Bridging the Green Gap; The mediating role of Attitude towards Green Product Purchase and Green Brand Love

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"Education is a human right with immense power to transform. On its foundation rest the cornerstones of freedom, democracy and sustainable human development."

(Kofi Annan, 1999, as cited in the foreword to State of the World's Children, p.4)

Bridging the Green Gap; The mediating role of Attitude towards Green Product Purchase and Green Brand Love

Abstract

This research explores the relationships between the variables Environmental Knowledge, Attitude towards Green Product Purchase, Green Brand Love, and Green Purchase Behavior. The research is focused on the phenomenon known as the "green gap", the discrepancy between pro-environmental consumer intentions and their actual purchasing behaviors. By integrating the Theory of Planned Behavior (TPB) with empirical research on Environmental Knowledge and Green Brand Love, the study seeks to provide a better understanding of consumer behavior in the context of environmental consumption.

The main research question of this thesis investigates to which extent Environmental Knowledge affects Green Purchasing Behavior through the mediating effects of Attitude towards Green Product Purchase and Green Brand Love. Answering that question, the thesis suggests that the Attitudes towards Green Product Purchases and the emotional connection consumers form with green brands, Green Brand Love, can mediate the relationship between their Environmental Knowledge and their purchasing behaviors.

This study contributes to academic literature and research by proposing a revised model of TPB that incorporates Green Brand Love as a mediating factor. Furthermore, it also offers practical insights for companies by suggesting that Environmental Knowledge and Green Brand Love can effectively drive green purchasing decisions. This could ultimately help in the closure of the Green Gap by giving insight into how new elements can be driving factors in resolving the discrepancy between buyer intention and actual purchase behavior. This research emphasizes the importance of understanding the psychological and emotional drivers behind consumer choices in order to promote more sustainable consumer practices effectively. To investigate these relationships, the research used a quantitative design. All data was collected through an online survey distributed to consumers who are familiar with purchasing green personal care products. A total of 156 valid responses were analyzed. Statistical analyses, including linear regression and mediation analysis, were conducted using SPSS to test the proposed hypotheses. The findings demonstrate that Environmental Knowledge positively influences both Attitude towards Green Product Purchase and Green Brand Love. The findings also show that positive Attitude towards Green Product Purchase and Green Brand Love were found to significantly enhance Green Purchase Behavior. The

mediation analysis showed that the relationship between Environmental Knowledge and Green Purchase Behavior is sequentially mediated by Attitude towards Green Product Purchase and Green Brand Love.

Preface

My fascination with Green Purchase Behavior began during an exchange program in Milan for my Bachelor's degree. It was there, in a course on Food Marketing and Consumer Behavior, that I first got hooked on the idea of how consumer choices can drive sustainability. I remember discussions on how our everyday purchasing decisions, such as vegan vs. vegetarian, impact the environment and the powerful role consumers play in promoting sustainable practices. That initial spark grew over time, eventually leading me to focus on this topic for my thesis.

Writing this thesis has been a huge learning experience, especially since it's my first time diving into quantitative research. At the beginning, the prospect of conducting quantitative research seemed overwhelming. However, as I got into the process, I learned so much about collecting data, analyzing it, and making sense of the numbers by reading other quantitative studies for my theoretical framework. The journey from formulating hypotheses to running statistical tests was both challenging and rewarding. I came across some obstacles, from designing the survey and collecting enough responses to interpreting complex data sets, but each challenge taught me something and helped to build my confidence as a quantitative researcher. It's definitely broadened my understanding of research in ways I hadn't imagined before.

I couldn't have done this without the help of my thesis supervisor, Dr. Kyriakos Riskos. He guided me through the challenges of quantitative research. Dr. Riskos was always there with good advice, detailed feedback, and encouragement. His feedback was especially helpful because of his own expertise in the field of green consumerism. His support and knowledge was crucial, especially when I hit roadblocks in my data analysis or needed to refine my research approach. His patience and dedication provided a sense of reassurance and helped me stay focused and motivated. I appreciate his willingness to share his expertise and his commitment to helping me succeed.

Throughout this process, I've gotten a deeper understanding of what drives Green Purchase Behavior and the importance of Environmental Knowledge, positive attitudes towards green products, and emotional connections with green brands. I explored how consumers' knowledge about environmental issues can influence their purchasing decisions and how fostering a love for green brands can bridge the gap between intention and action.

This thesis is a reflection of my academic growth and of my enthusiasm for promoting sustainable consumer behavior. The process of researching and writing this thesis has not only enhanced my academic skills but also reinforced my commitment to sustainability. It has

shown me the significant impact that informed and conscious consumer choices can have on the environment. I hope that the insights gained from this study will contribute to the ongoing efforts to promote sustainable consumption and help close the gap between consumers' environmental intentions and their actual behaviors.

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1. Introduction

In today's increasingly eco-conscious society, conversations concerning sustainability heavily impact contemporary consumer culture. From the rise of eco-friendly products to the eminence of environmental activism. It's evident that individuals are more aware of the impact their consumption patterns have on the planet. However, in this age of environmental consciousness lies a new challenge, a phenomenon known as the "green gap". The challenge of the "green gap", referencing the inconsistency between consumers' perceived eco-consciousness and their actual purchasing behaviors, presents an interesting issue in the realm of sustainable consumerism (Essiz et al., 2022, p.68).

Research often reveals that a significant part of the population identifies as environmentally conscious and supporting of green initiatives (Qomariah & Prabawani, 2020, p.2; Perera et al., 2022, p.1; Gleim et al., 2013, p.44) However, when it comes to making purchasing decisions, these intentions frequently do not translate into action (Gleim et al., 2013, p.45). An example of this can be found in the market for organic food. Despite widespread awareness of the benefits of organic farming for the environment and personal health, organic products typically represent only a small percentage of total food sales (Ali et al., 2021, p.12). This discrepancy underscores the complexity of translating environmental concerns into actual consumer actions. In spite of increasing societal emphasis on sustainability, a significant gap remains between consumers' environmental intentions and their purchasing decisions and behavior, suggesting that there are psychological and/or sociocultural attributes to this problem that are not yet fully understood (Durif et al., 2012, p.4).

Previous research on the green gap has explored many factors contributing to the inconsistency between consumers' environmental intentions and actual purchasing behaviors, including variables like: price, packaging, and social norms (Guyader et al., 2014, p.2). Studies have consistently shown that price plays a significant role in shaping consumers' decisions regarding eco-friendly products, with cost often given as a barrier to sustainable consumption (Gleim & Lawson, 2014, p.505). But while variables like price demonstrate a significant correlation with the phenomenon, they alone do not fully explain the complexity of the Green Gap (Gleim & Lawson, 2014, p.511). Another important variable in the realm of green consumer behavior is emotions (Joshi et al., 2021, p.6). Emotion plays a significant role in green consumer behavior and can act both as a hurdle and as a facilitator. On one hand, strong emotional connections with eco-friendly brands, known as "Green Brand Love," can enhance consumers' loyalty and willingness to purchase green products (Joshi et al., 2021,

p.6). On the other hand, negative emotions like skepticism or distrust due to marketing strategies like greenwashing can act as obstacles. Consumers may become wary of green products and less likely to purchase them if they suspect insincerity or exaggerated claims about environmental benefits (Hameed et al., 2021, p.13116). Therefore, further research incorporating additional variables, such as emotional engagement with brands and attitudes towards sustainability, is necessary to develop a comprehensive understanding of the factors driving sustainable consumer behavior (El Haffar et al., 2020, p.12).

In researching the phenomenon of the Green Gap it is also important to look at consumer intentions and their consequent behavior. The Theory of Planned Behaviour (TPB), a cornerstone in understanding behavioral intentions, states that behavior is driven by behavioral intentions, which are in turn influenced by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1981, p.182). However, applying TPB to the green consumer behavior reveals its limitations. Elements such as knowledge and emotional connection to a brand are crucial in understanding the dynamics of green purchasing decisions, implying that TPB may currently not fully capture the intricate workings of eco-conscious consumer behavior (Riskos et al., 2021, p.2). The integration of TPB with insights from recent empirical research provides a solid theoretical foundation for investigating green consumer behavior. Not only does this approach acknowledge the complexity of consumer decision-making, it also explores the emotional and cognitive dimensions influencing green purchasing behaviors.

This thesis seeks to bridge this theoretical gap by exploring the relationships between Environmental Knowledge, Attitude towards Green Product Purchase, Green Brand Love, and Green Purchase Behavior. It researches whether Attitude towards Green Product Purchase and the emotional connection consumers can form with green brands, Green Brand Love, can serve as mediators in this relationship between Environmental Knowledge and Green Purchasing Behavior. This approach suggests a different and more nuanced application of TPB, where Green Brand Love is introduced as an essential component in understanding and influencing sustainable consumer behavior. The central research question of this thesis is: *To what extent does Environmental Knowledge influence Green Purchasing Behavior through the mediating effects of Attitude towards Green Product Purchase and Green Brand Love?* To answer this question, 7 different hypotheses are posited. Focusing on Environmental Knowledge, Attitudes towards Green Product Purchases and the role of brand love as well as purchasing behaviors. Through this detailed analysis, the research seeks to offer comprehensive insights into the factors that can effectively bridge the green gap, paving a

way for enhancing sustainable consumerism through informed theoretical and practical directions.

1.1. Academic relevance

The academic relevance of this research lies in its attempt to extend the Theory of Planned Behavior (TPB) by incorporating the mediating variable of Green Brand Love. Traditionally, TPB explains consumer behavior through three core components: attitudes, subjective norms, and perceived behavioral control. These factors together influence an individual's intention to engage in a specific behavior, which ultimately predicts the actual behavior (Rozenkowska, 2023, p.2672). Although this framework has been widely used and also validated, it primarily focuses on cognitive and normative factors. Therefore it potentially overlooks the significant role of emotional connections in driving behavior (Rozenkowska, 2023, p.2672). From within the workings of TPB this research is focusing on the variables "attitude" and "purchase behavior". In this research the concepts of Environmental Knowledge, Attitude towards Green Product Purchase and Green Brand Love are added to these variables as determinants in an attempt to account for the shortcomings in the TPB as uncovered by the Green Gap. By integrating Green Brand Love into this model, the research acknowledges that emotional engagement with brands, characterized by feelings of affection, passion, and commitment, has the potential to significantly influence purchasing behaviors (Hussain et al., 2022, p.160).

This study suggests that consumers' emotional bonds with eco-friendly brands can enhance their behavior in purchasing green products, therefore providing a more nuanced understanding of sustainable consumer behavior. This approach offers a more comprehensive model that includes both rational and emotional dimensions of decision-making. Consequently, it broadens the scope of TPB, allowing for a better prediction and explanation of green purchase decisions. Overall, this study improves our theoretical understanding of the relation between cognitive, normative, and emotional factors in consumer behavior. It contributes to more holistic models of environmental sustainability in marketing and consumer research.

Furthermore, Environmental Knowledge and Attitudes Towards Green Product Purchase are important in building Green Brand Love. Research has shown that consumers with a high level of Environmental Knowledge are more likely to develop positive attitudes towards green products, which in turn fosters Green Brand Love. For instance, Gleim et al. (2013) found that Environmental Knowledge significantly influences consumers' attitudes

towards eco-friendly products, which is a crucial step in developing Green Brand Love. Similar to that, Mostafa (2007) demonstrated that positive attitudes towards green products enhance the emotional connection consumers feel towards eco-friendly brands, leading to stronger Green Brand Love. These findings align with the frame of this research, integrating Environmental Knowledge and attitudes as important determinants in the TPB framework to account for the emotional dimensions of sustainable consumer behavior. By confirming these results, the study contributes to the academic realm by reiterating the relevance of these variables in building Green Brand Love and highlighting their role in promoting sustainable purchasing behaviors.

