Xu et al. (2022), examining the predictors of Green Purchase Behavior of Chinese consumers, found that the Descriptive Norm positively promotes Green Purchase Intention. Furthermore, the study by Ham, Jeger and Ivković (2015) found that Descriptive Norms were statistically significant predictors of green food purchase behavior. However, it is noteworthy to mention that Subjective Norms might have a more significant role in predicting Green Purchase Intention or behavior of consumers in Asian countries because collectivist societies place a greater emphasis on Subjective Norms than the consumers in Western countries, which tend to be more individualistic (Wijekoon and Sabri, 2021). In other words, Western consumers might value the opinions of the social groups that they are part of less, which is why it might be beneficial to investigate Subjective Norms by additionally splitting them into Injunctive and Descriptive Norms. Based on the discussion above, the following hypotheses are put forward:

***Hypothesis 6 (H<sub>6</sub>): Injunctive Norm has a significant positive relationship with Green Purchase Intention.***

***Hypothesis 7 (H<sub>7</sub>): Descriptive Norm has a significant positive relationship with Green Purchase Intention.***

### **2.4.2. Electronic Word-of-Mouth**

Electronic Word-of-Mouth within the context of consumer behavior research could be defined as communication, whether inclusive of positive or negative statements, conducted on the Internet, that is made by the actual, potential, or former customer about a product or a company (Fu, Ju and Hsu, 2015). Within the context of the



Theory of Planned Behaviour, Electronic Word-of-Mouth could be posited to be a force affecting Subjective Norms (Ruangkanjanases et al., 2020). This is because other Internet users sharing electronic Word-of-Mouth online are also able to cause social pressure on other consumers, similar to the pressure that can be caused by an individual's immediate social groups (ibid). According to Ruangkanjanases et al. (2020), previous research has shown that Electronic Word-of-Mouth is able to affect Subjective Norms. Chang's (2015) study showed that Electronic Word-of-Mouth had an impact on Green Purchase Intention, and the results of the study by Rahim et al. (2016) proved that Electronic Word-of-Mouth is critical to persuade consumers purchasing decisions towards green products. In light of this, the following hypothesis is proposed:

***Hypothesis 8 (H<sub>8</sub>):*** *Electronic Word-of-Mouth has a significant positive relationship with Green Purchase Intention.*

## **2.5. Perceived Behavioral Control**

Ajzen explains Perceived Behavioral Control as a perceived ease or difficulty of performing a certain behavior (1991). The concepts of Price Sensitivity, Availability, and Perceived Consumer Effectiveness, which are interpreted below, all fall under the umbrella of Perceived Behavioral Control. As the studies mentioned earlier showed, Perceived Behavioral Control has been found to have a positive direct effect on Green Purchase Intention (Yadav and Pathak, 2017; Hsu, Chang and Yansritakul 2017). Perceived Behavioral Control has been found to be positively associated with Green Purchase Intention even in the research by Liu, Liu and Mo (2019) and Paul, Modi and Patel (2016). Therefore, the hypothesis below is proposed:

***Hypothesis 9 (H<sub>9</sub>):*** *Perceived Behavioral Control has a significant relationship with Green Purchase Intention.*

### **2.5.1. Price Sensitivity**

Consumers can experience an effect known as price sensitivity, resulting from the diverse price offerings of goods or services (Hsu, Chang and Yansritakul, 2017). A research article by Dudu and Edwin (2014) delves into pricing strategies and their influence on consumer purchases, suggesting that consumers are inclined to pay a higher price when it aligns with their perceived value of the product. Moreover, the price increase should correspondingly enhance the benefits or enjoyment derived from the product (Dudu and Edwin, 2014). In another study conducted by Zinoubi (2020), it was discovered that the connection between purchase intention and actual



purchase behavior of eco-friendly products is stronger when price sensitivity is low. Hence, we propose the following:

***Hypothesis 10 (H<sub>10</sub>):*** Price Sensitivity has a significant positive relationship with Green Purchase Intention.

### **2.5.2. Availability**

Kaufmann et al. (2012) refer to availability as the level of difficulty or ease the consumers experience when they obtain or consume a specific product. According to Al Mamun et al. (2020, p. 4), the availability of green products “offers ease of buying, ready comparison among products, and ease of exchange or return of products”. Kapoor, Singh and Misra (2019) argue that Availability can enhance consumers’ awareness or evaluation of green products before purchasing. Al Mamun et al. (2020) claim that when green skincare products are widely available, consumers are more confident to use them. Moreover, according to Dhanwani, Jainani and Ojha (2020), the Availability of green skincare enhances consumers’ intention to use these products. Hence, the hypothesis below proposes that:

***Hypothesis 11 (H<sub>11</sub>):*** Availability has a significant positive relationship with Green Purchase Intention.

### **2.5.3. Perceived Consumer Effectiveness**

Consumers may be concerned about various issues, such as environmental ones. However, simultaneously they can experience helplessness and feel that they can not solve the issues through their own actions. Hanss and Doran (2019, p. 2) define Perceived Consumer Effectiveness as “a consumer’s estimate of his or her ability to contribute to specific sustainable development-related outcomes through specific behaviors”. Perceived Consumer Effectiveness regards the degree of consumer’s level of confidence in achieving desired outcomes that are aligned with their personal values and goals, and it is one of the personal characteristics that are said to be influential in the psychological theories within consumer behavior (ibid). The study by Zhuang, Luo and Riaz (2021) found that Perceived Consumer Effectiveness had a strong positive impact on Green Purchase Intention. Furthermore, Sharma and Dayal (2017) also found that Perceived Consumer Effectiveness had a positive impact on Green Purchase Intention. Thus, it is proposed that:

***Hypothesis 12 (H<sub>12</sub>):*** Perceived Consumer Effectiveness has a significant positive relationship with Green Purchase Intention.



## **2.6. Theoretical Synthesis**

Figure 2 showcases the visualization of the proposed theoretical Model 1, which is directly related to the concepts discussed in the Literature Review chapter. The model is an extension of the Theory of Planned Behavior model. Therefore, it features the latent constructs of Attitude, Subjective Norm, and Perceived Behavioral Control. The construct of Attitude is made up of Environmental Concern, Environmental Knowledge, and Health Concern, which encompass the general understanding and awareness that consumers might have about the topics of environmentalism and sustainability in relation to their green skincare consumption habits. The construct of Subjective Norm is made up of Injunctive Norm, Descriptive Norm, and Electronic Word-of-Mouth; therefore, it incorporates the influence that the perception of other people's opinions might have on the consumer. The construct of Perceived Behavioral Control is made up of Price Sensitivity, Availability, and Perceived Consumer Effectiveness, which are significant factors that either act as promoters or as barriers to green skincare consumption. Consequently, the aforementioned latent constructs of Attitude, Subjective Norm, and Perceived Behavioral Control were used to predict the relationship that they might have with the dependent Green Purchase Intention variable, which was contextualized for this study to regard the purchase intention of green skincare products.

Figure 3 showcases the proposed theoretical Model 2, which consists of nine independent variables, which were picked according to previously discussed theory in the Literature Review, to be the most likely determinants of Green Purchase Intention. This model was created in order to also test the possible determinants of GPI separately, without the constraints of the Theory of Planned Behavior, and to be able to compare or confirm the possible results of Model 1 and Model 2. For better clarity and comprehensibility, Table 1 below includes the list of the proposed hypotheses.



Figure 2: Proposed Hypothesis Model 1

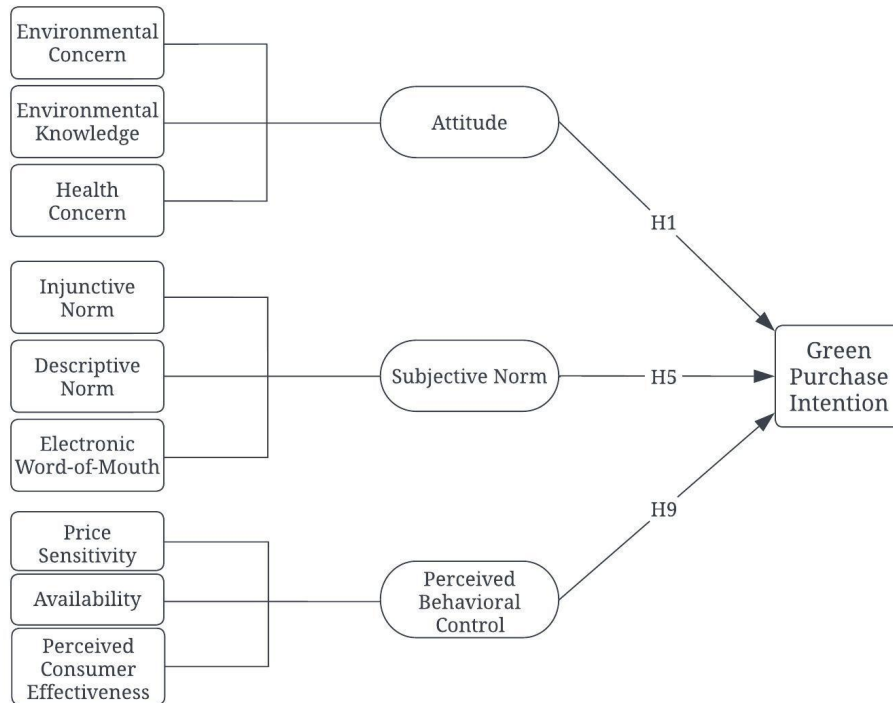
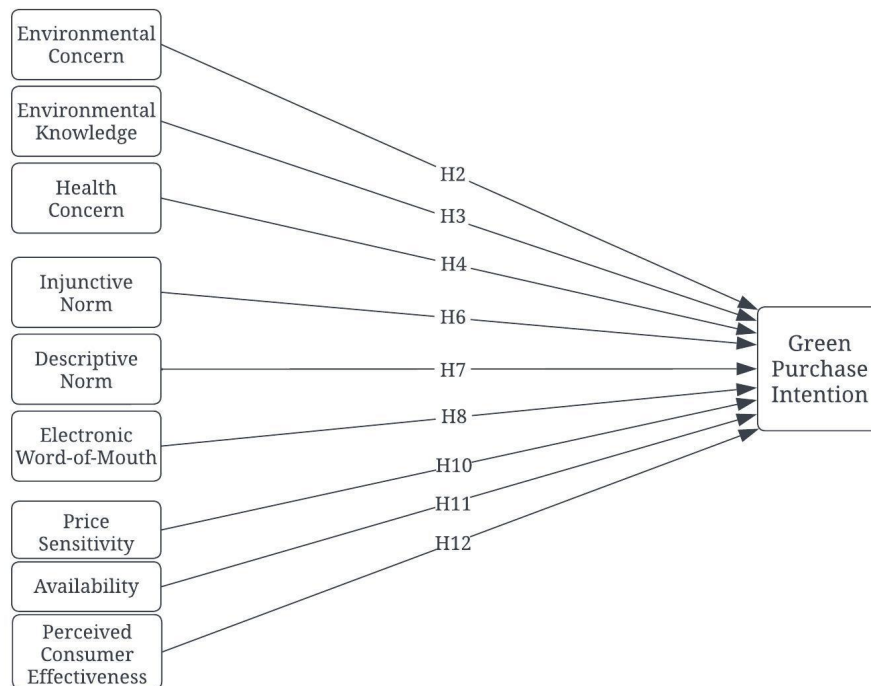


Figure 3: Proposed Hypothesis Model 2





**Table 1: List of Proposed Hypotheses**

<b>Index</b>	<b>Hypothesis</b>
$H_1$	Attitude has a significant relationship with Green Purchase Intention
$H_2$	Environmental Concern has a significant positive relationship with Green Purchase Intention
$H_3$	Environmental Knowledge has a significant positive relationship with Green Purchase Intention
$H_4$	Health Concern has a significant positive relationship with Green Purchase Intention
$H_5$	Subjective Norm has a significant relationship with Green Purchase Intention
$H_6$	Injunctive Norm has a significant positive relationship with Green Purchase Intention
$H_7$	Descriptive Norm has a significant positive relationship with Green Purchase Intention
$H_8$	Electronic Word-of-Mouth has a significant positive relationship with Green Purchase Intention
$H_9$	Perceived Behavioral Control has a significant relationship with Green Purchase Intention
$H_{10}$	Price Sensitivity has a significant positive relationship with Green Purchase Intention
$H_{11}$	Availability has a significant positive relationship with Green Purchase Intention
$H_{12}$	Perceived Consumer Effectiveness has a significant positive relationship with Green Purchase Intention

## **2.7. Summary**

This chapter introduced a number of theories and concepts that were crucial in the development of the 12 presented hypotheses that are to be tested. Leading off with the Theory of Planned Behavior by Ajzen (1991), which gives an explanation of the connection between the concepts of Attitude, Subjective Norm, and Perceived Behavioral Control to the concepts of intention and behavior. While Attitude is influenced by individual beliefs about behavior, Subjective Norm is shaped by societal beliefs about such behavior. Additionally, Perceived Behavioral Control is the individual's level of control in enacting a behavior. This theory suggests that these three intention predictors can account for actual behavior. In other words, an individual's attitudes, social norms, and perceived control can influence their behavior (ibid.).