1.2. Societal relevance

From a societal perspective, understanding the mechanisms behind the green gap is important for promoting sustainable consumer practices (Essiz et al., 2022, p.68). This research aims to clarify how enhancing Environmental Knowledge and creating positive attitudes toward green products as well as nurturing a strong emotional connection with green brands, can actually motivate consumers to align their purchasing behavior with their environmental values. This alignment can be crucial in increasing sustainable consumer practices and behavior. By creating a better understanding of the gap between environmental intentions and actual purchasing decisions, this study aims to contribute to the creation of a greener world that is populated by conscious consumers.

For companies, the findings of this research can offer strategic implications for green marketing practices. In seeing the importance of building brand love within the context of sustainability, businesses can develop more effective marketing strategies. Strategies that go beyond merely highlighting the environmental benefits of their products. These strategies should aim to engage consumers on an emotional level, building a sense of attachment and also commitment to the brand. This emotional engagement not only enhances brand loyalty but also drives sustainable purchasing behaviors, as consumers are more inclined to support brands that resonate with their values (Yaqub et al., 2023, p.5).

Lastly, aligning environmental values with purchasing behavior can impact market dynamics and consumer culture by promoting widespread use of sustainable practices. Understanding the relevance of these environmental values and how they are created by Environmental Knowledge and represented in attitude towards purchase and in brand love is crucial because they influence consumer decisions (Lee. K, 2011, p.37; Fraj-Andrés & Martínez-Salinas, 2007, p.77; Hameed et al., 2021, p.13121). For both marketers and

policymakers this research underscores the need for comprehensive strategies. Strategies that might combine education, positive reinforcement, and emotional engagement to close the green gap and create a more sustainable future. This insight is especially valuable in developing effective marketing strategies that can up hold strong emotional connections with consumers, thereby encouraging consistent and sustainable purchasing behavior.

1.3. Thesis outline

This thesis is organized into five main chapters. The Theoretical Framework in chapter 2, explores the concepts of Environmental Knowledge, Green Brand Love, and the Theory of Planned Behavior (TPB). The Theoretical Framework establishes the foundation for the proposed hypotheses and conceptual model. The Methodology in chapter 3, explains the research design, the sampling strategy, operationalization of key constructs and the study's validity and reliability. The Results, chapter 4, presents the findings from all the regression and mediation analyses, providing insights into the relationships between Environmental Knowledge, attitudes, Green Brand Love, and purchasing behaviors. Finally, the Conclusion, chapter 5, discusses the theoretical, societal and managerial implications of the findings. It also highlights the study's limitations, and suggests directions for future research. This structured thesis approach seeks to address the factors contributing to the green gap and propose strategies to bridge it by enhancing sustainable consumer behavior.

2. Theoretical framework

In this section the theoretical framework for this research will be discussed. First, the concepts of Environmental Knowledge and Green Brand Love will be critically analyzed. Followed by an in-depth analysis of the Theory of Planned Behavior and its components. Subsequently, the concepts of Attitude towards Green Product Purchasing and Green Purchase Behavior will be highlighted. The understanding of these concepts and the Theory of Planned Behavior will then be used to build and set out the hypotheses that are proposed by this research. These hypotheses will be presented alongside a conceptual model of the study.

2.1. Environmental Knowledge

Environmental Knowledge entails what a consumer knows about the consequences of human behavior on the ecosystem and environmental problems (Kaufmann et al., 2012, p.249). Environmental Knowledge refers to the awareness and understanding individuals have about environmental issues and the impact of their actions (Varah et al., 2020, p.9182). This understanding forms the foundation for informed decision-making and responsible consumption. It plays a crucial role in bridging the green gap, highlighting the discrepancy between consumers' environmental intentions and their actual buying behaviors (Riskos et al., 2021, p.5). By increasing Environmental Knowledge, consumers become more aware of the consequences of their purchases, motivating them to align their actions with their environmental values.

Research by Lin and Yang (2021) into the impacts of low-carbon knowledge enriches our understanding of how knowledge shapes consumer behavior towards green products. Their findings reveal the complex relationship between different types of knowledge and low-carbon behavior, underscoring the need for targeted and accessible environmental information. Informed ideas of environmental impacts encourage consumers to engage in Green Purchase Behaviors, as shown by studies linking increased Environmental Knowledge to higher rates of eco-friendly purchasing (Lin & Yang, 2022, p.2).

Additional studies have expanded on this concept, demonstrating that environmental knowledge significantly affects consumers' attitudes and behaviors towards sustainability. For instance, Zameer en Yasmeen (2022, p.633) found that environmentally knowledgeable consumers are more likely to seek out and purchase green products, suggesting that education and spreading information are crucial in promoting sustainable consumption. Similarly, Barber et al. (2014) highlighted that consumers with higher levels of Environmental

Knowledge show greater concern for environmental issues and are more inclined to purchase from brands that they perceive as environmentally responsible (Dewi et al., 2022, p.471).

Within the context of green personal care products, the impact of Environmental Knowledge has already been extensively studied. Studies have indicated that consumers with higher environmental awareness are more likely to scrutinize the ingredients and production processes of personal care products, seeking those that align with their values of sustainability and ethical production (Nguyen et al., 2020, p.2). Research by Kim & Lee (2023, p.11) for example, demonstrated that consumers' Environmental Knowledge positively influences their attitudes towards eco-labeled personal care products, leading to increased purchase intentions.

The literature on Environmental Knowledge concludes that it is a key factor in promoting sustainable consumer behavior. By increasing awareness and understanding of environmental issues, consumers are more likely to make informed and responsible purchasing decisions, particularly in the realm of personal care products. The integration of environmental education into marketing strategies not only benefits the environment but also strengthens brand loyalty and supports the growth of the green market.

2.2. Green Brand Love

Brand love is conceptualized as a deep emotional bond between consumers and brands. More than satisfaction or preference, brand love significantly influences both loyalty and behavior in consumers. Drawing on analogies from human relationships, brand love incorporates elements of intimacy, passion, and commitment, suggesting that consumers can experience deep emotional connections with brands (Gumparthi & Patra, 2019, p.119). Research in this area has expanded substantially over the years, revealing that brand love can lead to increased consumer loyalty, support, and willingness to pay premiums. Thereby offering substantial competitive advantages and strategic benefits to businesses (Albert & Merunka, 2013, p.258).

Brand love integrates with a broader set of marketing theories by linking emotional engagement with measurable business outcomes (Gumparthi & Patra, 2019, p.94). For example, the Attachment Theory, traditionally used to describe bonds in interpersonal relationships, has been adapted to understand consumer-brand relationships, emphasizing that emotional attachment can lead to stronger brand loyalty (Loureiro et al., 2012, p.3). Similarly, the Self-Expansion Theory suggests that consumers may include brands in their self-concept, which enhances their love and loyalty towards those brands (Sohail, 2022, p.70).

In the context of green marketing specifically, Green Brand Love encapsulates the emotional connection and affection consumers develop towards eco-friendly brands, influencing their purchasing behaviors. This connection is important as it can drive consumers to choose environmentally friendly products over others, creating sustainable consumption patterns. However, the presence of greenwashing, where companies falsely claim eco-friendly practices, can negatively impact this affection. Greenwashing undermines consumer trust and loyalty, and consequently, their purchasing decisions (Hameed et al., 2021, p.13117).

The integration of brand love into marketing strategies underscores an approach to consumer-brand relationships that values emotional connections alongside functional benefits. This approach is supported by the Theory of Planned Behavior (TPB), which traditionally focuses on cognitive predictors of behavior like attitudes, subjective norms, and perceived behavioral control. By incorporating emotional factors such as Green Brand Love, marketers can develop more comprehensive strategies that not only appeal to consumers' rational decision-making processes but also to their emotional needs, thereby fostering deeper, more enduring consumer-brand relationships (Hameed et al., 2021, 13117).

In the area of personal care, Green Brand Love plays a crucial role as consumers increasingly prioritize eco-friendly and sustainable products. Personal care brands that emphasize elements such as natural ingredients, cruelty-free testing, and environmentally conscious packaging create emotional connections with their customers (Nguyen et al., 2020, p.2). This emotional bond, based on shared values and ethical commitments, enhances consumer loyalty and encourages repeat purchases. Green brands can exemplify how a commitment to sustainability and transparent practices can create Green Brand Love, leading to a loyal customer base that values both the quality of the products and the brand's dedication to environmental control. This connection does not only drive consumer behavior but it also positions these brands favorably in a competitive market, where consumers are willing to support and pay premiums for brands they trust and love (Albert & Merunka, 2013, p.263)

2.3. Theory of Planned Behavior

The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1981, is a psychological framework that predicts human behavior by assessing three key determinants: attitudes, subjective norms, and perceived behavioral control. According to TPB, an individual's behavior is directly influenced by their intention to perform the behavior. This intention, in turn, is shaped by their attitude towards the behavior, the subjective norms surrounding it, and their perceived control over performing it. Attitude towards a behavior

reflects personal evaluations, such as believing that eating organic food is healthier. Subjective norms involve perceived social pressures, like feeling that coworkers expect one to use reusable coffee cups. Perceived behavioral control relates to the ease or difficulty of performing the behavior, such as having local stores that offer a wide range of eco-friendly products, making it easier to shop sustainably (Ajzen, 1981, p.182). The TPB has been widely applied across varied fields of study, including health, marketing, and environmental behaviors, showing its capability in predicting a broad range of actions. In health, the TPB has been used to understand and predict health-related behaviors (Bosnjak et al., 2020, p.355). In marketing, the TPB has been utilized to predict consumer purchasing decisions (Ajzen & Madden, 1986, p.453). In environmental behaviors, the TPB has been applied to study actions like recycling, energy conservation, and sustainable transportation (Si et al., 2019, p.19). For instance, the extended TPB model, incorporating environmental concern as explored by Paul, Modi, and Patel (2016), significantly enhances the predictability of green product purchase intentions, underscoring the importance of environmental concern in green marketing (Paul et al., 2016, p.125).

Within the context of green consumerism, subjective norms in green purchasing include the perceived social pressures or expectations to engage in eco-friendly shopping. These norms can come from friends, family, or society at large, pushing individuals towards more sustainable choices (Nekmahmud et al., 2022, p.5) Perceived behavioral control, on the other hand, involves the ease or difficulty associated with purchasing green products, which can include factors like availability, affordability, and convenience (Ruslim et al., 2022, p.123). Both elements are integral to understanding the barriers and facilitators of Green Purchase Behavior. However, given that these elements have already been widely studied, they will not be included in this research. The element of attitude, as a part of Theory of Planned Behavior will be represented in this study. The universal applicability of TPB underscores the foundational role of these attitudes as well as norms, and control in shaping behavior.

Despite its universal applicability TPB's predictive power is not without limitations; it has been critiqued for excluding emotional influences and habitual behaviors, which can significantly affect outcomes, especially in activities that are frequent or habitual (Miller, 2017, p.586). TPB often relies on the assumption of a linear relationship between intentions and actions, which might oversimplify the complexities of behavioral execution (Armitage & Conner, 2001, p.484). Within the context of the green gap, where there is a discrepancy between consumers' stated environmental concerns and their purchasing behaviors, TPB

offers a structured framework to explore the relationships between variables that potentially influence purchase behavior besides attitude, subjective norms and perceived behavioral control (Riskos et al., 2021, p.2).

2.3.1. Attitude towards Green Purchase Behavior

"*An attitude can be defined as an enduring set of beliefs about an object that predisposes people to behave in a particular way toward the object*" (Riskos et al., 2021, p.3). Attitudes towards products are crucial as they form the basis of how consumers evaluate these products. These evaluations are often influenced by a combination of emotional and cognitive assessments. This research focuses on attitudes towards green purchasing specifically. Attitudes towards green purchasing are shaped by various factors, including personal values, environmental awareness, and trust in green claims (Cheah & Phau, 2011, p.456). Cognitive components of attitudes involve beliefs about the product's effectiveness in reducing environmental impact, cost-benefit analyses, and the credibility of the brand's sustainability claims (Chen et al., 2022, p.2). Emotionally, attitudes are influenced by feelings of responsibility, satisfaction, and sometimes guilt, associated with environmentally friendly consumption (Bøhlerengen & Wiium, 2022, p.10). Studies by Sheikh, Mirzaei, and Ahmadinejad (2023) and Taufik (2015) emphasize the role of informed and trustworthy communication in shaping these attitudes. For instance, the quality of information about a product's environmental impact can significantly affect a consumer's attitude, thereby influencing their purchase decisions. If consumers believe that the information provided is accurate and the product genuinely contributes to environmental sustainability, they are more likely to develop a positive attitude towards the product.

Attitudes towards Green Product Purchasing in the context of personal care products have been a focal point of numerous studies, highlighting the psychological and behavioral factors that drive eco-friendly consumer choices. Research indicates that positive attitudes towards green products are often shaped by a combination of environmental awareness, personal values, and perceived effectiveness of individual actions. For instance, Nguyen et al. (2019) found that consumers with strong pro-environmental attitudes are more likely to choose personal care products that emphasize natural ingredients and sustainable practices. Furthermore, Kim & Lee (2023) demonstrated that positive attitudes towards eco-labeled personal care products significantly enhance purchase intentions. Studies like these suggest that nurturing positive attitudes through education and transparent communication about the

environmental benefits of green personal care products can effectively promote sustainable purchasing behaviors.

2.3.2. Green purchase behavior

Purchasing behavior refers to the decision-making processes and actions of consumers when they purchase products or services (Rodrigues et al., 2021, p.1). This behavior is influenced by a range of factors including personal preferences, cultural norms, social influences, economic conditions, and attitudes, motivations, and perceptions (Muniady et al., 2014, p.20). Consumers' purchasing behavior is also shaped by marketing strategies, such as advertising and promotions, as well as situational factors like the availability of products and the shopping environment. Understanding purchasing behavior is crucial for businesses to tailor their marketing efforts and improve customer satisfaction and loyalty (Moser, 2015, p.168).

Green Purchase Behavior is the culmination of the above mentioned factors, representing the actual decision-making process leading to the purchase of eco-friendly products. This behavior can be measured to quantify the conversion of green intentions into action, therefore illustrating the Green Gap. Hameed et al. (2021) highlight how factors such as green advertising and greenwashing can impact these behaviors, either building trust and loyalty or causing skepticism and distrust. Incorporating insights from Sharma et al., (2022) the effects of green advertising, and the comprehensive analysis provided by Hameed et al., (2021) deepens our understanding of green purchase behavior. This behavior, as an outcome of green intentions, is influenced by the complexities of factors such as cultural, individual, ethical, political, product-related elements, and notably, the impact of green advertising. Hameed et al.'s (2021) study highlights how greenwashing can negatively affect this behavior, undermining consumer trust and loyalty towards green brands.

Green Purchase Behavior in the context of personal care products studies reveal important insights into consumer motivations and decision-making processes. Research indicates that consumers who are environmentally conscious tend to prioritize sustainability and ethical considerations when selecting personal care products. Studies have shown that factors such as eco-friendly packaging, natural ingredients, and cruelty-free testing significantly influence purchase decisions (Nguyen et al., 2020, p.2). For example, Kim & Lee (2023) found that eco-labels on personal care products positively impact consumer attitudes and increase the likelihood of purchase. Additionally, Albert en Merunka (2013) demonstrated that providing detailed information about the environmental benefits of personal

care products enhances consumer trust and willingness to pay a premium. These findings underscore the importance of transparency and environmental education in fostering green purchase behavior within the personal care sector.

2.4. Hypotheses

2.4.1. The impact of Environmental Knowledge on Attitude towards Green Product Purchase

The TPB states that attitudes towards a behavior (in this case, purchasing green products) are influenced by beliefs about the behavior's outcomes and the evaluations of these outcomes (Rozenkowska, 2023, p.2671). Environmental Knowledge enhances the consumer's ability to evaluate the benefits of green products accurately, potentially leading to more positive attitudes. Therefore, this hypothesis is grounded in the idea that greater awareness and understanding of environmental issues can directly enhance an individual's evaluation of green products, making them more appealing (Yaqub et al., 2023, p.5). Environmental Knowledge is said to sustain a positive Attitude towards Green Product Purchases by enhancing awareness of environmental issues and the efficacy of green products, aligning with findings that increased knowledge can shift consumer attitudes towards more sustainable options (Liu et al., 2020, p.10). Research indicates that consumers with higher levels of Environmental Knowledge are more likely to recognize the benefits of green products, such as reduced environmental impact and health advantages. (Hossain et al., 2022, p.4). These benefits are significant drivers of positive attitudes towards these products. For example, studies have shown that when consumers are aware of the ecological benefits of green products, their attitudes towards purchasing these products improve significantly (Park & Sohn, 2018, p.1947). Incorporating Environmental Knowledge into the TPB framework involves viewing it as a background factor that influences attitudes through more informed behavior and beliefs. As consumers become more knowledgeable about environmental impacts and the effectiveness of green products, their beliefs align more closely with pro-environmental values, thereby enhancing their Attitudes towards Green Products Purchases (Yaqub et al., 2023, p.5).

The mechanism through which Environmental Knowledge influences Attitudes towards Green Product Purchases can be explained through cognitive and affective pathways. Through the cognitive pathway knowledge empowers consumers with information about the positive impacts of green products, leading to a rational reassessment of their benefits. This reassessment often results in a more favorable attitude towards purchasing these products

(Fraj-Andrés & Martínez-Salinas, 2007, p.77). Through the affective pathway increased Environmental Knowledge can also enhance emotional engagement with environmental issues, which in turn can nurture positive emotions associated with purchasing green products. These emotions can play a crucial role in shaping attitudes (Fraj-Andrés & Martínez-Salinas, 2007, p.77). The development of this hypothesis involves integrating insights from the Theory of Planned Behavior (TPB) with empirical findings that highlight the role of Environmental Knowledge in shaping consumer attitudes. Therefore, the following is expected:

H1: *Environmental Knowledge positively influences Attitude towards Green Product Purchase.*

2.4.2. The impact of Environmental Knowledge on Green Brand Love

The concept of Green Brand Love is central to understanding consumer relationships with eco-friendly brands (Albert & Merunka, 2013, p.258). Brand love involves a deep affection and emotional connection with a brand (Batra et al., 2012, p1). According to theories of consumer behavior such as, Self-Expansion Theory, knowledge can significantly influence emotional connections by providing the basis for meaningful relationships with brands, especially when these brands' values align with the consumer's personal beliefs and values (Lin, 2022, p.3; Sohail, 2022, p.77). Research has shown that consumers who are knowledgeable about environmental issues are more likely to appreciate the efforts of green brands (Dewi et al., 2022, p.471). This appreciation can evolve into a strong emotional connection when consumers perceive that brands genuinely contribute to environmental sustainability. Studies suggest that when consumers understand the positive impact of their purchase decisions on the environment, their emotional investment in the brand increases, leading to what is referred to as Green Brand Love (Lin, 2022, p.3).

The influence of Environmental Knowledge on Green Brand Love can be understood through two mechanisms. First, through cognitive evaluation, where consumers use their Environmental Knowledge to evaluate the authenticity and effectiveness of a brand's green claims. Brands that are perceived as genuinely committed to sustainability are more likely to be loved and trusted (Hameed et al., 2021, p.13121). Second, through emotional engagement, knowledge about environmental impacts can heighten emotional responses to brands that actively avoid these impacts. This emotional engagement is a key driver of brand love (Lin, 2022, p.5). Incorporating the impact of Environmental Knowledge on Green Brand Love within the TPB framework involves understanding it as a precursor that enhances the affective component of attitudes towards behaviors (in this case, green purchasing behavior).

The more consumers know about the environment and the effectiveness of green products, the more they are likely to develop an emotional connection with brands that represent these values. (Lin, 2022, p.4) By exploring how Environmental Knowledge influences Green Brand Love, the study aims to deepen understanding of consumer behavior in green marketing, offering insights on fostering stronger brand relationships through education and engagement on environmental issues. As such, the following is hypothesized:

H2: *Environmental Knowledge positively influences Green Brand Love.*

2.4.3. The impact of Environmental Knowledge on Green Purchase Behavior

Green Purchase Behavior refers to the action of buying products that are considered environmentally friendly (Witek & Kuźniar, 2020, p.3). This behavior is an important indicator of sustainable consumer practices. The Theory of Planned Behavior (TPB) suggests that informed attitudes towards behaviors, influenced by knowledge, can lead to actual behavioral change. Environmental Knowledge is crucial as it forms the basis for informed decision-making regarding green purchases (Amoako et al., 2020, 1619). Therefore, Environmental Knowledge may enhance consumers' ability to make informed choices that align with their environmental values (Lee. K, 2011, p.37). This research suggests that enhancing consumers' environmental awareness in a focused manner can significantly drive the alignment of purchasing decisions with environmental values, highlighting the role of informed decision-making in promoting sustainable consumer practices (Lin & Yang, 2022, p.2). Empirical studies consistently show that increased Environmental Knowledge raises consumers' awareness of the benefits and necessity of purchasing green products, which can lead to a higher prospect of such behaviors. Consumers with greater Environmental Knowledge are often more aware of the ecological footprints of their purchases and tend to make more sustainable choices as a result (Siyal et al., 2021, p.14).

The influence of Environmental Knowledge on Green Purchase Behavior can be described through the mechanisms of direct and indirect influence. Direct influence through knowledge provides the factual basis that influences consumer perceptions of the importance of buying green products. This direct path from knowledge to behavior aligns with the cognitive aspect of the TPB (Paul et al., 2016, p.124). Indirect influence via Attitude Change by increased knowledge can alter consumers' attitudes towards green products, which in turn influences their purchasing behavior. This pathway is mediated by changes in attitudes, as set out in TPB (Ahmad et al., 2021, p.81). Incorporating Environmental Knowledge into the TPB

model before behavioral intentions (and actual behavior) provides the model with a concrete source of the beliefs that can form attitudes and shape behaviors (Paul et al., 2016, p.129). Within this framework, knowledge acts as a foundation element that informs attitudes, which then influence subjective norms and perceived behavioral control, all contributing to the actual purchasing behavior.