The following section discusses the theory of Green Purchase Intention, which refers to consumer's willingness to purchase environmentally friendly products (Joshi and Rahman, 2015; Rashid, 2009). Previous studies have shown that Green Purchase Intention can predict actual purchase behavior (Wei et al., 2021; Kim and James, 2016; Ketabi, Ranjbarian and Ansari, 2014; Wang, 2014; Gu, 2019). The Theory of Planned Behavior has been used in numerous studies to investigate the factors that influence purchase intention, including Attitude, Subjective Norm, and Perceived Behavioral Control. While some studies have found that all three factors have a positive influence on purchase intention, others have found that Subjective Norm may not play a significant role.

The role of Attitude in predicting Green Purchase Behavior is inconsistent, with some studies indicating a significant positive effect on purchase intention, while others showing no significant effect (Al Mamun et al., 2020; Tan, Ojo and Thurasamy, 2019; Chin et al., 2018). Existing research on the topic of Attitude was used as a foundation for the development of the first hypothesis: ( $H_1$ ): *Attitude has a significant relationship with Green Purchase Intention*. However, the following concepts of Environmental Concern, Environmental Knowledge, and Health Concern all fall under the umbrella of the theory about Attitude and can also affect it. Therefore, said three concepts aided in the development of Hypothesis 2 ( $H_2$ ), hypothesis 3 ( $H_3$ ), and Hypothesis 4 ( $H_4$ ), which are listed in Table 1.

The following theory relates to the Subjective Norm concept that can be explained as the personal perceptions of expectations and opinions of social groups or people that are regarded as important to the said individual, such as family, friends, or others (Ajzen, 1991; Bui et al., 2021; Shimul, Cheah and Khan, 2022). This theory aided in developing hypothesis 5 ( $H_5$ ), which proposed that: *Subjective Norm has a significant relationship with Green Purchase Intention*. Additionally, Subjective norm consists of and can be affected by the concepts of Injunctive Norms, Descriptive Norms, and Electronic Word-of-Mouth, which were used for Hypothesis 6 ( $H_6$ ), Hypothesis 7 ( $H_7$ ), and Hypothesis 8 ( $H_8$ ), as listed in Table 1.

Lastly, the umbrella theory of Perceived Behavioral Control includes concepts of Price Sensitivity, Availability, and Perceived Consumer Effectiveness. Existing studies have proven that Perceived Behavioral Control has a positive relationship with Green Purchase Intention (Yadav and Pathak, 2017; Hsu, Chang and Yansritakul, 2017; Liu, Liu and Mo, 2019; Paul, Modi and Patel, 2016). Thus, these



studies were employed to develop Hypothesis 9 ( $H_9$ ): *Perceived Behavioral Control has a significant relationship with Green Purchase Intention*. Existing literature on Price Sensitivity, Availability, and Perceived Consumer Effectiveness have all shown to have a positive relationship with Green Purchase Intention. Therefore these concepts aided in the development of the additional Hypotheses 10 ( $H_{10}$ ), 11 ( $H_{11}$ ), and 12 ( $H_{12}$ ). All the hypotheses mentioned above are listed in Table 1.



### **3. Methodology**

*This chapter describes the research procedures that will allow other researchers to repeat and replicate the presented research. The following sections reveal used data sources and the methods employed to obtain them. Moreover, details of the research process are included here, such as the thoroughly planned research design, clearly described sampling unit, along with the selected data collection procedures, and more. Furthermore, reliability and validity are covered here. In addition, this chapter also includes sections regarding ethical and sustainability standards that were applied when the study was conducted. Lastly, variables used as a ground for the research survey are introduced in the last section of the chapter.*

#### **3.1. Research Philosophy**

The presented paper adopts the positivist research philosophy. Positivism could be defined as the research philosophy based on evidence that is scientifically verifiable. In other words, positivism is based on facts that can be observed and quantified (Blumberg, Cooper and Schindler, 2011). For the purposes of this study, a highly structured data collection technique was employed, which is often associated with the positivist research philosophy (Saunders, Lewis and Thornhill, 2019).

#### **3.2. Research Approach**

This study employed a deductive research approach. This approach explores answers to questions such as who, what, when, where, and sometimes how (Blumberg, Cooper and Schindler, 2011). This type of research seeks to characterize or define a particular subject matter by creating a profile of a group of problems, individuals, or events which often involves gathering data and analyzing the distribution and frequency of occurrences of specific research variables (ibid.). The versatile nature of a deductive study makes it a popular choice in business research due to the fact that it can be applied across different disciplines (ibid.). This research approach has many advantages, for instance, being quicker, more focused, or relying on evidence to support hypotheses. However, it can also be seen as rigid, inflexible, or lacking creativity (Shuttleworth and Wilson, 2008). Additionally, the deductive approach is usually more precise and efficient than other research methods, which gives a base for more accurate and reliable results (Creswell and Creswell, 2023).



The deduction was chosen as the objective research approach for this study on consumer behavior and purchase intention for green skincare products because it allowed us to test hypotheses and establish cause-and-effect relationships. The deductive approach provided us with a systematic and objective way to gather insights into the factors influencing consumer behavior and purchase intention for green skincare products.

The presented research approach began with broader assumptions, which were then narrowed down to specific conclusions. This was achieved through data collecting and hypothesis testing, which were derived from existing theories and concepts investigated with the help of a thorough literature review. The conceptions regarded sustainability, green cosmetics, purchase intention, consumer behavior, and other factors. This allowed us to operationalize concepts into independent and dependent variables for statistical analysis and allowed for a possibility to test their causal relationships.

### **3.3. Research Strategy**

In order to accomplish the objectives of this research, a quantitative data collection strategy was utilized with the help of an online survey. Among the advantages of the chosen strategy is the potential it provides for those who prefer to complete the survey anonymously, its inexpensive nature, and the fact that it can be administered to many people at the same time, and it can generate a lot of data (Dolovitz, Buckler and Sweeney, 2008). On the other hand, surveys can also impose some challenges. For instance, the way the survey is constructed can bias the results (ibid.).

An online survey has been chosen as the appropriate strategy due to its efficient character that provided us with the possibility to conveniently collect data from a larger number of participants in a short amount of time. This method was chosen because it allowed us to administer it at a low cost and customize it to meet the specific needs of our research study. Moreover, we chose this method because responses could be easily analyzed using statistical software. For this paper, a questionnaire was conducted to test the hypotheses that were derived from the literature review. The results of the statistical analysis of the questionnaire allowed us to answer the research questions.



### **3.4. Research Method**

The method chosen for data collection plays a significant role in determining the manner of their collection (Blumberg, Cooper and Schindler, 2011). In this study, a mono-quantitative research method was used, meaning that this study solely relied on quantitative methods. This method was employed as the data collected through the survey provided us with numerical empirical input. The rationale behind choosing the said perspective stems from the previously mentioned positivist epistemology that assumes the existence of an objective reality that can be quantified—expressed in numbers (Saunders, Lewis and Thornhill, 2019). Moreover, the quantitative method was aligned with the phenomenological view that focuses on an individual's perceptions of reality.

This method has its advantages, such as the capability to provide objective and precise data or its ability to allow for a straightforward analysis of large sets of data (Blumberg, Cooper and Schindler, 2011). However, it also has some disadvantages, such as the risk of oversimplifying complex issues, an absence of depth in understanding of the studied phenomenon, or its inability to explore participants' perspectives and experiences (ibid.). After considering the research problem's nature and the research questions, the mono-quantitative method was chosen as the most suitable for this study. It was selected to gain a better understanding of consumer behavior in relation to the purchase of green skincare products. For the purposes of this paper, the mono-quantitative method was used to examine the relationships between the variables that were identified in a thorough literature review. The variables were measured numerically (ibid.) and analyzed with the use of the SPSS AMOS software (Saunders, Lewis and Thornhill, 2019; IBM Corporation, n.d.).

### **3.5. Research Design**

An explanatory research design was used as a blueprint for answering the research questions and meeting the set objectives of this study. Explanatory design is used to explore why something occurs when limited information is available (George and Merkus, 2023). We chose this investigative design because it aims to understand the reasons behind a particular phenomenon (ibid.). Although there is existing data on the subject of consumer behavior toward the purchase of green skincare, the specific relationships we wanted to explore have not been extensively researched. The presented research consists of variables that were analyzed in order to establish the possibility of their causal relationships (Saunders, Lewis and Thornhill, 2019).



### **3.6. Type of Data**

Data can be defined as facts that are taken from the study's environment and are presented to the researcher (Blumberg, Cooper and Schindler, 2011). For the purpose of the study, both primary and secondary data were collected. The primary data consisted of the empirical data that it produced with the help of a questionnaire. The secondary data consisted of the research on the existing theory gathered from peer-reviewed scientific journals.

#### **3.6.1. Primary Data**

Primary data are used to allow the researcher to have control over errors and for their proximity to truth (Blumberg, Cooper and Schindler, 2011). The primary data for this study were collected using a questionnaire including 4 multiple options questions and 30 Likert Scale questions, operationalized with the help of the research gathered in the Literature Review. The questionnaire was constructed using the services of Google Forms (Google, n.d.-a). It was distributed using judgemental and convenience sampling methods. The data were tabulated using the services of SPSS and analyzed using Structural Equation Modeling (SEM) tool SPSS AMOS (IBM Corporation, n.d.). The data in the charts were presented using the visualization tool Canva (Canva, n.d.). Figures and models were created with the help of the web-based diagramming application Lucidchart (Lucidchart.com, n.d.).

#### **3.6.2. Secondary Data**

To gain insights on the most relevant theories and concepts on the research topics of consumer behavior and green purchase and to aid in the forming of the hypotheses, the secondary data collected for this research paper was gathered from various bibliographical databases such as Google Scholar, Emerald Insight, OneSearch, ResearchGate, ScienceDirect, Taylor & Francis, or PubMed (Google, n.d.-b; Emerald, n.d.; Lnu, n.d.; ResearchGate, n.d.; ScienceDirect, n.d.; Tandfonline, n.d.; PubMed, n.d.). Articles from peer-reviewed journals, mostly from the last decade, were used for research, with the exceptions of references to widely used and established theories by the original authors, such as the work by Ajzen (1991). Furthermore, the services of an online tool ResearchRabbit, were used, which aided in finding connections between relevant research articles (ResearchRabbit, n.d.). The Zotero reference management program was used to collect, organize and annotate bibliographic data and research materials that were used when conducting this paper. (Zotero.org, n.d.).



### 3.7. Sampling

Sampling relates to the identification of the target population and sample for the study (Blumberg, Cooper and Schindler, 2011). In the case of this study, sampling means that it needs to be determined who and how many people are to be interviewed. A sample is a selected part of the target population that represents said population (ibid.). The population of this research was composed of consumers from 31 European countries within the EU, EEA, and EFTA. The data collection was held from May 1st, 2023, to May 7th, 2023, and the aim of reaching 385 respondents was achieved. Prior to the distribution of the full-scale survey, a pilot questionnaire was carried out in order to pre-test our survey instrument. Due to limited time resources, the questionnaire was pilot tested with 10 respondents, which, according to Saunders, Lewis and Thornhill (2019), is a sufficient pilot-testing population for a student questionnaire. Pilot testing was done to evaluate and refine our questionnaire to ensure the respondents would not face any issues when participating (Saunders, Lewis and Thornhill, 2019). Specifically, it ensured that the final survey contained questions that were error-free and easily comprehensible and that the survey did not require too long to complete.

The presented study employed both convenience and judgemental sampling methods. Convenience sampling is a non-probability method where the selection of respondents is unrestricted (Blumberg, Cooper and Schindler, 2011). It is the cheapest and easiest sampling design, and it is said to be the least reliable. Nevertheless, it is still a useful procedure (ibid.). In convenience sampling, the study participants are selected based on their accessibility and availability, and this sampling method is usually used when the researchers dispose of limited resources and time (Aransiola, 2023). On the other hand, judgemental sampling is a purposive design that conforms to certain criteria (Blumberg, Cooper and Schindler, 2011). This sampling design selects the sample based on the researchers' judgment and the participants' characteristics or qualifications that are tailored to the objectives of the research (Aransiola, 2023). The advantage of this method is that it is relatively easy, quick and cheap to implement (ibid.). According to Saunders, Lewis and Thornhill (2019), the results of judgemental sampling cannot be considered statistically representative of the chosen population as it may result in inconsistencies in the sample selection (Aransiola, 2023). Furthermore, the method is also prone to bias (ibid.). However, compared to convenience sampling, judgmental sampling can be seen as more accurate, focused, and representative of the studied population, and it can be more costly to implement and time-consuming (Aransiola, 2023). The benefit of combining two sampling methods is that the advantages of one method can make



up for the shortcomings of the second method. While the convenience sampling method is easy and cheap to do, not all respondents were of interest to us because of the specific topic of this research. Therefore the judgemental sampling made up for the lack of that. The disadvantage of using mixed sampling methods is the risk of decreased reliability and transparency (Saunders, Lewis and Thornhill, 2019). Studies conducted using mixed sampling methods have lower generalizability because the results are often not representative of and applicable to the general population. Additionally, using mixed sampling methods makes it difficult to obtain consistent results in case the study is to be replicated in the future (ibid.).