It is expected that there will be a positive relationship between Environmental Knowledge and Green Purchase Behavior. This relationship would validate the hypothesis and underscore the importance of informed consumer culture in promoting sustainable practices.. Consumers who are better informed about the environmental impacts of their consumption choices are more likely to engage in behaviors that support sustainability. As such, the following hypothesized:

H3: *Environmental Knowledge positively influences Green Purchase Behavior.*

2.4.4. The impact of Attitude towards Green Product Purchase on Green Brand Love

As previously mentioned, the concept of brand love, particularly Green Brand Love, is characterized by a strong affection and a passionate emotional bond between a consumer and a brand that reflects their values, especially environmental consciousness (Batra et al., 2012, p.1). The Theory of Planned Behavior (TPB) suggests that attitudes directly influence intentions, which in turn can create deeper relationships such as brand love, especially when the brand's actions align closely with the consumer's values (Salehzadeh et al., 2021, p.251). This is further established by literature suggesting that positive attitudes towards green products can enhance emotional connections with green brands, as consumers who value eco-friendly products are more likely to develop brand love towards companies and brands that reflect their personal values (Lin, 2022, p.15).

Positive attitudes are often linked to a stronger emotional connection with green brands, suggesting that consumers who hold favorable views on eco-friendly products are more likely to express loyalty and love towards brands that align with their environmental values (Bigné et al., 2019, p.1616). This emotional bond is crucial for Green Brand Love as it not only promotes repeat purchases but also encourages support and a higher tolerance for potential drawbacks such as higher prices. Studies have shown that consumers who believe in the benefits of green products and have a positive attitude towards these products are more likely to feel a strong connection to the brands that align with their environmental ideals (Salehzadeh et al., 2021, p.261).

The link between Attitudes toward Green Product Purchases and Green Brand Love can again be justified by both cognitive and emotional alignment. First, through cognitive alignment, consumers perceive green products to meet their personal and environmental values. Their satisfaction with these products then enhances their affection towards the brand (Hameed et al., 2021, p.249). Through emotional engagement, positive attitudes towards green products often evoke strong emotional responses, such as pride or joy from supporting environmental sustainability, which can translate into important indicators for the love for the brand (Lin, 2022, p.5).

Within the TPB framework, attitudes influence behavioral intentions, which can extend to emotional attachments such as brand love. By conceptualizing Green Brand Love as a result of positive attitudes towards green products, this hypothesis extends the traditional application of TPB from just behavioral intention into emotional connection.
The expected outcome is a positive correlation between positive attitudes towards green products and Green Brand Love. This correlation would validate the hypothesis and indicate that nurturing positive attitudes can be an effective strategy for building strong brand relationships. When consumers hold favorable views about green products, they are more likely to develop a deep, emotional bond with the brands that offer these products. Therefore the following is hypothesized:
H4: *Attitude towards Green Product Purchase positively influences Green Brand Love.*

2.4.5. The influence of Attitude towards Green Product Purchase on Green Purchase Behavior

As earlier mentioned the Theory of Planned Behavior (TPB) states that attitudes towards a behavior are important predictors of the intentions to perform that behavior, which then influences actual behavior (Ajzen, 2011, p.1123). In the context of green consumerism, a positive Attitude towards Purchasing Green Products implies that consumers value these products, believe they are beneficial to the environment, and are therefore more inclined to purchase them (Fraj-Andrés & Martínez-Salinas, 2007, p.77). Studies consistently show that when consumers hold positive attitudes towards green products, believing them to be beneficial for health, the environment, or both, they are more likely to make an actual purchase of these products (Siyal et al., 2021, p.12; Park & Sohn, 2018, p.1947; Hossain et al., 2022, p.4).

The relationship between attitude and purchasing behavior can be explained through

direct influence and indirect influence. Via direct influence, positive attitudes directly increase the prospects of purchasing behavior because attitudes shape how individuals perceive the desirability and usefulness of behaviors (Fraj-Andrés & Martínez-Salinas, 2007, p.77). , Through the indirect influence of Behavioral Intention, attitudes influence behavioral intentions, which in turn affect actual behaviors. In this pathway, the intention to purchase green products mediates the relationship between attitude and purchase behavior (Ajzen, 2011, p.1123). This hypothesis is a direct application of the TPB, where the attitude towards green products is expected to influence not only the intentions but also the actual purchase behaviors. By understanding this pathway, we can better grasp how much of the attitude towards a behavior translates into actual actions within the context of green consumerism.

It is expected that there will be a significant positive relationship between positive attitudes towards green products and the frequency or prospect of purchasing those products. Positive attitudes toward eco-friendly products are likely to translate into increased purchasing of such items. As such, the following is expected:

H5: *Attitude towards Green Product Purchase positively affects Green Purchase Behavior.*

2.4.6. The impact of Green Brand Love on Green Purchasing Behavior

Green Brand Love extends beyond simple brand preference or loyalty (Salehzadeh et al., 2021, p.251). It involves intense emotional connections and a passion for a brand, which, as mentioned before, typically results in higher levels of consumer engagement, support, and repeat purchases (Salehzadeh et al., 2021, p.253). In consumer behavior research, brand love is recognized as a powerful predictor of purchase decisions because it drives not just rational choices but also emotional and habitual purchases (Lin, 2022, p.3). Green Brand Love highlights the importance of genuine and transparent green marketing strategies to maintain this connection. Studies by Lin (2023) and Hameed et al. (2021) reveal that this emotional bond, sustained by intrinsic motivations and enjoyment derived from engaging with green products, leads to increased green purchase intentions. The impact of Green Brand Love on Green Purchase Behavior is further underpinned by research indicating that strong emotional bonds with brands can significantly influence purchasing decisions, driving consumers towards brands they feel a deep affinity for (Lin, 2022, p.5). Incorporating these findings with Taufik's (2015) insights on Green Brand Love and trust, further characterizes the importance of high information quality, trustworthiness, and persuasiveness on consumer attitudes and behaviors towards green products. It gives a perspective on the strategic importance of effectively communicated, credible green information in promoting sustainable consumer

practices (Choi & Johnson, 2019, p.152). Research in various sectors has demonstrated that consumers who exhibit strong brand love are more likely to make repeat purchases, recommend the brand to others, and pay premium prices. Specifically, in the context of green brands, consumers who love a brand for its environmental values are often more committed to supporting it by purchasing its products repeatedly (Siyal et al., 2021, p.14).

The influence of Green Brand Love on Green Purchase Behavior can be understood through three mechanisms: The first being direct influence. Strong emotional bonds with a brand can directly increase consumers' prospect of purchasing the brand's products due to the intrinsic satisfaction and joy derived from these purchases (Gumparthi & Patra, 2019, p.118). The second being loyalty and support. Green Brand Love fosters loyalty and word-of-mouth promotion, which not only reinforces the individual's purchase behavior but also influences the purchasing decisions of others (Gumparthi & Patra, 2019, p.118). The third being increased tolerance. Consumers who love a brand are often more forgiving of potential flaws and are willing to go out of their way to purchase from the brand, even if it means paying more or experiencing inconvenience (Batra et al., 2012, p.14).

It is expected that a strong positive relationship will be found between Green Brand Love and Green Purchase Behavior. This outcome would confirm the hypothesis and demonstrate the impact of emotional branding on consumer purchasing decisions. When consumers develop a deep emotional bond with green brands, known as Green Brand Love, they are more likely to consistently choose these brands' products. Because of this, the following is expected:

H6: *Green Brand Love positively influences Green Purchase Behavior*

2.4.7. The mediating effect of Attitude towards Green Product Purchase and Green Brand Love on the relation between Environmental Knowledge and Green Purchase Behavior

To develop that the relation between Environmental Knowledge and Green Purchase Behavior is sequentially mediated by Attitude towards Green Product Purchase and Green Brand Love, we need to explore a complex relationship where Environmental Knowledge initially influences attitudes towards green products, which in turn influences Green Brand Love, eventually leading to Green Purchase Behavior. This hypothesis suggests a sequential mediation model where each component has a critical role in transforming knowledge into actual purchasing behavior. The influence of Environmental Knowledge on Green Purchase Behavior is significant, acting indirectly by shaping attitudes and creating brand love, which

then translates into purchasing actions (Yaqub et al., 2023, p.5; Salehzadeh et al., 2021, p.261; Lin, 2022, p.5). This sequential mediation is reflective of TPB's structure, where attitudes and subjective norms mediate the relationship between background factors and behavioral intentions (Rozenkowska, 2023, p.2672).

Research supports the notion that knowledge can enhance attitudes, which then influence consumer behaviors (Yaqub et al., 2023, p.5). However, introducing brand love as a mediator acknowledges the emotional and relational aspects of consumer behavior, which are often just as influential as cognitive evaluations. Studies have found that when consumers not only have a positive attitude towards green products but also love the brand, their loyalty and frequency of purchase increase substantially (Albert & Merunka, 2013, p.258).

The proposed sequential mediation can be broken down into three stages. The first stage, Environmental Knowledge to Attitude, states that increased awareness and understanding of environmental issues enhance consumer attitudes towards green products by emphasizing the importance and benefits of sustainable choices (Hossain et al., 2022, p.4). The second stage, Attitude to Green Brand Love, suggests that positive attitudes towards green products create emotional attachment to brands that embody these values, evolving into Green Brand Love (Bigné et al., 2019, p.1616). The third stage, Green Brand Love to Green Purchase Behavior, indicates that emotional attachment to the brand directly influences purchase behaviors, as consumers are more likely to support brands they feel emotionally connected to (Lin, 2022, p.3).

Where the Theory of Planned Behavior (TPB) traditionally focuses on cognitive predictors of behavior, such as attitudes, subjective norms, and perceived behavioral control, this hypothesis integrates emotional factors like Green Brand Love into the pathway and enriching the traditional TPB model (Ahmad et al., 2021, p.81). It provides a comprehensive view of how rational and emotional elements can collectively guide consumer behavior, specifically in the context of environmentally friendly purchasing.

The expected outcome is that each of the mediators (Attitude towards Green Product Purchase and Green Brand Love) will significantly carry the influence of Environmental Knowledge to Green Purchase Behavior, confirming the sequential mediation model. This outcome would suggest that both cognitive and emotional factors are essential for translating Environmental Knowledge into actual green purchasing decisions. By examining how Environmental Knowledge translates into Green Purchase Behavior through the sequential mediation of attitudes and brand love, this research aims to provide a deeper understanding of the dynamics involved in sustainable consumer behavior. This approach offers insights into

how best to encourage eco-friendly purchasing among consumers and consequently how to bridge the Green Gap. As such, the following is hypothesized:

H7: *The relation between Environmental Knowledge and Green Purchase Behavior is sequentially mediated by Attitude towards Green Product Purchase and Green Brand Love.*

2.5. Conceptual model

The following model illustrates the proposed hypotheses. It indicates the expected positive correlations between the studied components and the directions of the paths of impact.
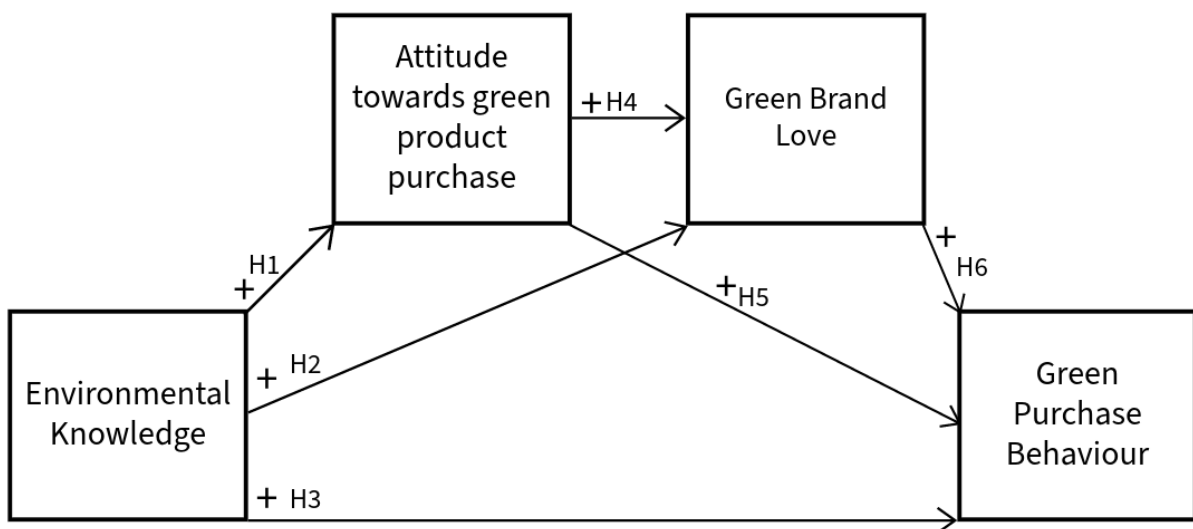
Figure 1. Conceptual model of the study

3. Methodology

In this chapter the methodology for this research will be presented. This research follows the methods of many other research in the context of green consumption, analyzing variable influence and adopting a quantitative method. This quantitative method is particularly suitable to analyze the interplay of various variables (Bowling & Ebrahim, 2005, p.191).

3.1. Research design

The research used a quantitative design to investigate the relationships between Environmental Knowledge, Attitude Towards Green Purchasing, Green Brand Love, and Green Purchasing Behavior. Quantitative research is ideal for testing hypotheses derived from theoretical frameworks, examining relationships among variables, and enhancing the objectivity and reliability of results (Creswell, 2009, p.22). This design aligns with the nature of the research questions, emphasizing the measurement and analysis of numerical data to identify patterns, associations, and correlations. Quantitative methods are suitable for testing these hypotheses from the theoretical framework, providing statistical data to support or refute the proposed relationships (Neuman, 2014, 204).

In this context, quantitative methods allowed for the identification of patterns, associations, and correlations amongst Environmental Knowledge, Attitudes Towards Green Purchasing, Green Brand Love, and Green Purchasing Behavior. By measuring these variables numerically and analyzing them using statistical tools, the research tested hypotheses both through simple regression analysis and mediation analysis. This approach provides the statistical evidence needed to support or refute the proposed relationships in the hypotheses (Neuman, 2014, p.18).

This research employed surveys, as they are a crucial part of quantitative research, effective for collecting data from a large number of respondents. Surveys enable researchers to gather standardized information efficiently, ensuring consistency in the data collected (Fowler, 2009, p.4). This standardization is crucial for comparing responses across a large sample, enhancing the generalizability of findings. Surveys capture respondents' Environmental Knowledge, attitudes, and behaviors related to green purchasing in a structured manner. They allow for the collection of self-reported data on complex constructs like "Green Brand Love" and "Green Purchasing Behavior," which can be quantified and analyzed statistically. Surveys can include various question types, such as Likert scales, facilitating nuanced measurement of attitudes and behaviors (Croasmun & Ostrom, 2011, p.20).

This survey was distributed online and on online platforms to leverage several advantages. Online surveys provide access to a diverse and geographically dispersed population, essential for obtaining a representative sample in studies examining consumer behaviors (Wright, 2006, p.2). This method is cost-effective and time-efficient, enabling the collection of large amounts of data quickly. Online platforms facilitate easy and rapid survey distribution, enhancing response rates. Additionally, online surveys can integrate multimedia elements and adaptive questioning, improving the respondent experience and data quality (Evans & Mathur, 2005, p.198). Furthermore, online surveys ensure anonymity and confidentiality, reducing social desirability bias and encouraging honest and accurate responses.

The academic nature of the research, along with the provision of the researchers' contact information, assures participants of the study's legitimacy and ethical standards (Dillman, Smyth, & Christian, 2016, p.40). As such, participants were informed that they were partaking in a survey focused on environmental consciousness and green personal care brands. Anonymity, confidentiality and the academic nature of the research were also explained. All research information was provided before the start of the survey. The researchers contact information was made available at the end of the survey to enable any possible questions or feedback from participants.

3.2. Sampling and procedure

The sampling frame of this research is made up of consumers who are 18 years or older and are familiar with purchasing green personal care products. The primary method for data collection was a structured survey. Online surveys offer a practical way of gathering large amounts of data from a diverse sample (Neuman, 2014, p.317).The survey for this research was made in online survey software "Qualtrics" and has been distributed online. To obtain a fitting sample, a convenience sampling strategy was employed. Participants have been recruited through various channels, including online platforms, social media, and through direct spread of a direct link. Informed consent has been obtained from all participants, and anonymity and confidentiality has been strictly maintained throughout the research process. The data collection took 3 weeks.

Because of the focus on Green Brand Love it was important that participants were to some extent familiar with green brands. Therefore the survey for this study focused on green brand affiliation within the personal care sector. The personal care industry not only plays a pivotal role in individual well-being but also holds substantial potential for driving sustainable

consumption patterns (Haider et al., 2022, p.2). As such, understanding consumers' relationships with green personal care brands is a good indicator of green brand affiliation.

At the start of the survey the participants were presented with some information on the content of the survey and the purpose and nature of the research. They were then asked if they were 18 years or older and agreed to the terms of the survey before they could continue. This first screening question was followed by a screening question on green personal care product familiarity. Participants were provided with some examples of green personal care brands (Aveda, Lush, The Body Shop, Love Beauty and Planet, Burt's Bees, Weleda) to help them identify what a green personal care brand is. Then participants were asked to name at least one personal care brand before they could continue, to ensure familiarity. The named/ one of the named green personal care brand(s) was consequently to be the focus of any following questions regarding Green Brand Love and Green Purchase Behavior.

Only if both screening questions were appropriately answered, participants were asked to respond to a set of predetermined questions related to Environmental Knowledge, Attitude Towards Green Product Purchasing, Green Brand Love and Green Purchasing Behavior. The survey also contained a set of demographic questions to investigate other possible patterns and to facilitate a sample description (Bowling & Ebrahim, 2005, p.199). The data collected for this sample description is set out in Appendix A.

In total 256 responses were collected. Out of those 256 responses 72,3% both agreed to the terms and conditions of the research and fitted the sampling frame, with 2 participants not agreeing to the terms of the research and 69 people not fitting the sampling frame. On top of that 18 participants were unable to finish the survey. This provided the research with 156 usable recorded responses ($N = 156$). The final data represented 19% male participants, 81% female. There were no participants that preferred not to disclose their gender or that identified as either non-binary or a third gender. The average age of participants was 30 ($M = 30,69$, $SD = 13,24$). Most respondents completed a Bachelor's degree ($N = 84$, 53%). Followed by a Master's degree ($N = 54$, 34,6%), some college ($N = 10$, 6,4%). The other education degrees only accounted for 8 participants, 5,1% of the sample .

The most selected country for nationality is the Netherlands, representing 91 participants ($N = 91$, 58,3%). Followed by Germany ($N = 10$, 6,4%) and the United States and the United Kingdom both representing 2,6% of participants ($N = 4$, 2,6%).

3.3. Operationalization

Operationalization involves defining and measuring the key constructs and concepts outlined in the conceptual framework. In this research, the operationalization process is necessary for translating abstract ideas into measurable variables.

To measure the variable of Environmental Knowledge three items from the "Perceived knowledge of environmental issues scale" were used and measured through a seven point Likert-scale ranging from "I strongly disagree" to "I strongly agree" (Mohr et al., 1998, p.52). The scale was adopted according to Hamzah en Tanwir (2021) and altered to fit this specific research. This scale includes statements such as "I am very knowledgeable about environmental issues" from the original scale (Mohr et al., 1998, p.52) and adapted items such as "compared to the average person, I am more familiar with issues related to the environment" (Hamzah & Tanwir, 2021, p.7). (See Appendix B)

The Attitude Toward Green Product Purchase variable was measured using three item, seven point Likert-scale as proposed by Chan (2001) and adopted by Riskos et al. (2021) including items such as "Purchasing green is a good idea" and scale anchors ranging from "I strongly disagree" to "I strongly agree" (Riskos et al., 2021, p.18). (See Appendix B)
As opposed to the general questions for Environmental Knowledge and Attitude Toward Green Product Purchase, for the questions on Green Brand Love and Green Purchase Behavior participants were asked to answer with a specific green personal care brands entered in the screening question at the beginning of the survey in mind.

For Green Brand Love a ten item, seven point Likert-type scale as proposed by Carroll and Ahuvia (2006) was used. This scale contains items such as "This brand makes me feel good" (Carroll & Ahuvia, 2006, p.84) (See Appendix II) and scale anchors ranging from "I strongly disagree" to "I strongly agree". The last two items on this scale were reverse coded to maintain validity in the data analysis.

Green Purchase Behavior was measured by using a three item, five point scale by Kim en Choi (2005) with items such as "I purchase the brand due to its environmental concern" and a seven point Likert- scale ranging from "I strongly disagree" to "I strongly agree" (Hameed et al., 2021, p.13124). (See Appendix B and C)

3.4. Reliability and validity

The data in this research was collected in a precise and consistent manner and has been tested for reliability and validity. Furthermore, the survey content was carefully

constructed and written to eliminate the risk of any confusion that could harm the reliability and validity of the research.

3.4.1. Factor analysis

The survey for this research utilized four multiple-item scales, which were simplified using factor analysis to examine the respective variables. The factor analysis results contain the Mean, the Standard Deviation and the Factor Loadings (See the table in fig. 2). Factor analysis is a statistical method used to identify underlying relationships between measured variables, reducing their number and detecting structure in the relationships (Field, 2013).

For Environmental Knowledge (EK), three Likert-scale items were analyzed using Principal Components extraction with Direct Oblimin rotation based on Eigenvalues (> 1.00). The KMO value was .66, $\chi2$ ($N = 156, 3$) $= 151.47$, $p < .001$, explaining 71% of the variance. Based on the factor loadings, the scale items for Environmental Knowledge were kept in one dimension.

Attitude Toward Green Product Purchase (ATPB) involved five Likert-scale items with a KMO value of .73, $\chi2$ ($N = 156, 10$) $= 339.23$, $p < .001$, explaining 80.7% of the variance. Based on the factor loadings the scale items for Attitude towards Green Product Purchase were separated into two dimensions. Each dimension is aptly named after the nature of question in the scale item, passive attitude and active attitude. The passive attitude dimension contains three items and the active attitude dimension contains two items.

For Green Brand Love (GBL), five Likert-scale items were analyzed, resulting in a KMO value of .908, $\chi2$ ($N = 156, 45$) $= 1239.73$, $p < .001$, explaining 75.1% of the variance. The scale items for Green Brand Love were also separated into two dimensions based on the factor loadings, positive association and neutral association. The positive association dimension contains eight items and the neutral association dimension contains two items.