Therefore, with previously discussed considerations in mind, our sampling procedure started with disseminating the online questionnaire via social media platforms such as Facebook and Instagram. This was done using their respective public posting and messaging features. The survey was properly introduced, stating our intentions and the voluntary nature of participation to ensure that it was aligned with our ethical considerations. The webpage address included in the posts led the potential respondents directly to the Google Forms page of the questionnaire, where its introduction and the questions were presented (see Appendix A). Additionally, the survey was shared multiple times with the aim of enhancing its reach and maximizing the opportunity for individuals to encounter and engage with it.

Furthermore, the online research service Prolific (Prolific.co., n.d.) was used to reach out to selected respondents from the 31 EU, EEA, and EFTA nations. Among the main advantages of using Prolific is the speed with which the service can find trusted survey participants for researchers (Prolific.co, 2023). Moreover, Prolific allows researchers to target niche population segments (Prolific.co, 2023). Another advantage is that the findings collected through online testing by Prolific are comparable to laboratory testing, despite the different conditions (Prolific.co, 2023). Lastly, Prolific offers a participant pool older than 18–23 years, and the participants have a wide range of educational levels and employment experience (Prolific.co, 2023). However, using the services of Prolific also entails some limitations. One of Prolific's disadvantages is the risk of the so-called Rapid-responder bias, which regards the first-come, first-serve convenience sampling Prolific uses (Prolific.co, 2023). This simply means that some of the responses might come from respondents who happen to be online at the specific time of the questionnaire launch. Nonetheless, Prolific has various mechanisms to reduce the Rapid-responder bias via fair distribution of study places among their active participants (Prolific.co, 2023). Therefore, in order to reduce these limitations, Prolific's sampling tools were used,



such as limiting respondents geographically and gender distribution-wise. Additionally, each respondent was individually screened by measuring their response time and compliance with additional instructions (such as properly submitting a survey completion code). This helped to remove unfit respondents that exhibited suspicious activity.

Lastly, to meet the desired statistical constraints for this research, a minimum of 385 respondents was required to reach the 95% confidence level with a margin of error of 5%. To determine the target sample size, an online tool Sample Size Calculator was used (Calculator.net, n.d.). The population proportion was set to 50%, and the population size was left blank (ibid.). This is due to being unsure of the exact population size of green skincare consumers. According to the paper by Meysamie et al. (2014), web-based statistical calculators are viable in determining the target sample size if they allow for the adjustment of the population proportion, which the aforementioned online tool allows for.

### **3.8. Survey Design**

Questionnaires are one of the most commonly used tools in survey research (Dolovitz, Buckler and Sweeney, 2008). Given that a deficient and poor design of a questionnaire could result in potential problems that can eliminate the study's validity and reliability, all 34 questions were composed and framed in a comprehensible and unambiguous manner to prevent said problems. The survey employed a questionnaire with close-ended and pre-structured questions as they tend to be easier for the respondents to answer, and they are also easier to analyze (ibid.). A 6-point Likert Scale was used for questions 2 to 31: Strongly Disagree, Disagree, Slightly Disagree, Slightly Agree, Agree, Strongly Agree. The Likert scale is a popular and effective tool because it allows for measuring complex attitudes or opinions in a relatively simple way (Bhandari and Nikolopoulou, 2023). We chose the Likert scale due to its versatility and because it can be used to measure a wide variety of constructs, such as attitudes, beliefs, behaviors, and emotions (Jebb, Ng and Tay, 2021).

The scale allows for a greater degree of nuance than simple yes or no questions, as respondents can choose from a range of answer options, typically ranging from strongly agree to disagree strongly (Bhandari and Nikolopoulou, 2023). This allowed us to capture more detailed information and more accurately measure the intensity of attitudes or opinions (ibid.). Additionally, Likert scales have been shown to have



high reliability and validity when constructed and administered properly (Louangrath, Sutanapong and Chanoknath, 2018). The questionnaire items presented in Table 2 were adapted from existing studies with minor modifications. To ensure consistency and to combat and prevent survey bias, the questions were randomized (Chung, 2019).

### **3.9. Data Analysis**

The collected data were tabulated using the SPSS Statistics program (IBM Corporation, n.d.). The Likert scale survey responses were labeled using the “Item” labels presented in Table 2. The data were codified numerically, ranging from 1 for “Strongly Disagree” to 6 for “Strongly Agree”. However, the response items for the variable Price Sensitivity were reverse-coded to match better the questions used during the questionnaire. Therefore, “Strongly Agree” was interpreted as a 1, and “Strongly Disagree” as a 6. Then the data were first tested using Confirmatory Factor Analysis (CFA) using SPSS AMOS and eventually converted into scales appropriate for the testing using path analysis. Meanwhile, for inferential testing using SPSS, the survey response items were transformed using the compute variable function in order to combine various response items under the same theoretical construct into one. For instance, EC1, EC2, and EC3 were transformed into EC.

### **3.10. Validity**

Validity refers to one of the essential criteria of research (Bell, Bryman and Harley, 2022), and it can be explained as the collection of data that is accurate and related to the studied topic (Saunders, Lewis and Thornhill, 2019). Validity is achieved with the help of a properly designed questionnaire so that it effectively measures the concepts of interest (ibid.). In other words, validity means that the study measures what it claims to measure.

Thus, to achieve the desired level of validity, the questionnaire was composed in a design that was user-friendly for the respondents, and careful consideration was given to the logic, meaning, intent, and content of each survey question (Bell, Bryman and Harley, 2022). The process of validating the questionnaire included ensuring that the questions in the survey were accurate and reliable but also effective in measuring what they were intended to measure. We took the following steps to achieve the validity of the said questionnaire. After defining our research questions, we conducted a literature review that helped us to identify previous studies with validated questionnaires which provided us with a solid foundation upon which we



built our questionnaire. Then, variables were clearly defined with the help of the hypotheses developed in the Literature Review. These variables were operationalized in order to be measured, which helped us to develop relevant questions that accurately measured the said variables. The questionnaire included concise, unambiguous, and clear questions, while biased or leading questions were intentionally avoided so that the results' validity would not be affected.

Furthermore, the measured responses were further evaluated by using Confirmatory Factor Analysis (CFA) to increase the validity of the results and to reduce the possibility of type I and type II errors. Therefore, due to the employment of CFA, as well as the operationalized variables being based on other deliberately similar quantitative studies investigating green consumer behavior, we chose not to use Cronbach's alpha. This is additionally motivated by multiple studies contesting its use and suggesting either Structural Equation Modeling or the use of different omega coefficients (Flora, 2020; Hermosilla and Alvarado, 2016; Cho and Kim, 2015; Sijtsma, 2009).

### **3.11. Reliability**

Reliability in research means consistency of the research outcome (Saunders, Lewis and Thornhill, 2019). It refers to the accuracy of the methods of data gathering (Dolovitz, Buckler and Sweeney, 2008). Thus, this research paper intended to produce consistent results, which, if conducted under different conditions and at a different time or with different samples, will produce the same results (Saunders, Lewis and Thornhill, 2019). In order for this study to obtain reliable results that are representative and unbiased of the study population, a research sample with a relevant profile and size was carefully chosen. The reliability of this study was increased by ensuring that the research sample was representative and large enough to produce statistically significant findings (Indeed.com, 2023). This was achieved with the reached number of 385 respondents. The employed convenience and judgemental sampling methods affected the study's reliability. It is because it would be difficult to recreate the study and achieve the same sample from the two different sampling populations. Additionally, the study population consisted of respondents from multiple European countries, which would also make it difficult to recreate the presented study in the future.



### **3.12. Ethical Considerations**

It is important that researchers are aware of the ethical or moral issues that can arise during the completion of a study, especially in the context of research conducted with the help of computers and internet technology (Dolovitz, Buckler and Sweeney, 2008). Thus, throughout the completion of this study, a number of procedures and principles for ethical conduct were considered and followed. Namely, prior to the collection of the empirical data, the survey respondents were provided with details about the purpose and content of this study to give the participants understanding and background about the studied topic. Information about the methods used was also provided beforehand to the participants. Before proceeding with collecting the responses, permission for survey distribution was secured and informed consent from the participants was acquired. The participants had the right to withdraw from the study at any time.

The individual rights of respondents were respected through the completely voluntary nature of the study and the anonymous participation in it. The principle of confidentiality and anonymity of the collected data were maintained throughout the whole process. Participants' email addresses were not collected and recorded, and the collected data were not and will not be disclosed to third parties as they were accessible only to authorized individuals. Privacy and anonymity were preserved not only to protect the privacy of the respondents but also due to the fact that anonymous participants tend to be more honest and complete in their answers when assured of confidentiality (ibid.). Therefore, the questions regarding respondents' age, gender identity, and education level also offered the option not to disclose these details.

Moreover, by following the equity principles (ibid.), this study did not tolerate any form of discrimination, whether based on age, ethnicity, disability, sexual orientation, or social class. No emotional, physical, or social harm in any form, such as coercion or manipulation, was caused to the respondents. The primary data were and will not be altered in any way, and all the data sources were clearly referenced. The results were reported, analyzed, and interpreted honestly, truthfully, and objectively. Moreover, the collected data were reported accurately and fully and were not falsified. Additionally, every contributing and collaborating person was acknowledged.



### 3.13. Sustainability Considerations

This bachelor thesis regards consumer behavior in relation to green skincare products. Since sustainability is an ongoing and life-threatening issue, we deem it to be one of the most important discourses happening in the 21st century. It is a very multifaceted topic. Thus, we are aware that we researched one out of many sustainability facets with this project—sustainable consumption. However, it is an important topic nonetheless, considering that for most of us, consumption is one of the only viable tools that we have that allows us to either have a positive or negative impact on the planet. Therefore, this study was designed to be sustainable using the Triple Bottom Line (TBL) perspective by Elkington (1997) as a blueprint and by incorporating the following three TBL aspects:

*1. Economic sustainability* – the economic impact of the thesis topic and research methods were considered when conducting this paper. This thesis focuses on the topic of green skincare that can assist in economic sustainability in several different ways. Namely, some green skincare producers reduce their packaging waste and costs associated with manufacturing and shipping, which can help to increase their profit margins and reduce the overall cost of their products (Rocca et al., 2022). Furthermore, using sustainable ingredients or ingredients that were sustainably sourced can also result in lower costs for these manufacturers (ibid.). Meeting the growing demand for environmentally-friendly skincare products can lead to a sustainable market for the producers of these products, which can help to drive down costs associated with their production and distribution (ibid.). This thesis aims to contribute with results that can aid in creating economically viable and sustainable solutions for green skincare producers and retailers in the future. Additionally, this research was conducted in a way that allowed us to optimize the costs needed for its completion. The paid service of Prolific (Prolific.co, n.d.) was used for a part of the data collection which the authors financed. The costs for the data collection of the remaining part were further minimized through the chosen method of convenience sampling.

*2. Social sustainability* – the main topic of this thesis is a current and relevant societal concern worldwide. The results of this paper can provide socially valuable insights into green skincare consumers' preferences that can help manufacturers and retailers in implementing and improving their green practices or initiatives and thus increase the purchasing intention of consumers towards green skincare products. The study can support the worldwide trend of protecting the environment by promoting socially responsible consumer behavior. Furthermore, when conducting this research,



the authors followed the principles of social responsibility. As mentioned earlier, the authors acted in a socially responsible manner towards the respondents during the collection of the empirical data by respecting and following the principles of research ethics.

3. *Environmental sustainability* – the main field of this study revolves around environmentally friendly skincare and is thus directly connected to the topic of environmental sustainability. Many green skincare products are made from sustainably sourced natural ingredients, which helps to reduce the environmental impact of their production and which encourages the use of sustainable farming practices. Green skincare products are often made using organic or non-toxic ingredients that are safer both for human health and the environment (Dini and Laneri, 2021). This reduces or prevents the release of toxic substances during the manufacturing process. Furthermore, green skincare manufacturers often use environmentally friendly packaging or even opt for packaging-free alternatives through which they reduce waste and minimize their environmental impact (Waugh, 2021). Moreover, many green skincare products are biodegradable and can be naturally decomposed, which does not contribute to environmental pollution (Rocca et al., 2022). Lastly, green skincare businesses often reduce their carbon footprint through local sourcing, using renewable energy, and reducing their transportation emissions (ibid.).

Moreover, to minimize the waste impact associated with this study, efforts were made to adopt a digital approach throughout the research process. The utilization of online databases and access to scholarly sources, including theoretical references, journals, and books, allowed for reduced waste generation. Additionally, the local Linnaeus University library in Kalmar facilitated the availability of necessary resources either through digital means or via loan (in regard to books), further contributing to the eco-conscious approach. The deliberate choice of research methodology was driven by its inherent advantages in terms of environmental impact. Unlike conventional approaches, such as case studies that often necessitate travel for data collection, the selected methodology eliminated the need for authors to embark on physical journeys, thereby significantly reducing associated environmental burdens.



### 3.14. Group Work Process

Given that working on a thesis project is not a linear process and because there are always tasks within the project that need to be reorganized and rethought, both authors worked dynamically throughout the whole course of this thesis. Since we already have past experience working on a bachelor thesis project together before, we remained adaptable despite our changing schedules during the process. We achieved this through our adamant communication using technology (text communication, e-mails, Zoom meetings), but also in person, which we used to track and discuss our progress.