Finally, Green Purchase Behavior (GPB) included three Likert-scale items with a KMO value of .689, $\chi2$ ($N = 156, 3$) $= 220.745$, $p < .001$, explaining 77.121% of the variance. The scale items for Green Purchase Behavior were kept in one dimension based on the factor loadings.

3.4.2. Reliability analysis

Ensuring the reliability of a research instrument such as scale is crucial because it confirms that the tool consistently measures what it intends to measure. A high reliability indicates that the results are stable and replicable over time, which is fundamental for the

validity and credibility of the research findings. Furthermore, reliable data increases the trustworthiness of the conclusions, making it essential for academic research to conduct reliability tests, such as Cronbach's α.

Cronbach's α is a measure of internal consistency, indicating how closely related a set of items are as a group. It is crucial for assessing the reliability of a scale, ensuring that the items consistently measure the same construct (Tavakol & Dennick, 2011, p.53). A high Cronbach's α (typically above 0.7) signifies good internal consistency and reliability (Tavakol & Dennick, 2011, p.54; Gliem & Gliem, 2003, p.87).

To check the reliability of this research data, reliability tests were conducted in SPSS (see the table in fig. 2). The calculated Cronnbach α had a value greater than 0.7 for all used scales (see the table is fig. 2). In the case of Green Purchase Behavior, the Cronbach α could have been improved from 0.848 to 0.871 by removing item GPB_3 (see appendix C). However because the Cronbach α was not low enough to lose information and the difference between the Cronbach α was smaller than 0.05, the item was not removed. The same goes for the removal of items GBL_1 and GBL_2 (see appendix C) to increase the Cronbach α from 0.924 to 0.928 (GBL_1) and 0.927 (GBL_2). These items were also not deleted because the relative improvement of the Cronbach α was not significant enough. To ensure validity, the last two items on the Green Brand Love were reverse coded.

Figure 2. Factor Analysis Results

Variable	Dimensions	Items	*M*	*SD*	Factor loadings	Cronbach 's α
Environmental Knowledge		EK_1	5.39	1.24	.82	.78
		EK_2	5.12	1.38	.90	
		EK_3	4.35	1.77	.82	
Attitude towards Green Product Purchase	Passive attitude	AGP_1	5.99	1.12	.81	.83
	Passive attitude	AGP_2	6.13	.97	.73	
	Passive attitude	AGP_3	5.78	1.29	.85	
	Active attitude	AGP_4	4.98	1.48	.84	.79

Active attitude		AGP_5	4.50	1.57	.95	

Variable	Dimensions	Items	*M*	*SD*	Factor loadings	Cronbach's α
Green Brand Love	Positive association	GBL_1	5.53	1.03	.59	.94
	Positive association	GBL_2	4.58	1.42	.80	
	Positive association	GBL_3	4.21	1.65	.78	
	Positive association	GBL_4	4.92	1.19	.96	
	Positive association	GBL_5	4.70	1.27	.95	
	Positive association	GBL_6	4.78	1.32	.88	
	Positive association	GBL_7	4.92	1.24	.81	
	Positive association	GBL_8	4.74	1.32	.89	
	Neutral association	GBL_9	3.32	1.60	.94	.85
	Neutral association	GBL_10	3.36	1.73	.89	
Green Purchase Behavior		GPB_1	4.72	1.51	.89	.85
		GPB_2	5.10	1.42	.92	
		GPB_3	5.67	1.14	.82	

3.5. Data analysis

The statistical software SPSS was used to filter, examine and analyze the gathered data (Landau & Everitt, 2003, 474). To test the hypotheses investigating the relationships

between Environmental Knowledge, Attitudes towards Green Product Purchases, Green Brand Love, and Green Purchase Behavior, several statistical analyses were conducted using SPSS.

To examine the direct relationships between the variables as proposed in hypotheses 1-6, linear regression analyses were conducted. This method was used to determine the degree to which changes in the Independent Variable affect the Dependent Variable (Montgomery et al., 2012, p.22). For example, a linear regression was used to explore the impact of Environmental Knowledge on Attitudes towards Green Product Purchases, Green Brand Love, and Green Purchase Behavior.

To better understand the sequential mediation effect of Attitude towards Green Product Purchase and Green Brand Love on the relationship between Environmental Knowledge and Green Purchase Behavior, a mediation analysis was conducted. A mediation analysis helps in providing a detailed understanding of how and why a predictor variable influences an outcome variable through one or more mediator variables. Specifically, the analysis assessed whether Attitudes towards Green Product Purchases and Green Brand Love sequentially mediate the relationship between Environmental Knowledge and Green Purchase Behavior. The mediating analysis was conducted using the PROCESS macro which was specifically downloaded for SPSS. For the mediation analysis model six was used (Hayes, 2013, p.9) (see figure 3).

The results of the analysis are presented in a detailed overview, including tables, charts, and narrative interpretations.

4. Results

In this chapter the results of this research will be presented. Starting with the results of the linear regression analysis, followed by the results of the mediation analysis.

4.1. Linear regression analysis

For this research hypotheses 1-6 were tested using simple linear regression analysis to understand the influence of various factors on Green Purchase Behavior. Four new variables were created by averaging items within each category: Environmental Knowledge, Attitude towards Green Product Purchase, Green Brand Love, and Green Purchase Behavior. These variables were used to fit the regression models.

Linear regression is a statistical method used to examine the relationship between a dependent variable and one or more independent variables. In simple linear regression, there is only one independent variable. The goal is to model the linear relationship between the predictor (independent variable) and the outcome (dependent variable) (Martin, 2022, p.17). The regression equation is typically written as: $Y = \beta_0 + \beta_1 X + \epsilon$ (Montgomery et al., 2012, p.38).

The significance of the model is assessed using the F-test, and the strength of the relationship is indicated by the R-squared value. The beta coefficient and t-values help determine the significance and direction of the influence of the independent variable on the dependent variable.

A simple linear regression was conducted with Attitude towards Green Product Purchase as the dependent variable and Environmental Knowledge as the predictor. The model was found to be significant, $F(1, 154) = 69.04$, $p < .001$, $R^2 = .31$. Environmental Knowledge had a positive significant impact on Attitude towards Green Product Purchase ($\beta = .56$, $p < .001$, $t = 8.309$). Thus, the hypothesis that more Environmental Knowledge has a significant impact on Attitude towards Green Product Purchase, H1, was accepted.

Another simple linear regression was conducted with Green Brand Love as the dependent variable, and Environmental Knowledge as the predictor. This model was also significant, $F(1, 154) = 37.22$, $p < .001$, $R^2 = .20$. Environmental Knowledge positively influenced Green Brand Love ($\beta = .44$, $p < .001$, $t = 6.10$). Hence, the hypothesis that Environmental Knowledge positively influences Green Brand Love, H2, was accepted.

A simple linear regression analysis with Green Purchase Behavior as the dependent variable and Environmental Knowledge as the predictor found the model significant, $F(1,$

154) = 53.04, $p < .001$, $R^2 = .26$. Environmental Knowledge had a positive significant influence on Green Purchase Behavior ($\beta = .51$, $p < .001$, $t = 7.28$). H3, the hypothesis that more Environmental Knowledge positively influences Green Purchase Behavior was accepted.

With Green Brand Love as the dependent variable and Attitude towards Green Product Purchase as the predictor, the simple linear regression model was also significant, $F(1, 154) = 55.29$, $p < .001$, $R^2 = .26$. Attitude towards Green Product Purchase had a positive significant influence on Green Brand Love ($\beta = .51$, $p < .001$, $t = 7.35$). Thus, H4, the hypothesis that Attitude towards Green Product Purchase positively influences Green Brand Love was accepted.

Another significant simple linear regression model was found with Green Purchase Behavior as the dependent variable and Attitude towards Green Product Purchase as the predictor, $F(1, 154) = 137.93$, $p < .001$, $R^2 = .47$. Attitude towards Green Product Purchase significantly influenced Green Purchase Behavior ($\beta = .69$, $p < .001$, $t = 11.74$). The hypothesis that Attitude towards Green Product Purchase positively affects Green Purchase Behavior, H5, was accepted.

Finally, a simple linear regression analysis with Green Purchase Behavior as the dependent variable and Green Brand Love as the predictor found the model significant, $F(1, 154) = 88.17$, $p < .001$, $R^2 = .364$. Green Brand Love had a positive significant influence on Green Purchase Behavior ($\beta = .60$, $p < .001$, $t = 9.39$). The hypothesis that Green Brand Love positively influences Green Purchase Behavior, H6, was accepted.

4.2. Mediation analysis

Hypothesis 7 of this research was tested using a mediation analysis. Mediation analysis is used to understand the process through which an independent variable influences a dependent variable via one or more mediator variables (Hayes, 2013, p.9). For this mediation analysis, PROCESS macro was used with confidence interval 95% and Environmental Knowledge as the X (independent variable), Green Purchase Behavior as Y (dependent variable) and Attitude towards Green Product Purchase (M1) and Green Brand Love (M2) as mediators. Because the hypothesis posits a sequential mediation with two mediators, model six was used (Hayes, 2013, p.9) (see figure 3).

The model was shown to be statistically significant $F(1, 154) = 65.84$, $p < .001$, with $R_2 = .57$, explaining 56.5% of the variance in Green Purchase Behavior. The indirect relation between Environmental Knowledge and Green Purchase Behavior through the sequential

mediation of Attitude towards Green Product Purchase and Green Brand Love was revealed to be statistically significant, β = .07, *t* = 7.28, 95%*CI* [0.03, 0.13]. It can therefore be stated that the hypothesis that the relation between Environmental Knowledge and Green Purchase Behavior is sequentially mediated by Attitude towards Green Product Purchase and Green Brand Love, H7, is supported.