In order to overcome time limitations towards the end of the project, Dana focused more on the texts in the chapters of Introduction, Literature Review, and Methodology and on polishing the paper layout- and error-wise, whereas Mark focused more on inferential statistics and tables. Additionally, we discussed the paper holistically for the paper to have a unified academic language. Overall, we can claim that both of the authors handled each part of the paper, and the work was split fairly equally between both of us. That is also the reason why the authors chose to work together again in the first place.

### 3.15. Operationalization

According to Blumberg, Cooper and Schindler (2011), operationalization is the process during which concepts and constructs are transformed into measurable variables that are suitable for testing. Saunders, Lewis and Thornhill (2019, p. 810) define operationalization as a “translation of concepts into tangible indicators of their existence”. Operationalizational steps are taken to structure the research process so that it helps to answer the research questions and achieve the purpose of the paper. In other words, operationalization is the steps that were taken in order to answer the objectives of this research. Especially in the context of quantitative studies, it is essential to precisely and accurately define the studied variables (Bhandari, 2022). When such definitions are absent, there is a risk that the study will not measure relevant concepts or that it will apply methods inconsistently (ibid.). Thus, first, the main concepts were identified, and variables that represent each of the said concepts were chosen. Then, indicators for each of the variables were selected. These concepts, variables, and indicators are included in Table 2.



**Table 2: Questionnaire Operationalization Table**

	Item	Question	Measurement	Sources
<b>Variable</b>	<b>Environmental Concern (EC)</b>			
	EC1	Q18	I am worried about environmental issues, like climate change, and that influences the skincare products I purchase.	Tan, Ojo and Thurasamy (2019)
	EC2	Q24	I am buying less to help protect the environment.	Maichum, Parichatnon and Peng (2016)
	EC3	Q6	I think there should be stronger laws to help protect the environment.	Paul, Modi and Patel (2016)
<b>Variable</b>	<b>Environmental Knowledge (EK)</b>			
	EK1	Q4	I know a lot about environmental issues.	Jaiswal and Kant (2018)
	EK2	Q19	I know how to choose skincare products that reduce the amount of landfill waste, such as products with eco-labels.	Kamalanon, Chen and Le (2022)
	EK3	Q27	I want to know more about how the skincare product was made and its impacts on the environment before I purchase it.	Maichum, Parichatnon and Peng (2016)
<b>Variable</b>	<b>Health Concern (HC)</b>			
	HC1	Q29	I worry a lot about my health.	Yen and Hoang (2023)
	HC2	Q7	I like green skincare because it is healthier for my skin.	Kapoor, Singh, and Misra (2019)
	HC3	Q5	I carefully choose the skincare products I buy and use, to make sure that they are safe for me.	Yen and Hoang (2023)



**Table 2: Questionnaire Operationalization Table (Cont.)**

	Item	Question	Measurement	Sources
<b>Variable</b>	<b>Injunctive Norm (IN)</b>			
	IN1	Q8	Most of my family thinks that I should use green skincare products.	Xu et al. (2022)
	IN2	Q25	Most of my friends think that I should use green skincare products.	Xu et al. (2022)
	IN3	Q13	Most of my colleagues (at work, at school) think that I should use green skincare products.	Xu et al. (2022)
<b>Variable</b>	<b>Descriptive Norm (DN)</b>			
	DN1	Q30	Most of my family members use green skincare products.	Xu et al. (2022)
	DN2	Q17	Most of my friends use green skincare products.	Xu et al. (2022)
	DN3	Q23	Most of my colleagues (at work, at school) use green skincare products.	Xu et al. (2022)
<b>Variable</b>	<b>Electronic Word-of-Mouth (eWOM)</b>			
	eWOM1	Q2	I often gather information about skincare products from reviews made by other consumers before buying.	Simanjuntak et al. (2023)
	eWOM2	Q10	I engage in online discussions regarding skincare to find out about the best products.	Simanjuntak et al. (2023)
	eWOM3	Q15	Skincare product reviews from other consumers give me the confidence to buy those skincare products.	Simanjuntak et al. (2023)



**Table 2: Questionnaire Operationalization Table (Cont.)**

	Item	Question	Measurement	Sources
<b>Variable</b>	<b>Price Sensitivity (PS)</b>			
	PS1	Q11	When I choose a skincare product, price is the most important factor.	Yue et al. (2020)
	PS2	Q22	I rely on the price to judge the worth of something I buy.	Yue et al. (2020)
	PS3	Q21	When I buy a skincare product, I will select the cheapest.	Yue et al. (2020)
<b>Variable</b>	<b>Availability (AV)</b>			
	AV1	Q12	My local stores have a variety of green skincare products to choose from.	Al Mamun et al. (2020)
	AV2	Q9	I prefer to shop for green skincare products online rather than visiting local stores.	Al Mamun et al. (2020)
	AV3	Q16	I prefer buying green skincare products online where there are more options than at local stores.	Al Mamun et al. (2020)
<b>Variable</b>	<b>Perceived Consumer Effectiveness (PCE)</b>			
	PCE1	Q14	I can protect the environment by buying skincare products that are friendly to the environment.	Jaiswal and Kant (2018)
	PCE2	Q31	Each person can have an effect on the environment, so my actions can make a difference.	Jaiswal and Kant (2018)
	PCE3	Q20	Each person can have a positive effect on the environment by purchasing environmentally friendly skincare products.	Jaiswal and Kant (2018)



**Table 2: Questionnaire Operationalization Table (Cont.)**

	Item	Question	Measurement	Sources
<b>Variable</b>	<b>Green Purchase Intention (GPI)</b>			
	GPI1	Q3	I plan to purchase green skincare products because of their positive environmental contribution.	Al Mamun et al. (2020)
	GPI2	Q28	I plan to purchase more green skincare products rather than regular skincare products.	Maichum, Parichatnon and Peng (2016)
	GPI3	Q26	I will switch to buying green skincare products in the future.	Al Mamun et al. (2020)



## 4. Empirical Findings

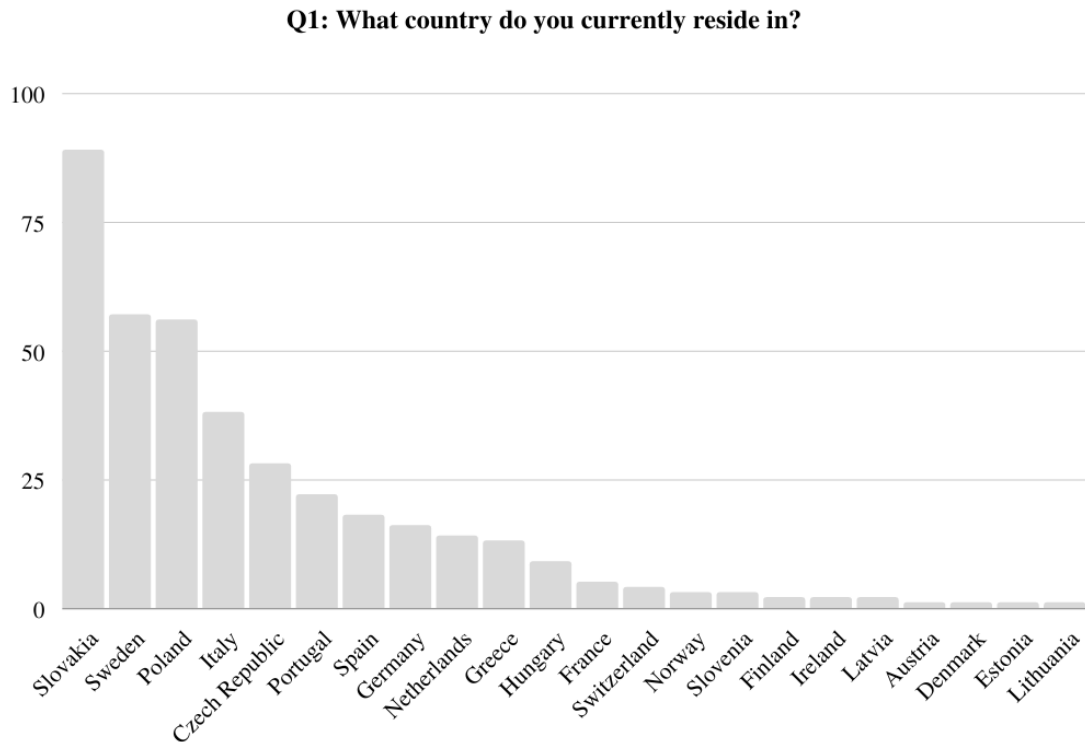
The following chapter presents the empirical results of this study on consumer behavior toward green skincare products. The chapter includes demographic statistics for the country of residence, age, gender, and highest achieved educational level. Furthermore, the hypothesis testing for Model 1 (Figure 2 in the Literature Review) and Model 2 (Figure 3 in the Literature Review) were conducted to explore the relationships between the variables and factors influencing consumer behavior towards green skincare products.

### 4.1. Demographic Statistics

#### 4.1.1. Country of Residence

Figure 4 below depicts the answers of the questionnaire respondents to the first question about their current country of residence within the 27 countries of the European Union, including countries of the European Economic Area and European Free Trade Association countries.

Figure 4: *What country do you currently reside in?*





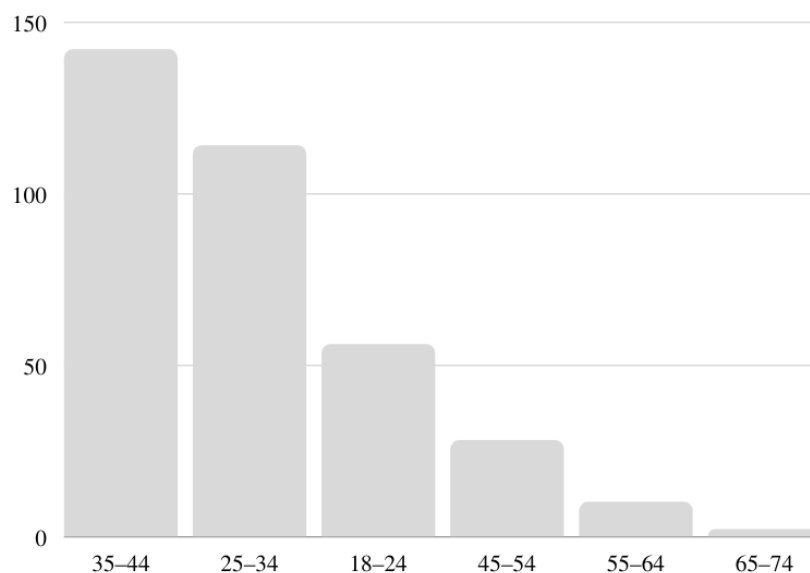
Out of the 385 respondents, the majority 89 (23%) were from Slovakia, followed by 57 (15%) respondents from Sweden and 56 (14,5%) from Poland. 38 (10%) of the questionnaire respondents were from Italy, and 28 (7%) were from the Czech Republic. 22 (6%) respondents resided in Portugal, 18 (5%) were from Spain, and 16 (4%) resided in Germany. 14 (3,6%) respondents had a residence in the Netherlands and 13 (3%) in Greece. The rest included 9 (2%) respondents from Hungary, 5 (1,4%) from France, 4 (1%) from Switzerland, 3 (0,8%) from Norway, 3 (0,8%) from Slovenia, 2 (0,5%) from Finland, 2 (0,5%) from Ireland and 2 (0,5%) from Latvia. Lastly, there was 1 (0,3%) respondent from Austria, 1 (0,3%) was from Denmark, 1 (0,3%) from Estonia, and 1 (0,3%) from Lithuania.

## 4.1.2. Age

Figure 5 below represents the answers of the 385 respondents to the question about their age. Most of the respondents, 142 (37%), were in the age group between 35–44 years, followed by the age group between 25–34 years with 114 (30%) respondents and the age group of 18–24 years with 89 (23%) respondents. There were 28 (7%) respondents between 45–54 years and 10 (3%) respondents in the age group of 55–64 years. Lastly, there were 2 (0,5%) respondents aged 65–74 years.

**Figure 5: *What is your age?***

**Q32: What is your age?**

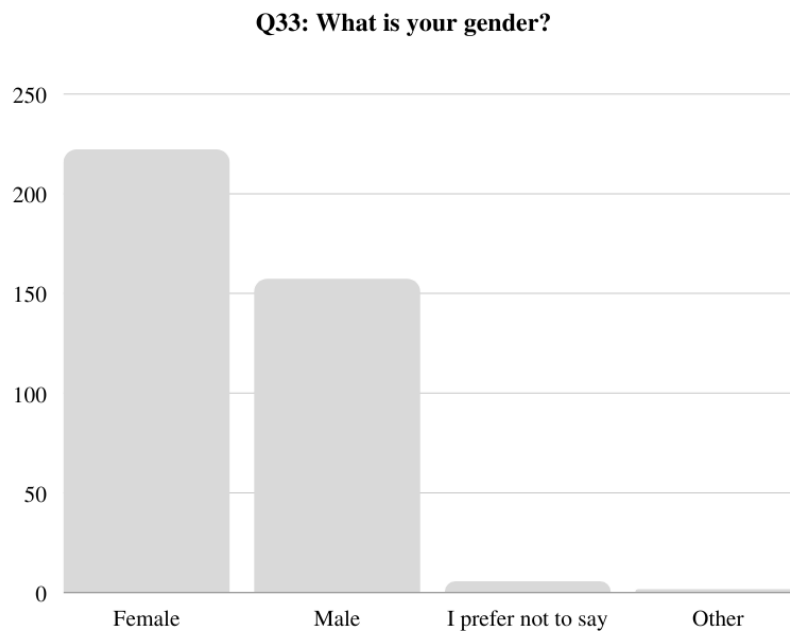




### 4.1.3. Gender

In Figure 6, we can see that out of the total number of 385 respondents, 222 (58%) were female, and 157 (41%) were male. 5 (1,3%) respondents preferred not to disclose their gender, and 1 (0,3%) respondent stated other.