Figure 3. Mediation Model 6
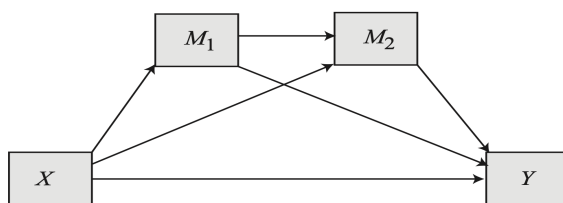
Figure 4. Data Analysis Results

Effect direction	Standardized coefficient	R^2	S.E.	Sig.		Hypothesis
EK → AGP	.56	.31	.05	< .001	H1	Supported
EK → GBL	.44	.20	.06	< .001	H2	Supported
EK → GPB	.51	.26	.07	< .001	H3	Supported
AGP → GBL	.51	.26	.08	< .001	H4	Supported
AGP → GPB	.69	.48	.07	< .001	H5	Supported
GBL → GPB	.60	.36	.07	< .001	H6	Supported
EK → AGP → GBL → GPB	.07	.57	.03	< .001	H7	Supported

Figure 5. Conceptual Model with β Results
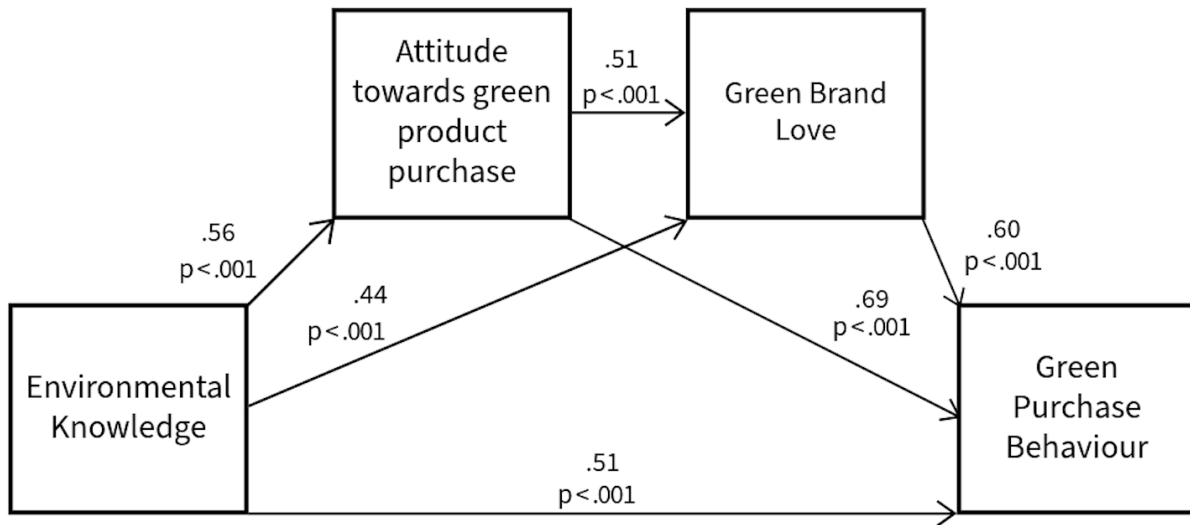
5. Conclusion

This research is set out to address the central question: "*To what extent does Environmental Knowledge influence Green Purchasing Behavior through the mediating effects of Attitude towards Green Product Purchase and Green Brand Love?*" This question stems from the growing concern over the discrepancy between what consumers' state as their environmental intentions and what their actual purchasing behaviors are (Essiz et al., 2022, p.68). Despite increasingly environmentally conscious purchase intentions, many consumers still fail to purchase green alternatives. This behavior is driven by varying cognitive and emotional factors which this study seeks to understand and discuss. The significance of this research lies in its potential to provide insights into the psychological mechanisms that drive sustainable consumer behavior. The study offers a comprehensive understanding of how Environmental Knowledge can be transformed into actual purchasing decisions through the mediating effects of Attitudes Towards Green Products Purchase and Green Brand Love, by integrating empirical data with the Theory of Planned Behavior (TPB) (Si et al., 2019, p.2). TPB has been widely used to predict and explain human behavior across various contexts, but its application in the realm of green purchasing behavior offers new ways to explore the relationship between cognitive and emotional factors in driving sustainable consumption (Riskos et al., 2021, p.5).

The motivation for this research comes from the urgent need to promote sustainable consumption patterns in the face of environmental pollution and climate change. Businesses, policymakers, and society recognize the critical role of consumer behavior in achieving sustainability goals. The inconsistency between pro-environmental attitudes and actual purchasing behaviors however, remains an obstacle. Understanding the factors that can effectively bridge this gap is crucial for designing solutions that encourage more consistent and committed green purchasing behaviors.

By integrating the Theory of Planned Behavior with empirical data, this study offers a perspective on how consumer decisions can be influenced. Ultimately this contributes to more effective strategies for promoting sustainability in the marketplace. The findings from both the regression and mediation analyses conducted in this research support the proposed hypotheses. This demonstrates a significant and positive relationship between Environmental Knowledge and Green Purchasing Behavior.

The first regression analysis showed that Environmental Knowledge positively influences Attitudes towards Green Product Purchases, indicating that consumers who are more knowledgeable about environmental issues tend to have more positive Attitudes towards

Purchasing Green Products. This finding suggests that educational initiatives aimed at increasing environmental awareness can effectively enhance consumer attitudes towards sustainability, aligning with the work of Ajzen (1991), who highlighted the importance of cognitive factors in behavioral intentions.

From the second regression analysis, the data indicated that Environmental Knowledge positively impacts Green Brand Love, implying that more aware consumers are likely to develop a strong emotional connection with green brands. The data suggests that knowledgeable consumers appreciate the efforts of green brands and thereby fostering a deeper emotional connection. This emphasizes the importance of combining educational efforts with emotional engagement strategies to foster brand loyalty, as noted by Albert and Merunka (2013), who highlighted the significance of emotional bonds in consumer-brand relationships.

The regression analyses further confirmed that higher levels of Environmental Knowledge lead to increased Green Purchasing Behavior. The results indicate that informed consumers are more likely to translate their Environmental Knowledge into actual green purchases. This highlights the role of consumer education in promoting sustainable consumption, reiterating the findings of Lin and Yang (2022), who demonstrated the direct impact of Environmental Knowledge on eco-friendly purchasing decisions.

Positive Attitudes towards Green Product Purchases were also found to significantly enhance Green Brand Love. The data suggest that positive attitudes towards green products create a stronger emotional connection to green brands. This finding highlights the relation between cognitive and emotional factors in shaping consumer behavior. This is also consistent with the Theory of Planned Behavior, which states that attitudes significantly influence behavioral intentions (Ajzen, 2011, p.180).

Furthermore, the findings demonstrated that positive Attitudes towards Green Product Purchases directly influence Green Purchasing Behavior. The data illustrates that consumers with favorable views on green products are more likely to purchase them. This reinforces the need for marketing strategies that build positive consumer attitudes towards green products, agreeing with the findings of Fraj-Andrés and Martínez-Salinas (2007) on the importance of attitudes in predicting consumer behavior.

Green Brand Love was also shown to positively affect Green Purchasing Behavior. The data analysis indicated that consumers who have a strong emotional bond with green brands are more inclined to purchase their products. This finding highlights the importance of building strong emotional connections with consumers to drive sustainable purchasing

behaviors. This is also supported by the research of Batra et al. (2012), who emphasized the role of brand love in consumer loyalty and purchase intentions.

Finally, the mediation analysis revealed that the relationship between Environmental Knowledge and Green Purchasing Behavior is sequentially mediated by Attitude towards Green Product Purchase and Green Brand Love. The significant sequential mediation effect, indicated by $\beta = .0686$, suggests that Environmental Knowledge first influences attitudes towards green products, which then influences Green Brand Love, ultimately leading to Green Purchasing Behavior. This finding provides an understanding of how cognitive and emotional factors can interact to influence sustainable consumer behavior. This offers a more integrated model of the TPB that incorporates both rational evaluations and emotional attachments.

The data analysis answers the research question by demonstrating that higher levels of Environmental Knowledge lead to more favorable attitudes towards green products and stronger emotional connections with green brands, which in turn drive Green Purchasing Behaviors (Hossain et al., 2022, p.4; Lin, 2022, p.3).

5.1. Theoretical implications

This research expands the Theory of Planned Behavior (TPB) by incorporating Environmental Knowledge and Green Brand Love. It offers a broader understanding of Green Purchase Behavior. As aforementioned, traditionally, TPB focuses on attitudes, subjective norms, and perceived behavioral control as the primary predictors of behavior (Ajzen, 1981, p.182). This study, however, reveals that Environmental Knowledge not only enhances cognitive understanding but also makes for positive attitudes towards green products. Furthermore, the inclusion of Green Brand Love highlights the critical role of emotional connections in consumer decision-making (Riskos et al., 2021, p.2)

By incorporating Green Brand Love into the TPB framework, this research provides a more comprehensive model for understanding sustainable consumer behavior. This expanded model demonstrates that both rational evaluations as variables (Environmental Knowledge) and emotional engagements as variables (brand love) are essential in predicting and influencing green purchasing decisions. This dual focus on cognitive and emotional factors aligns with recent research suggesting that consumer behavior is influenced by a combination of rational and affective components (Albert & Merunka, 2013, p.258; Batra et al., 2012, p.1).

The study's findings suggest that Environmental Knowledge serves as a foundational element that shapes consumer attitudes towards green products, which in turn nurtures emotional connections with green brands. These emotional connections, characterized as

Green Brand Love, play a crucial role in translating positive attitudes into actual purchasing behavior. This insight is particularly valuable as it bridges the gap between cognitive theories of behavior and affective components that drive consumer loyalty and commitment (Lin & Yang, 2022, p.2).

A broader perspective and better understanding of this can enrich our understanding of consumer behavior in various contexts. Especially in areas where emotional engagement is a critical driver of loyalty and purchasing decisions (Gleim & Lawson, 2014, p.505). When consumers feel they are emotionally connected, they are more likely to be loyal as well as make repeat purchases, and recommend the brand to others. This connection is built on trust and identification with the brand's values, making customers less sensitive to price changes and more committed to the brand (Hsu et al., 2017, p.147)

This research offers a model for understanding and influencing Green Purchasing Behavior. In addressing the cognitive and affective dimensions of consumer behavior, this research contributes to a deeper understanding of the mechanisms driving sustainable purchasing decisions. It offers strategies for fostering a more sustainable marketplace (Riskos et al., 2021, p.2; Fraj-Andrés & Martínez-Salinas, 2007, p.77).

5.2. Societal implications

From a societal perspective, this research addresses the crucial challenge of the Green Gap. As mentioned before, the findings suggest that enhancing Environmental Knowledge and nurturing Green Brand Love can help to bridge this gap (Hossain et al., 2022, p.4; Lin, 2022, p.15). These insights are vital for promoting sustainable consumption patterns on a larger scale (Lin, 2022, p.5). By understanding and addressing the psychological and emotional drivers behind consumer choices, society can move closer to achieving widespread sustainable consumer practices and behaviors. This alignment between values and actions is essential for creating an environmentally conscious society that gives priority to sustainability in everyday consumption.

The societal implications of this research are varied, from strategies for enhancing consumer education to supporting emotional engagement and ensuring authenticity. Policymakers can support these societal efforts through regulations, incentives, and initiatives, creating an environment for sustainable consumption (Essiz et al., 2022, p.68). The study emphasizes the need for educational campaigns that raise environmental awareness and initiatives that ensure the authenticity of green claims to prevent greenwashing (Hameed et al., 2021, 13120). Policymakers may also develop and promote some sort of certifications that

reward businesses for their environmental efforts. These certifications can separate genuine green brands from those engaging in greenwashing practices, guiding consumers in making informed choices and encouraging more businesses to adopt sustainable practices.

Governments on their turn, can support businesses by providing incentives for sustainability initiatives. Incentives could be in the form of tax breaks or grants for companies investing in green technologies and practices (Borin et al., 2011, p.82). Implementing regulations that mandate clear labeling and transparency in environmental claims ensures consumers have access to accurate and reliable information, building consumer trust and encouraging sustainable purchasing behaviors (Borin et al., 2011, p.82).

Furthermore, businesses can promote Green Brand Love through storytelling or they could leverage social media influencers, and create community programs to foster emotional connections with consumers. Once again, to ensure authenticity, strict regulations on greenwashing should be enforced, transparency standards established, and support provided for authentic green innovation. To cater to the environmentally conscious consumer and increased societal impact, businesses can also adopt sustainable supply chain practices, engage in corporate social responsibility initiatives, and innovative green products and services. By combining these efforts, policymakers and businesses can bridge the Green Gap, create an environmentally conscious society, and contribute to a greener, more sustainable future (Essiz et al., 2022, p.68; Hameed et al., 2021, p.13118; Yaqub et al., 2023,p.5).