**Figure 6: *What is your gender?***

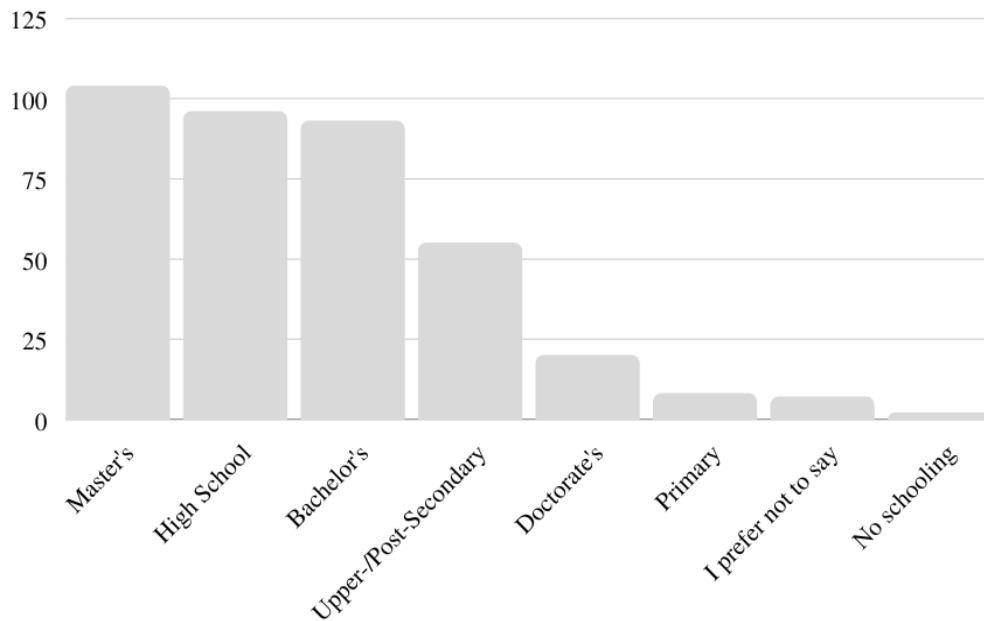


### 4.1.4. Education

Figure 7 regards the highest achieved educational level of the respondents. Majority of respondents, namely 104 (27%), have completed tertiary education with a master's degree, followed by 96 (25%) respondents whose highest achieved education was secondary. 93 (24%) respondents have completed tertiary education with a bachelor's degree, and 55 (14%) respondents have completed upper secondary and post-secondary (vocational education, trade school, certificate programs). 8 (2%) respondents stated that their highest-achieved education was primary (elementary or middle school), 7 (1,8%) respondents preferred not to disclose their education, and 2 (0,5%) had no schooling.



**Figure 7: What is your highest achieved education level?**  
**Q34: What is your highest achieved education?**



## **4.2. Model 1: Confirmatory Factor Analysis**

### **4.2.1. Initial CFA According to the Proposed Hypothesis Model 1**

Figure 8 is the visual model output by SPSS AMOS after running Confirmatory Factor Analysis (CFA). The survey response items, as operationalized in Table 2 in the Methodology chapter, are represented by rectangles. According to Model 1 (Figure 2) presented in the Literature Review chapter, the items are connected to their respective latent constructs Attitude (ATT), Subjective Norm (SN), and Perceived Behavioral Control (PBC), represented by ellipses.



Figure 8: CFA of the Proposed Hypothesis Model 1

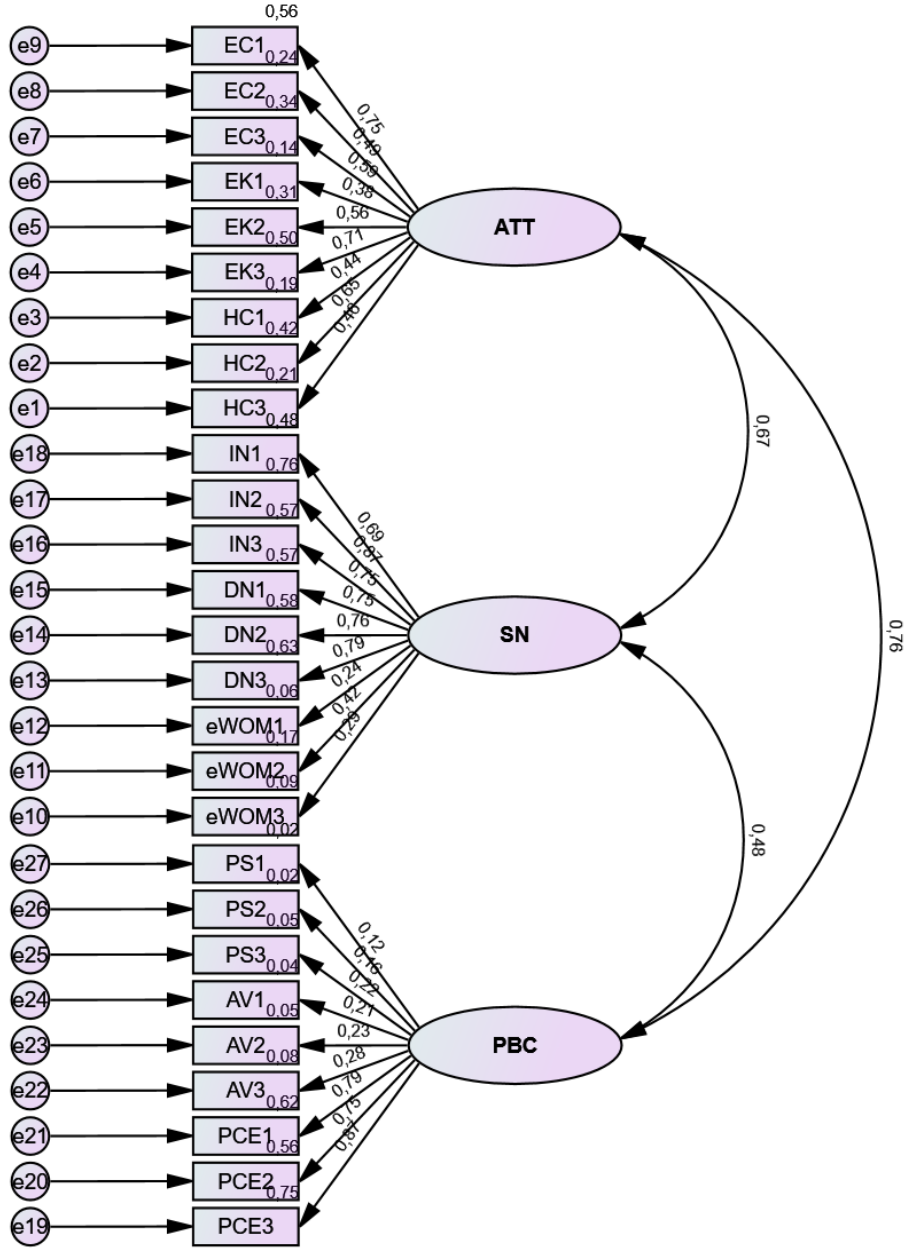




Table 3 includes the factor loadings (standardized regression weights or estimates) for each item, which can also be seen in Figure 8. According to suggestions by Matsunaga (2010) and Hair et al. (2009), factor loadings with a score less than .5 ( $< .5$ ) should be removed. This was done because the items were deemed to be unsatisfactory at measuring the intended factors or constructs (Matsunaga, 2010; Hair et al., 2009). It is important to note that the items were removed one at a time, with after each removal the estimates being recalculated, because the values of the other estimates can change, naturally, due to each of the items being interrelated with one another. Therefore, the following items were removed: EK1, HC1, HC3, eWOM1, eWOM2, eWOM3, PS1, PS2, PS3, AV1, AV2, and AV3. However, EC2, with the factor loading of .494 was retained, as the value was very close to .5. Furthermore, some researchers are more lenient and determine their cutoff point to be .4 for factor loadings (Matsunaga, 2010; Hair et al., 2009). Be that as it may, due to our usage of judgemental and convenience (non-probability) sampling methods to collect our sample, which is considered to be weaker than probability sampling methods, we decided to be more stringent (Blumberg, Cooper and Schindler, 2011).

**Table 3: Standardized Regression Weights**

Latent Constructs	Observed Variables	Items	Estimates
Attitude (ATT)	Environmental Concern (EC)	EC1	.748
		EC2	.494
		EC3	.586
	Environmental Knowledge (EK)	EK1	.377
		EK2	.561
		EK3	.708
	Health Concern (HC)	HC1	.436
		HC2	.650
		HC3	.462
Subjective Norm (SN)	Injunctive Norm (IN)	IN1	.690
		IN2	.869
		IN3	.753



**Table 3: Standardized Regression Weights (Cont.)**

Latent Constructs	Observed Variables	Items	Estimates
Subjective Norm (SN)	Descriptive Norm (DN)	DN1	.755
		DN2	.762
		DN3	.793
	Electronic Word-of-Mouth (eWOM)	eWOM1	.245
		eWOM2	.416
		eWOM3	.293
Perceived Behavioral Control (PBC)	Price Sensitivity (PS)	PS1	.124
		PS2	.157
		PS3	.219
	Availability (AV)	AV1	.210
		AV2	.226
		AV3	.278
	Perceived Consumer Effectiveness (PCE)	PCE1	.788
		PCE2	.747
		PCE3	.866

Table 4 is the compilation of the model fit indices provided by the SPSS AMOS output after running the initial CFA model (Figure 8). The acceptable threshold values are based on the suggestions by Hooper, Coughlan and Mullen (2008) and Kline (2015). The Discrepancy Divided by Degree of Freedom (CMIN/DF) is  $4.4 > 3$ , which shows a poor fit. The Goodness-of-Fit (GFI) is  $0.77 < 0.95$ , which shows a poor fit. The Comparative Fit Index (CFI) is  $0.73 < 0.95$ , which shows a poor fit. The Tucker-Lewis Index (TLI) is  $0.7 < 0.95$ , which shows a poor fit. The Standardized Root Mean Square Residual (SRMR) is  $0.09 > 0.08$ , which shows a poor fit. The Root Mean Square Error of Approximation (RMSEA) is  $0.09 > 0.07$ , which shows a poor fit. Overall, the initial CFA model (Figure 8) test results of the Proposed Hypothesis Model 1 (Figure 2 in the Literature Review chapter) showed a poor fit and required to be revised.

**Table 4: Model Fit**

Measure	CMIN/DF	GFI	CFI	TLI	SRMR	RMSEA
Value	4.406	0.771	0.734	0.709	0.0957	0.094
Acceptable Threshold	$\leq 3$	$> 0.95$	$> 0.95$	$> 0.95$	$< 0.08$	$< 0.07$

#### 4.2.2. Revised CFA Model

**Figure 9: Revised CFA Model**

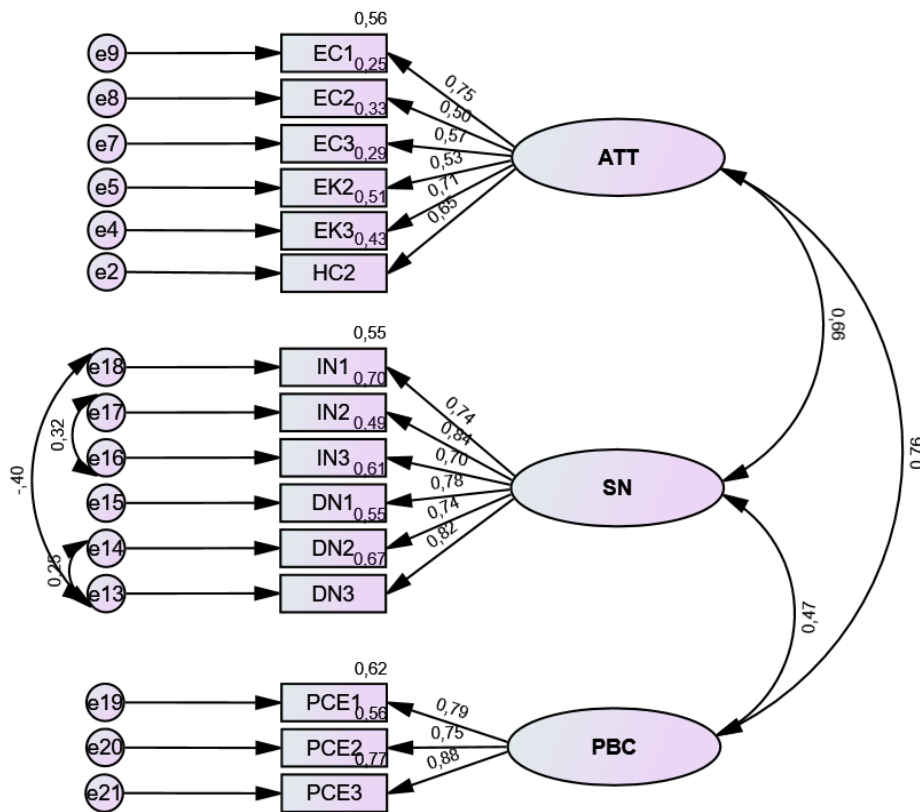


Figure 9 illustrates the visual output of SPSS AMOS after running Confirmatory Factor Analysis (CFA). The items of each observed factor were loaded as displayed on the left, represented by rectangles, which are connected to their respective latent constructs (ATT, SN, PBC), depicted as ellipses. Table 5 includes factor loadings (standardized regression weights) for each item. As mentioned previously, the items EK1, HC1, HC3, eWOM1, eWOM2, eWOM3, PS1, PS2, PS2, AV1, AV2, and AV3



had factor loadings less than 0.5 ( $< 0.5$ ) and had to be removed, with the exception of retaining item EC2. Furthermore, error terms e13 and e14, e13 and e18, e16 and e17, which are represented by small circles, were covariates as suggested by the modification indices output. This was done in order to improve the model fit and was justified by the fact that those error terms belong to the same latent construct Subjective Norm (SN). Furthermore, Table 5 includes the factor loadings (standardized regression weights or estimates) for each item of the revised CFA model (Figure 9). It also states which items were removed.

**Table 5: Standardized Regression Weights**

Latent Constructs	Observed Factors	Items	(If) Removed	Estimates
Attitude (ATT)	Environmental Concern (EC)	EC1		.752
		EC2		.498
		EC3		.573
	Environmental Knowledge (EK)	EK1	Removed	N/A
		EK2		.534
		EK3		.711
	Health Concern (HC)	HC1	Removed	N/A
		HC2		.655
		HC3	Removed	N/A
Subjective Norm (SN)	Injunctive Norm (IN)	IN1		.742
		IN2		.839
		IN3		.703
	Descriptive Norm (DN)	DN1		.781
		DN2		.739
		DN3		.816
	Electronic Word-of-Mouth (eWOM)	eWOM1	Removed	N/A
		eWOM2	Removed	N/A
		eWOM3	Removed	N/A



**Table 5: Standardized Regression Weights (Cont.)**

Latent Constructs	Observed Factors	Items	(If) Removed	Estimates
Perceived Behavioral Control (PBC)	Price Sensitivity (PS)	PS1	Removed	N/A
		PS2	Removed	N/A
		PS3	Removed	N/A
	Availability (AV)	AV1	Removed	N/A
		AV2	Removed	N/A
		AV3	Removed	N/A
	Perceived Consumer Effectiveness (PCE)	PCE1		.789
		PCE2		.748
		PCE3		.877

**Table 6: Model Fit**

Measure	CMIN/DF	GFI	CFI	TLI	SRMR	RMSEA
Value	2.099	0.941	0.967	0.959	0.0453	0.053
Acceptable Threshold	$\leq 3$	$> 0.95$	$> 0.95$	$> 0.95$	$< 0.08$	$< 0.07$

Table 6 is the compilation of the model fit indices provided by the SPSS AMOS output after running the revised CFA model. The acceptable threshold values are based on the suggestions by Hooper, Coughlan and Mullen (2008) and Kline (2015), as mentioned previously. The Discrepancy Divided by Degree of Freedom (CMIN/DF) is  $2 < 3$ , which shows an acceptable fit. The Goodness-of-Fit (GFI) is  $0.94 < 0.95$ , which shows an almost acceptable fit. The Comparative Fit Index (CFI) is  $0.96 > 0.95$ , which is an acceptable fit. The Tucker-Lewis Index (TLI) is  $0.95 \geq 0.95$ , which shows an acceptable fit. The Standardized Root Mean Square Residual (SRMR) is  $0.04 < 0.08$ , which shows an acceptable fit. The Root Mean Square Error of Approximation (RMSEA) is  $0.05 < 0.07$ , which is an acceptable fit. Overall, the revised CFA model (Figure 9) test results show an acceptable fit.

### 4.3. Model 1: Path Analysis

Figure 10 illustrates the visual model of the path analysis, which was constructed using SPSS AMOS. It was done according to the Theory of Planned Behavior which can be seen in Figure 1 in the Literature Review chapter. The Revised CFA Model (Figure 9), which showed an acceptable model fit as provided in Table 6, was saved using the SPSS AMOS data imputation function. Green Purchase Intention (GPI) is the dependent variable. Therefore, it was constructed using CFA separately and saved using the data imputation function as well. Thus, the relationship between GPI and the constructs of Attitude (ATT), Subjective Norm (SN), and Perceived Behavioral Control (PBC), which can now be considered as Independent Variables, was tested.

**Figure 10: Path Analysis of the Revised CFA Model**

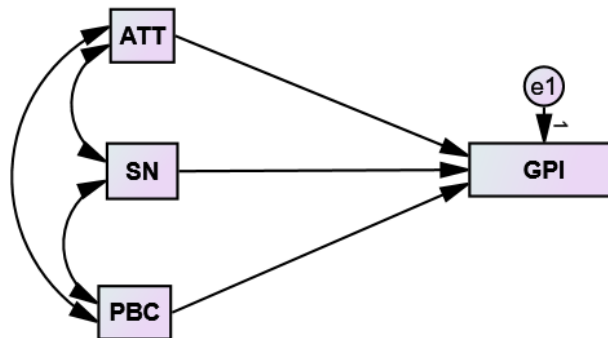


Table 7 presents the path analysis test results of the Revised CFA Model (Figure 9) taken from the SPSS AMOS output. Attitude (ATT) and Green Purchase Intention (GPI) were found to have a significant relationship ( $.001 < 0.05$ ). Subjective Norm (SN) and GPI were not found to have a significant relationship ( $.625 > 0.05$ ). Perceived Behavioral Control (PBC) and GPI were not found to have a significant relationship ( $.476 > 0.05$ ).

**Table 7: Path Analysis results of the Revised CFA Model**

Relationship	ATT → GPI	SN → GPI	PBC → GPI
Significance	.001	.625	.476



#### 4.4. Model 2: Pearson’s Correlation Coefficient

Table 8 contains the output provided by SPSS for Model 2 (Figure 3 in the Literature Review chapter) after running the Pearson’s Correlation Coefficient test. There were 9 Independent Variables (IV) in total, tested individually with Green Purchase Intention (GPI), which is the Dependent Variable (DV). The threshold for acceptable Pearson’s  $r$  was decided to be  $r > .5$ , which can be interpreted as a moderate to strong correlation (Akoglu, 2018). The IVs that were found to have a positive significant relationship with GPI are as follows: Environmental Concern (EC) ( $.68 > .5$  and  $p < .001$ ), Environmental Knowledge (EK) ( $.65 > .5$  and  $p < .001$ ), Health Concern (HC) ( $.62 > .5$  and  $p < .001$ ), and Perceived Consumer Effectiveness (PCE) ( $.618 > .5$  and  $p < .001$ ).

Table 8: Model 2 Pearson’s Correlation Coefficient Test Results

Relationship	EC → GPI	EK → GPI	HC → GPI	IN → GPI	DN → GPI	eWOM → GPI	PS → GPI	AV → GPI	PCE → GPI
Pearson’s $r$	.685	.650	.622	.577	.496	.379	.140	.366	.618
Significance	<.001	<.001	<.001	<.001	<.001	<.001	.006	<.001	<.001

#### 4.5. Model 1 and Model 2 Tests Comparison

The same Independent Variables that had an acceptable Pearson’s  $r$  and high significance, were also the same items that had acceptable factor loadings and thus remained in the Revised CFA model. The testing of Model 2 using SPSS resulted in EC, EK, and HC showing a significant positive relationship with GPI. Meanwhile, the testing of Model 1 using SPSS AMOS path analysis resulted in ATT showing to have a significant relationship with GPI. Considering that ATT is essentially made up of EC, EK, HC, these results are in agreement with each other. Additionally, PCE also had an acceptable Pearson’s  $r$  and high significance, and its items PCE1, PCE2, and PCE3, had good factor loadings during CFA. However, the other items comprising SN during CFA, such as PS1, PS2, PS3, AV1, AV2, AV3 had low factor loadings and thus had to be removed from the initial CFA model. Similarly, during the bivariate analysis, PS and AV had poor Pearson’s  $r$  values, and their respective hypotheses were rejected. Overall, using two hypotheses models and performing two different statistical tests allowed us to fully utilize our collected data and strengthen the findings of the results.



## 4.6. Hypotheses Results

Table 9 presents the results of the hypothesis testing for hypotheses  $H_1$ – $H_{12}$ . The accepted alternative hypotheses were as follows:  $H_1$ ,  $H_2$ ,  $H_3$ ,  $H_4$ ,  $H_{12}$ . The rejected alternative hypotheses were as follows:  $H_5$ ,  $H_6$ ,  $H_7$ ,  $H_8$ ,  $H_9$ ,  $H_{10}$ ,  $H_{11}$ .

**Table 9: Hypotheses Results**

Hypothesis	Relationship	Accept	Reject
$H_1$	ATT → GPI	Accept	
$H_2$	EC → GPI	Accept	
$H_3$	EK → GPI	Accept	
$H_4$	HC → GPI	Accept	
$H_5$	SN → GPI		Reject
$H_6$	IN → GPI		Reject
$H_7$	DN → GPI		Reject
$H_8$	eWOM → GPI		Reject
$H_9$	PBC → GPI		Reject
$H_{10}$	PS → GPI		Reject
$H_{11}$	AV → GPI		Reject
$H_{12}$	PCE → GPI	Accept	



## **5. Discussion**

*The following chapter presents a comprehensive discussion of the empirical findings of our study, which investigated the factors influencing consumer behavior towards green skincare products. The results shed light on several key variables, including Environmental Concern, Environmental Knowledge, Health Concern, Attitude, Injunctive Norm, Descriptive Norm, Electronic Word-of-Mouth, Subjective Norm, Price Sensitivity, Availability, Perceived Consumer Effectiveness, and Perceived Behavioral Control. The chapter reveals which proposed hypotheses were accepted and which were rejected. We will also explore how the results support or contradict previous research.*

### **5.1. Environmental Concern**

According to our hypothesis testing result ( $H_2$ ), Environmental Concern (EC) has a significant positive relationship with Green Purchase Intention (GPI). This is congruent with past studies that have also found EC to have an association with GPI (Maichum, Parichatnon and Peng, 2016; Paul, Modi and Patel, 2016). More specifically, the studies by Xu et al. (2022), Chin et al. (2018), Al Mamun et al. (2020), and Al Mamun et al. (2018) investigating GPI of skincare have also found EC to have an association with GPI. All in all, the findings suggest that individuals who are willing to reduce their environmental footprint by buying less or choosing sustainable (green) products, who care deeply about various environmental issues, and who want better environment-protecting laws may be more willing to purchase green skincare.

### **5.2. Environmental Knowledge**

The results of testing the third hypothesis ( $H_3$ ) showed that Environmental Knowledge (EK) has a significant positive relationship with Green Purchase Intention (GPI). The results correspond with existing studies on the topic that have also proven a positive relationship between EK with GPI. Research by Paul, Modi and Patel (2016) and Yadav and Pathak (2016) proved EK to be an essential factor in consumers' buying decisions when purchasing green products. Studies by Lee et al. (2012) and Mahesh and Ganapathi (2012) showed that increased EK of consumers increased the tendency of purchase intention. In conclusion, consumers who are environmentally conscious and who know what products to pick that would help to reduce negative effects on the environment tend to be more willing to purchase green skincare products.



### 5.3. Health Concern

The testing of hypothesis 4 ( $H_4$ ) gave us the following result. Health Concern (HC) has shown to have a positive relationship with Green Purchase Intention (GPI). This is in line with the existing literature on the positive influence HC has on GPI, such as the study by Wijekoon and Sabri (2021), where HC has been shown to be one of the major influencing factors for predicting GPI. Additionally, Liobikiene and Bernatoniene (2017) emphasized that HC is an important factor in green purchase behavior. This means that consumers who are concerned about their health, who opt for green skincare because they believe it is healthier for their skin, and consumers who choose their skincare based on their safety have a tendency to purchase green skincare products.

### 5.4. Attitude

Based on the empirical findings of this study, the proposed Hypothesis  $H_1$  claiming that there is a significant relationship between Attitude (ATT) and Green Purchase Intention (GPI), was accepted. This suggests that individuals who are well-informed and care about environmental issues and who make their purchasing decisions based on their environmental beliefs are more likely to have the intention (future plans) to purchase green skincare. This is in line with the existing literature on ATT in relation to GPI, where studies have shown that ATT can positively affect GPI (Lee, 2008; Al Mamun et al., 2018; Al Mamun et al., 2020; Maichum, Parichatnon and Peng, 2016; Paul, Modi and Patel, 2016). This also explains why our proposed hypotheses  $H_2$ ,  $H_3$ , and  $H_4$  were also accepted.

### 5.5. Injunctive Norm

Alternative Hypothesis  $H_6$  postulating that Injunctive Norm (IN) has a significant positive relationship with Green Purchase Intention (GPI), was rejected, which contrasts the findings by Xu et al. (2022). This could be due to the sampling frame consisting of European respondents as per the delimitations of the study. Therefore, the  $H_6$  result conforms with the review paper by Wijekoon and Sabri (2021), which presented the findings about Western consumers being less influenced by social groups.