5.3 Managerial implications

For businesses, integrating Environmental Knowledge and emotional engagement into marketing strategies is also important from a managerial perspective. Companies can enhance consumer loyalty and drive green purchases by providing transparent and accessible information about the environmental benefits of their products and by building strong emotional connections with consumers through authentic and consistent green branding (Hussain et al., 2022, p.160).

These findings highlight the dynamic nature of the relationship between cognitive and emotional factors, suggesting that strategies aimed at promoting sustainable consumption should address both elements. Educational initiatives that increase Environmental Knowledge can create a positive cognitive environment, while marketing strategies that build emotional connections with green brands can enhance effective engagement. This dual approach can effectively drive green purchasing behaviors and provide a strategy for promoting sustainability (Hussain et al., 2022, p.160; Lin, 2022, p.5,15).

First of, businesses should invest in educational campaigns to inform consumers about the environmental impact of their products. This can include detailed information on packaging, digital content, and social media posts highlighting the brand's sustainability efforts (Nguyen et al., 2020, p.3). Brands like the ones mentioned as examples in the survey (see Appendix III) have successfully used educational campaigns to strengthen their brand image and customer loyalty. Such campaigns can make a shift consumer attitudes towards green products, making them more likely to choose these options over conventional alternatives (Hussain et al., 2022, p.160).

Nurturing emotional engagement through Green Brand Love is another critical strategy. Brands can create narratives that resonate emotionally with consumers, emphasizing their commitment to sustainability and showing the real-life impacts of their green initiatives (Batra et al., 2012, p.14). Community-building activities, like organizing environmental events or supporting local sustainability projects, can also enhance the brand's reputation and foster a sense of community among consumers. This emotional engagement is important for building strong consumer-brand relationships that drive repeat purchases and long-term loyalty (Albert & Merunka, 2013, p.258).

Authenticity is a key aspect when building trust and emotional connections. To avoid greenwashing, businesses must ensure their green claims are genuine and substantiated by actual credible evidence, such as certifications from recognized environmental organizations. Transparency in reporting sustainability practices and outcomes helps maintain this consumer trust, which is fundamental for fostering Green Brand Love and loyalty (Hameed et al., 2021, 13117). This trust is essential for consumers to feel confident in their green purchasing decisions, reinforcing their commitment to sustainable brands.

As earlier mentioned, policymakers can support these efforts through regulations, incentives, and collaborative initiatives, creating and enabling an environment for sustainable consumption. Together, these actions can contribute to a more sustainable economy (Yaqub et al., 2023, p.5).

5.3. Limitations and recommendations for future research

This research contributes to the growing body of literature on sustainable consumer behavior by providing empirical evidence on the mechanisms through which Environmental Knowledge influences purchasing decisions. By showing the mediating roles of Attitudes towards Green Products Purchase and Green Brand Love, the study offers a pathway that explains how knowledge translates into behavior. This pathway can serve as a foundation for

future research exploring other potential mediators and moderators in the relationship between Environmental Knowledge and sustainable behavior (Fraj-Andrés & Martínez-Salinas, 2007, p.77; Hossain et al., 2022, p.4).

Despite its contributions, this study has several limitations that are to be addressed in future research. The reliance on self-reported data may introduce biases, as respondents might overstate their green behaviors due to any potential societal pressures. Moreover, the design of the study limits the ability to draw causal inferences between the variables. Future research should consider longitudinal studies to observe changes in Green Purchasing Behavior over time and to establish causal relationships more elaborately (Gleim & Lawson, 2014, p.511).

Also, experimental designs could help identify the effects of specific interventions on green consumer behavior. Future research could also explore other relevant factors such as the impact of pricing strategies on green purchasing decisions. Understanding how price sensitivity affects the purchase of eco-friendly products should provide valuable insights for both marketers and policymakers (Gleim & Lawson, 2014, p.505).

Furthermore, examining cultural differences in green consumer behavior would offer a broader perspective on the applicability of the findings across different contexts. For example, collectivist cultures are influenced by community norms, making eco-friendly purchases more likely when they are supported by the group (Gadenne et al., 2011, p.7687). Individualistic cultures, on the other hand, focus on personal responsibility and beliefs. Marketers and policymakers should tailor their strategies to these cultural differences to effectively promote global sustainable behavior.

Investigating the effects of greenwashing on consumer trust and Green Purchase Behavior could be another critical area for future research as it could inform strategies to avoid deceptive marketing strategies and practices and enhance consumer confidence in green products.

Lastly, studying the role of emotional engagement in different product categories and demographic frames would provide more targeted insights and suggestions for marketers. By understanding how different groups respond to emotional and cognitive stimuli, businesses can fit their strategies to effectively reach and influence diverse consumer segments.

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Appendix

Appendix A - Participant Demographics

Age	
N	156
Mean	30.69
Minimum	18
Maximum	83

Gender	Frequency	Percentage %
Male	29	18.6
Female	126	80.8
Total	1	99.4
Missing	156	100

Education	Frequency	Percentage %
High school	5	3.2
Some college	10	6.4
Bachelors degree	84	53.8
Masters degree	54	34.6
PhD	3	1.9
Total	156	100

Nationality	Frequency	Percentage %
Brazil	1	.6
Canada	2	1.3
China	2	1.3
Czech Republic	1	.6
Finland	1	.6
France	2	1.3
Germany	10	6.4
Greece	3	1.9
Hungary	1	.6
India	2	1.3
Indonesia	1	.6
Iran	1	.6
Ireland	1	.6
Italy	3	1.9
Netherlands	91	58.3
Nigeria	1	.6
Pakistan	2	1.3
Portugal	2	1.3
Romania	3	1.9
Russian Federation	1	.6
Serbia	3	1.9
South Africa	1	.6
Turkey	1	.6
Ukraine	2	1.3
UK and Northern Ireland	4	2.6
USA	4	2.6

Vietnam	2	1.3
Total	**153**	**98.1**
Missing	3	1.9
	156	100

Appendix B - Measurement Scales

Variable	Scale items	Reference
Environmental Knowledge	I am very knowledgeable about environmental issues.	(Hamzah & Tanwir, 2021, p.7)
	Compared to the average person, I am more familiar with issues related to the environment.	
	I know how to select products that produce the least carbon emissions.	
Attitude towards Green Product Purchase	I like the idea of purchasing green products.	(Riskos et al., 2021, p.18)
	Purchasing green products is a good idea.	
	I have a favorable attitude toward purchasing a green version of a product.	
	I use green personal care products.	
	I avoid buying personal care products that are harmful to the environment.	
Green Brand Love	This brand makes me feel good.	(Carroll & Ahuvia, 2006, p.84)
	I am passionate about this brand.	
	I'm very attached to this brand.	
	This brand is totally awesome.	
	This brand is a pure delight.	
	I love this brand!	
	This is a wonderful brand.	

	This brand makes me very happy.	
	I have neutral feelings about this brand.	
	I have no particular feelings about this brand.	
Green Purchase Behavior	I purchase/use this brand due to its environmental concern. (1)	(Hameed et al., 2021, p.13124)
	I will purchase/use the brand in the future due to its environmental performance. (2)	
	Overall, I am happy to purchase/use the brand since it is environmentally friendly. (3)	

Appendix C - Survey

Green Brand Love Survey

Start of Block: Default Question Block

Introduction Welcome to this survey! This survey is focused on environmental consciousness and green personal care brands. To participate in this research you must be at least 18 years old. This survey should take approximately 5-10 minutes to complete. All responses are confidential and will be used for academic research purposes only. Thank you for contributing to this research!

P.S: This survey contains credits for SurveyCircle and SurveySwap

Q1 I agree to the academic use of my survey and am 18 years or older.

- • • Agree (1)
- • Disagree (2)

Skip To: End of Survey If Q1 = Disagree

End of Block: Default Question Block

Start of Block: Section 1

Screening The following question serves as a screening question. For this research it is necessary that you are familiar with at least one green personal care brand. Familiar in this case meaning you have either used or such a brand and its products. Examples of such brands are: Aveda, Lush, The Body Shop, Love Beauty and Planet, Burt's Bees, Weleda, etc.

Instructions Please select either Yes or No.

If selecting yes please provide the brand name.

Q2 1. Are you familiar with any green personal care brands?

- • • Yes, namely (1)

_____

- • No (2)

Skip To: End of Survey If Q2 = No

End of Block: Section 1

Start of Block: Disclaimer

Disclaimer Please note that the following two sections (section 2 and 3) are about general knowledge and are not related to the green brand familiarity provided in the first section.

End of Block: Disclaimer

Start of Block: Section 2

Instructions Please indicate your agreement with the following statements on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree)

Q3 Evironmental Knowledge

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
I am very knowledgeable about environmental issues. (1)	●						
Compared to the average person, I am more familiar with issues related to the environment. (2)	●						

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
I know how to select products that produce the least carbon emissions. (3)	●						

End of Block: Section 2

Start of Block: section 3

Instructions For each statement, please indicate your level of agreement from 1 (Strongly Disagree) to 7 (Strongly Agree)

Q4 Attitude

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
I like the idea of purchasing green products. (1)	●						
Purchasing green products is a good idea. (2)	●						
I have a favorable attitude toward purchasing a green version of a product. (3)	●						
I use green personal care products. (4)	●						
I avoid buying personal care products that are harmful to the environment. (5)	●						

End of Block: section 3

Start of Block: Disclaimer

Disclaimer For the following two sections (section 4 and 5), please answer the questions about a brand you listed in the first screening question.

End of Block: Disclaimer

Start of Block: Section 4

Instructions For each statement, please indicate your level of agreement from 1 (Strongly Disagree) to 7 (Strongly Agree)

Q5 Green brand love

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
This brand makes me feel good. (1)	●						
I am passionate about this brand. (2)	●						
I'm very attached to this brand. (3)	●						

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
This brand is totally awesome. (4)	●						
This brand is a pure delight. (5)	●						
I love this brand! (6)	●						
This is a wonderful brand. (7)	●						
This brand makes me very happy. (8)	●						
I have neutral feelings about this brand (9)	●						
I have no particular feelings about this brand. (10)	●						

End of Block: Section 4

Start of Block: Section 5

Instructions For each statement, please indicate your level of agreement from 1 (Strongly Disagree) to 7 (Strongly Agree)

Q6 Purchase behaviour

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neutral (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
I purchase/use this brand due to its environmental concern. (1)	●						
I will purchase/use the brand in the future due to its environmental performance. (2)	●						
Overall, I am happy to purchase/use the brand since it is environmentally friendly. (3)	●						

End of Block: Section 5

Start of Block: Section 6

Q7 Age

_____

Q8 Gender

- ● • • • • Male (1)
- ● • • • Female (2)
- ● • • Non-binary / third gender (3)
- ● • Prefer not to say (4)

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Q9 Education level

- • • • • • High school (1)
- • • • • Some college (2)
- • • • Bachelors degree (3)
- • • • Masters degree (4)
- • PhD (5)

☐

Q10 Nationality

▼ Afghanistan (1) ... Zimbabwe (1357)

End of Block: Section 6

Start of Block: End

Survey conclusion Thank you for taking the time to complete this survey. Your responses are vital to our understanding of green purchasing behaviour and the factors that influence it. If you have any further comments or would like to know more about this study, please contact:

lotte.vollebregt@hotmail.com

End of Block: End