## 5.6. Descriptive Norm

The alternative hypothesis  $H_7$  was rejected. Therefore, we were not able to find that Descriptive Norm (DN) has a significant positive relationship with Green Purchase Intention (GPI). Our result is antithetical to the findings by Xu et al. (2022) and Ham, Jeger and Ivković (2015). Similarly to the discussion regarding  $H_6$ , this may be due to the European context of the study (Wijekoon and Sabri, 2021).

## 5.7. Electronic Word-of-Mouth

Hypothesis 8 ( $H_8$ ), claiming that Electronic Word-of-Mouth (eWOM) and Green Purchase Intention (GPI) have a significant positive relationship, was rejected. This is different from the study by Chang (2015), which found that eWOM had an impact on GPI. Furthermore, the study by Rahim et al. (2016) also highlighted the importance of eWOM in persuading consumer purchasing decisions toward green products.

## 5.8. Subjective Norm

The results showed that Subjective Norm (SN) does not have a significant relationship with Green Purchase Intention (GPI) according to our sample. Therefore the alternative hypothesis  $H_5$  (SN has a significant relationship with GPI) was rejected. The result was insignificant despite extending SN into Injunctive Norms (IN), which capture the perceptions an individual has about what behavior is expected of them by others (Salmivaara, Lombardini and Lankoski, 2021; Ham, Jeger and Ivković, 2015), and Descriptive Norms (DN) which regard the perceptions that an individual has about the behavior of others, i.e. it is consumers' perception of what kind of skincare their family members, friends or colleagues purchase or use (Xu et al., 2022; Salmivaara, Lombardini and Lankoski, 2021). The findings are congruent with some of the past research, stating that Western consumers tend to be individualistic and, therefore, less influenced by social pressures (Wijekoon and Sabri, 2021). As well as the paper by Paul, Modi and Patel (2016) found that SN, in the form of the approval of different social groups, such as friends and family, is unimportant to most consumers when considering the purchase of green products. This contrasts the findings by Xu et al. (2022) and Ham, Jeger and Ivković (2015), the explanation for which is that the influence of SN is context-dependent. Specifically, it depends on the green product category and the region. The same insignificant results were also found during bivariate analysis of GPI with IN ( $H_6$ ), DN ( $H_7$ ), and eWOM ( $H_8$ ).



## 5.9. Price Sensitivity

Testing of Hypothesis 10 ( $H_{10}$ ) revealed that there is no significant positive relationship between Price Sensitivity (PS) and Green Purchase Intention (GPI). The results of our testing are incongruent with other findings, such as the research by Zinoubi (2020), who found a positive relationship between PS and GPI.

## 5.10. Availability

Hypothesis 11 ( $H_{11}$ ) has been rejected. Thus a significant positive relationship between Availability (A) and Green Purchase Intention (GPI) was not found. This is in contrast with the findings of research by Al Mamun et al. (2020) which found that when green skincare products are available, consumers use them more. Additionally, Dhanwani, Jainani and Ojha (2020) found that the availability of green skincare has a positive effect on GPI.

## 5.11. Perceived Consumer Effectiveness

Test results of hypothesis 12 ( $H_{12}$ ) revealed that there was not a significant positive relationship between Perceived Consumer Effectiveness (PCE) and Green Purchase Intention (GPI). These results agree with other existing studies on the topic, for instance, the results by Zhuang, Luo and Riaz (2021) that also showed PCE to have a strong relationship with GPI. Therefore, it could be suggested that individuals who believe that their actions in regard to sustainability can make a difference exhibit more GPI.

## 5.12. Perceived Behavioral Control

Lastly, our empirical findings showed that Perceived Behavioral Control (PBC) does not have a significant relationship with Green Purchase Intention (GPI). PBC regards the concepts such as Perceived Consumer Effectiveness (PCE), Availability (AV), and Price Sensitivity (PS). This is inconsistent with the existing literature on PBC, such as the study by Paul, Modi and Patel (2016) that also measured PBC similarly and found PBC to have a positive relationship with GPI. The results of the studies by Yadav and Pathak (2017) as well as Hsu, Chang and Yansritakul (2017), proved that PBC had a positive influence on GPI. Our results were different from these studies, most likely due to PS and AV being poor predictors of PBC for our sample, according to Confirmatory Factor Analysis. Furthermore, the bivariate testing of PS ( $H_{10}$ ) and AV ( $H_{11}$ ) with GPI showed similar insignificant results. Thus, the proposed hypothesis  $H_3$ , that PBC has a significant relationship with GPI, was rejected.



## **6. Conclusions**

*In this chapter, we discuss the implications of our findings and their contribution to the existing literature on green consumer behavior. We discuss how they can help to guide the development of effective marketing strategies for green skincare products. This chapter provides a discussion of the empirical findings of our study and their implications for theory and practice. It highlights the importance of considering multiple factors influencing consumer behavior towards green skincare products and provides insights that can aid in designing and implementing effective marketing or retailing strategies. Additionally, we address the study's limitations and provide suggestions for future research to enhance further our understanding of consumer behavior toward sustainable skincare products.*

### **6.1. Answering Research Questions**

Two research questions were presented in this study. Question 1: *What determinants influence Green (Skincare) Purchase Intention among consumers in the European context?* We found that for our sample of European consumers, the significant determinants influencing Green Purchase Intention of (green) skincare products are Environmental Concern, Environmental Knowledge, Health Concern, and Perceived Consumer Effectiveness.

Question 1a: *What factors influence Green (Skincare) Purchase Intention using the Theory of Planned Behavior?* The results have shown that in the sample of the 385 surveyed European consumers, Attitude has been the best predictor of Green Purchase Intention.

### **6.2. Implications**

#### **6.2.1. Theoretical Implications**

This study contributes to the limited body of existing literature on the topic of Green Purchase Intention (GPI) that focuses on a specific green product category, considering that most of the current research investigates GPI in a general context. Furthermore, an overwhelming majority of studies on the GPI of green skincare are predominantly focused on consumers within Asian countries. Therefore, the choice to survey respondents from European Union, European Economic Area, and European Free Trade Association countries allowed us to contribute to the lacking research on GPI of green skincare for the European context. Additionally, the



presented research contributes to the investigation of GPI using the Theory of Planned Behavior and, with our results, deepens the existing body of knowledge on its application. For instance, the theoretical model (Figure 2 in the Literature Review chapter) can be used as a guiding force for other future studies.

## **6.2.2. Managerial Implications**

In the European market, the skincare segment has been growing continually, which is predicted to persist even in the upcoming years. Moreover, more consumers are becoming more conscious and aware of sustainability issues. This consumer awareness has increased demand for natural, organic, and eco-friendly skincare products. Considering that the climate crisis is one of the most important societal and environmental issues of the 21st century, many consumers are changing their shopping habits to help reduce their carbon footprint and minimize their environmental impact. Additionally, there are also growing concerns about the chemical-laden manufacture of conventional personal care products and the effects that they may have on health. It is safe to assume that the popularity and demand for green skincare products will continue to increase. Thus the competition in the market will grow, making it harder to capture the interest of potential consumers. Thus, skincare manufacturers and retailers now face an opportunity to adjust their manufacture, production, or marketing strategies according to the current trends in the skincare market.

Therefore, in light of the empirical results of this study, we suggest that green skincare manufacturers and retailers within the European Union, the countries of the European Economic Area, and the European Free Trade Association should focus on targeting consumers who are already concerned and knowledgeable about environmental issues. The tendency to purchase green skincare has proven to be higher within this consumer group. Likewise, it is suggested that consumers with concerns about their health are targeted, too, because they have been shown to have a higher tendency to purchase green skincare. Additionally, sustainability-conscious consumers are also the ones that are the most knowledgeable about green products (how to pick products with sustainable packaging, ingredients, and so on), meaning that various marketing strategies utilized by brands that falsely portray their products as green ('greenwashing') definitely can only hurt brands in the long run.



### **6.3. Limitations**

This study used non-probability mixed (convenience and judgemental) sampling methods, which can lead to less generalizable and reliable results. Additionally, the survey sample consisted of respondents from multiple countries from the European Union, European Economic Area, and European Free Trade Association instead of a single European nation. This means that the study's results could only contextualize in general about European consumers instead of being able to produce results that infer something about a specific country's consumer market. Lastly, due to the chosen mono-quantitative method, the presented research only provides objective results, as it cannot produce context-rich findings about Green Purchase Intention.

### **6.4. Suggestions for Future Research**

For this study, we decided to collect data from various European countries due to time and fundability limitations. However, we suggest that future research targets just one country if possible. This should be done in order to get more specific results that could be useful for the particular researched market. Furthermore, it is necessary to focus future research on a specific green product category, whether it is green skincare, color cosmetics, food, or others. This is because, depending on the product category, the preferences and attitudes of consumers can vary largely. Moreover, if future studies use a survey as a data collection method that will be analyzed using structural equation modeling, we suggest operationalizing more survey items. Lastly, in order to achieve a deeper understanding of consumers' experiences with Green Purchase Intention and their subjective perspectives on this phenomenon, we suggest that future research employs mixed research methods, exploiting the advantages of both quantitative and qualitative methods.



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## Appendix A

### Green Skincare Questionnaire

Hi,

We are Dana and Mark, students at Linnaeus University in Kalmar, Sweden. We are conducting this survey for our Bachelor's degree project.

This questionnaire is directed only toward EU/EEA/EFTA residents and the aim is to study behavior of skincare products consumers.

Skincare are products such as cleansers, toners, serums, moisturizers, masks, and sunscreens. Green skincare uses natural ingredients and avoids using chemical agents, or artificial coloring. This results in safer and less toxic alternatives to traditional skincare products. It often incorporates reusable packaging, while refrains from animal testing. The examples include brands like Weleda, The Body Shop, Lush, Burt's Bees, Dr. Hauschka, REN Skincare, Aesop, Evolve Organic Beauty, Lumene, Augustinus Bader, and more.

Completion will take just a few minutes, the data collected will remain confidential and will not be shared with third parties.

Thank you in advance for your participation!

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#### 1. What country do you currently reside in?

*This question consisted of a single-choice country of residence answer, from the European Union, European Economic Area, and European Free Trade Association country options: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland.*

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***A 6-point Likert Scale was used for questions 2 to 31: Strongly Disagree, Disagree, Slightly Disagree, Slightly Agree, Agree, Strongly Agree.***

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**2. I often gather information about skincare products from reviews made by other consumers before buying.**

**3. I plan to purchase green skincare products because of their positive environmental contribution.**

**4. I know a lot about environmental issues.**

**5. I carefully choose the skincare products I buy and use, to make sure that they are safe for me.**

**6. I think there should be stronger laws to help protect the environment.**

**7. I like green skincare because it is healthier for my skin.**

**8. Most of my family thinks that I should use green skincare products.**

**9. I prefer to shop for green skincare products online rather than visiting local stores.**

**10. I engage in online discussions regarding skincare to find out about the best products.**

**11. When I choose a skincare product, price is the most important factor.**

**12. My local stores have a variety of green skincare products to choose from.**

**13. Most of my colleagues (at work, at school) think that I should use green skincare products.**

**14. I can protect the environment by buying skincare products that are friendly to the environment.**

**15. Skincare product reviews from other consumers give me the confidence to buy those skincare products.**

**16. I prefer buying green skincare products online where there are more options than at local stores.**



17. Most of my friends use green skincare products.
18. I am worried about environmental issues, like climate change, and that influences the skincare products I purchase.
19. I know how to choose skincare products that reduce the amount of landfill waste, such as products with eco-labels.
20. Each person can have a positive effect on the environment by purchasing environmentally friendly skincare products.
21. When I buy a skincare product, I will select the cheapest.
22. I rely on the price to judge the worth of something I buy.
23. Most of my colleagues (at work, at school) use green skincare products.
24. I am buying less to help protect the environment.
25. Most of my friends think that I should use green skincare products.
26. I will switch to buying green skincare products in the future.
27. I want to know more about how the skincare product was made and its impacts on the environment before I purchase it.
28. I plan to purchase more green skincare products rather than regular skincare products.
29. I worry a lot about my health.
30. Most of my family members use green skincare products.
31. Each person can have an effect on the environment, so my actions can make a difference.
32. What is your age?
  - Under 18
  - 18–24



- 25–34
- 35–44
- 45–54
- 55–64
- 65–74
- 74 and older
- I prefer not to say

**33. What is your gender?**

- Male
- Female
- Other
- I prefer not to say

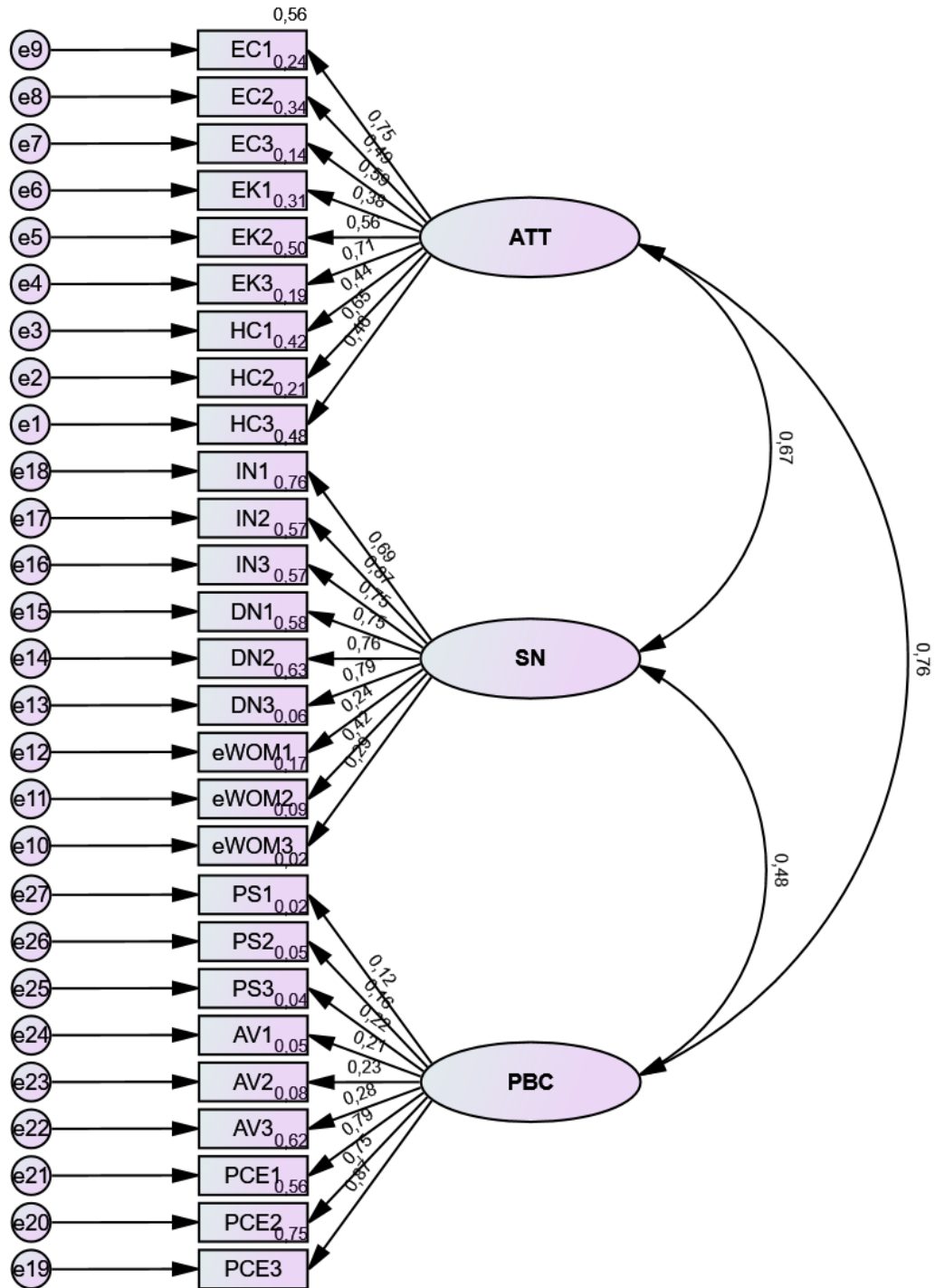
**34. What is your highest achieved education level?**

- No schooling
- Primary Education (Elementary School, Middle School)
- Secondary Education (High School)
- Upper Secondary and Post-Secondary (Vocational Education, Trade School, Certificate Programs)
- Tertiary Education – Bachelor
- Tertiary Education – Master
- Tertiary Education – Doctorate
- I prefer not to say



## Appendix B

### Model 1: SPSS AMOS Statistical Output (Initial CFA)





### Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
HC3	<---	ATT	,462
HC2	<---	ATT	,650
HC1	<---	ATT	,436
EK3	<---	ATT	,708
EK2	<---	ATT	,561
EK1	<---	ATT	,377
EC3	<---	ATT	,586
EC2	<---	ATT	,494
EC1	<---	ATT	,748
eWOM3	<---	SN	,293
eWOM2	<---	SN	,416
eWOM1	<---	SN	,245
DN3	<---	SN	,793
DN2	<---	SN	,762
DN1	<---	SN	,755
IN3	<---	SN	,753
IN2	<---	SN	,869
IN1	<---	SN	,690
PCE3	<---	PBC	,866
PCE2	<---	PBC	,747
PCE1	<---	PBC	,788
AV3	<---	PBC	,278
AV2	<---	PBC	,226
AV1	<---	PBC	,210
PS3	<---	PBC	,219
PS2	<---	PBC	,157
PS1	<---	PBC	,124



## Model Fit Summary

### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	57	1414,311	321	,000	4,406
Saturated model	378	,000	0		
Independence model	27	4454,843	351	,000	12,692

### RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,159	,771	,730	,655
Saturated model	,000	1,000		
Independence model	,411	,333	,282	,309

### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,683	,653	,736	,709	,734
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

### Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,915	,624	,671
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

### NCP

Model	NCP	LO 90	HI 90
Default model	1093,311	980,546	1213,593
Saturated model	,000	,000	,000
Independence model	4103,843	3892,197	4322,775



## FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	3,683	2,847	2,554	3,160
Saturated model	,000	,000	,000	,000
Independence model	11,601	10,687	10,136	11,257

## RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,094	,089	,099	,000
Independence model	,174	,170	,179	,000

## AIC

Model	AIC	BCC	BIC	CAIC
Default model	1528,311	1537,277	1753,645	1810,645
Saturated model	756,000	815,461	2250,326	2628,326
Independence model	4508,843	4513,090	4615,580	4642,580

## ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3,980	3,686	4,293	4,003
Saturated model	1,969	1,969	1,969	2,124
Independence model	11,742	11,191	12,312	11,753

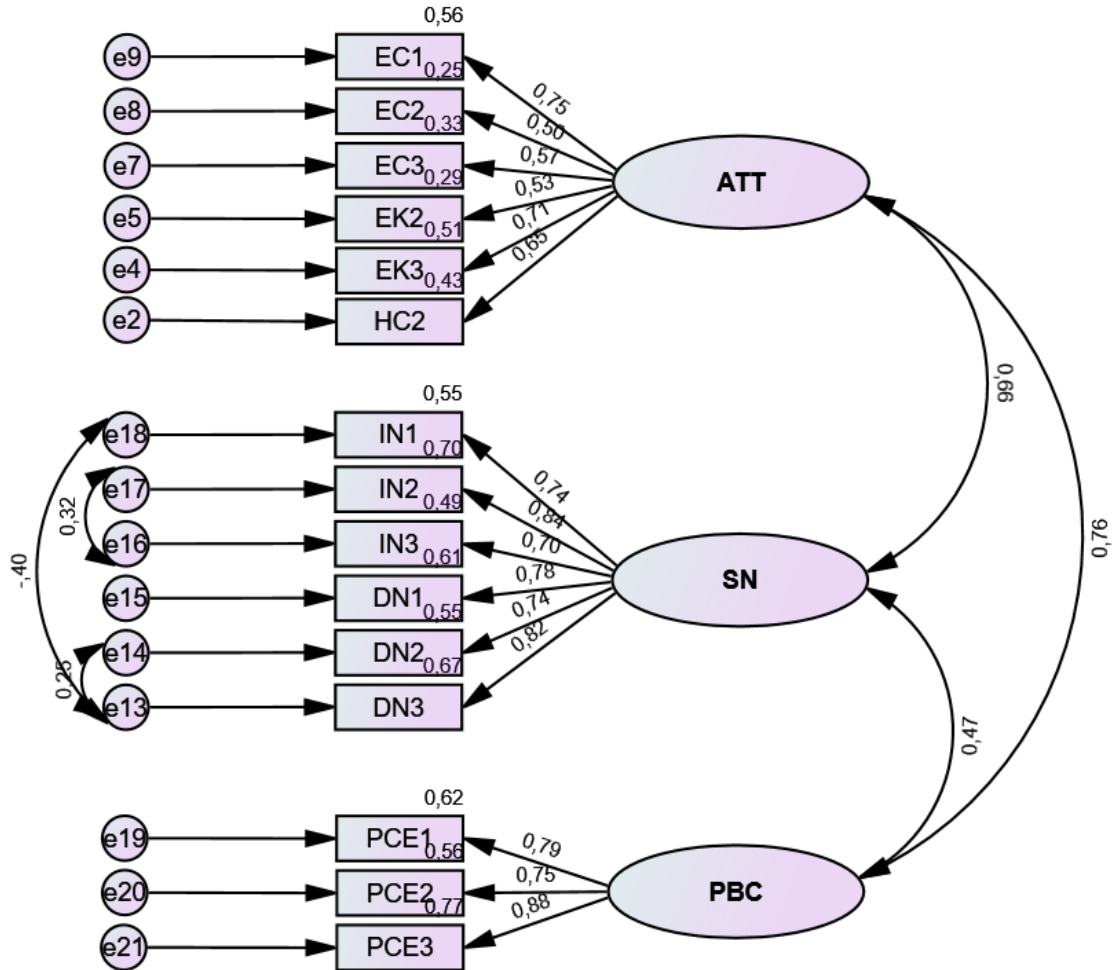
## HOELTER

Model	HOELTER ,05	HOELTER ,01
Default model	99	104
Independence model	35	36



## Appendix C

### Model 1: SPSS AMOS Statistical Output (Revised CFA)





**Standardized Regression Weights: (Group number 1 - Default model)**

	<b>Estimate</b>
HC2 <--- ATT	,655
EK3 <--- ATT	,711
EK2 <--- ATT	,534
EC3 <--- ATT	,573
EC2 <--- ATT	,498
EC1 <--- ATT	,752
DN3 <--- SN	,816
DN2 <--- SN	,739
DN1 <--- SN	,781
IN3 <--- SN	,703
IN2 <--- SN	,839
IN1 <--- SN	,742
PCE1 <--- PBC	,789
PCE2 <--- PBC	,748
PCE3 <--- PBC	,877



## Model Fit Summary

### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	36	176,278	84	,000	2,099
Saturated model	120	,000	0		
Independence model	15	2923,328	105	,000	27,841

### RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,069	,941	,916	,659
Saturated model	,000	1,000		
Independence model	,564	,304	,204	,266

## Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	,940	,925	,968	,959	,967
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

## Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,800	,752	,774
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

### NCP

Model	NCP	LO 90	HI 90
Default model	92,278	57,979	134,338
Saturated model	,000	,000	,000
Independence model	2818,328	2645,670	2998,315



## FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	,459	,240	,151	,350
Saturated model	,000	,000	,000	,000
Independence model	7,613	7,339	6,890	7,808

## RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,053	,042	,065	,290
Independence model	,264	,256	,273	,000

## AIC

Model	AIC	BCC	BIC	CAIC
Default model	248,278	251,408	390,595	426,595
Saturated model	240,000	250,435	714,389	834,389
Independence model	2953,328	2954,633	3012,627	3027,627

## ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	,647	,557	,756	,655
Saturated model	,625	,625	,625	,652
Independence model	7,691	7,241	8,160	7,694

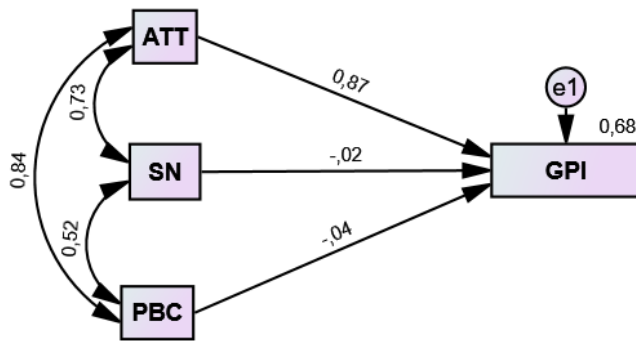
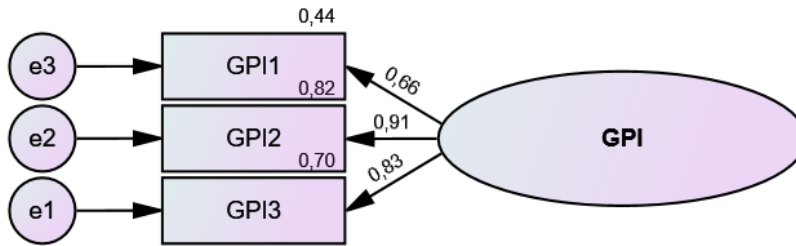
## HOELTER

Model	HOELTER ,05	HOELTER ,01
Default model	232	255
Independence model	18	19



## Appendix D

### Model 1: SPSS AMOS Statistical Output (Path Analysis)



### Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	PLabel
GPIamos <---	ATT	,989	,080	12,392	*** par_1
GPIamos <---	SN	-,022	,045	-,489	,625 par_2
GPIamos <---	PBC	-,042	,058	-,713	,476 par_3



## Appendix E

### Model 2: SPSS Statistical Output (Pearson Correlation Coefficient)

		Correlations									
		GPI	EC	EK	HC	IN	DN	eWOM	PS	AV	PCE
GPI	Pearson Correlation	1	.685**	.650**	.622**	.577**	.496**	.379**	.140**	.366**	.618**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001	.006	<.001	<.001
	N	385	385	385	385	385	385	385	385	385	385