



UNIVERSIDADE  
CATÓLICA  
PORTUGUESA

EFFECT OF PSYCHOLOGICAL FACTORS ON  
GREEN PURCHASE INTENTION:  
A MEDIATING ROLE OF GREEN TRUST AND  
ENVIRONMENTAL RESPONSIBILITY

Dissertation presented to Universidade Católica  
Portuguesa to obtain a Master's Degree in Psychology in  
Business and Economics

By

Danica Wünschmann Santos

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## **Abstract**

In times of climate change, sustainable consumer behavior is an important field of research. It is therefore becoming increasingly important to understand the complexity of sustainable consumption. This master thesis examines the influence of empathy and environmental guilt on consumers' purchase intentions for environmentally sustainable products. Building on existing literature and theories such as the theory of planned behavior, this study examines how these psychological factors, together with green trust and environmental responsibility, influence green purchase intentions. The empirical analysis was conducted using a quantitative online survey with 273 participants. The results show that both empathy and environmental guilt significantly increase green purchase intentions. Furthermore, environmental responsibility mediates these relationships, highlighting its crucial role in promoting sustainable consumption. However, green trust did not show a significant mediating effect. These findings can inform marketing strategies and policies aimed at promoting environmentally friendly behavior among consumers, thus contributing to the overall goals of sustainability and climate change mitigation.

**Keywords:** Sustainable Consumption, Psychological Factors, Empathy, Environmental Guilt, Green Purchase Decision

## **Resumo**

Na presente era de alterações climáticas, o comportamento do consumidor sustentável é uma importante área de investigação. Compreender a complexidade do consumo sustentável está a tornar-se cada vez mais importante. Esta tese de mestrado examina a influência da empatia e da culpa ambiental nas intenções de compra dos consumidores de produtos ambientalmente sustentáveis. Com base na literatura existente, este estudo analisa a forma como estes factores psicológicos, juntamente com a confiança verde e a responsabilidade ambiental, influenciam as intenções de compra ecológica. A análise empírica foi realizada através de um inquérito quantitativo online com 273 participantes. Os resultados mostram que tanto a empatia como a culpa ambiental aumentam significativamente as intenções de compra ecológica. Para além disso, a responsabilidade ambiental medeia estas relações, destacando o seu papel crucial na promoção do consumo sustentável. No entanto, a confiança ecológica não mostrou um efeito mediador significativo. Estas conclusões podem informar as estratégias e políticas de marketing destinadas a promover um comportamento ecológico entre os consumidores, contribuindo assim para os objectivos globais de sustentabilidade e mitigação das alterações climáticas.

***Palavras-Chave:*** Consumo Sustentável, Factores Psicológicos, Empatia, Culpa Ambiental, Decisão de Compra Verde

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## **List of Abbreviations**

EG	Environmental Guilt
ER	Environmental Responsibility
GPI	Green Purchase Intention
IRI	Interpersonal Reactivity Index
NAM	Norm-Activation-Model
TPB	Theory of Planned Behavior
VBN	Value-Belief-Norm Theory

# **1. Introduction**

## **1.1 Background and Problem Statement**

People worldwide are becoming more and more aware of sustainable solutions as the fight against climate change becomes increasingly important. The detrimental effects of economic expansion and mindless consumerism are one of the main causes of the deterioration of the ecological environment (Jing et al., 2022). It is therefore crucial for the well-being of nature and the future of humanity that consumer behavior changes in the direction of environmentally friendly consumption with less harmful effects on the environment. In the face of these growing environmental concerns, citizens are placing greater emphasis on sustainable development as a means of preserving both the environment and society (Dobson, 2007). As a result, the concept of environmentally conscious purchasing and marketing has rapidly gained popularity. More than 80 % of customers worldwide saw at least a slight difference in their green purchasing behavior in 2022 compared to 5 years ago (Tighe, 2022). Nearly half of them indicated they purchased sustainable products significantly more frequently. Consequently, companies are offering a growing variety of sustainable alternatives. Therefore, it is also becoming increasingly important for companies to understand the factors that drive individuals to make sustainable purchasing decisions, as this knowledge is essential to align their strategies with consumer demand for environmentally friendly products (Joshi & Rahman, 2015). By understanding these factors, companies can better tailor their offerings and communications to encourage green consumption.

The decision to choose more environmentally friendly products can depend on many factors, specifically psychological factors have an influence on consumers' (green) buying decisions (Peattie, 2010). The influence of these on evaluations, choices, and judgments has long been a significant area of study in consumer behavior and psychology (Williams et al., 2014). From proving that emotions, like cognitions, affect consumption, the field's focus has shifted to a deeper comprehension of what motivates people and what emotional states influence decision-making. When it comes to sustainable consumer behavior, these psychological factors are critical since consumers struggle to make decisions that fulfill their individual needs while also taking into account larger environmental and ethical concerns.

One of these psychological influencing factors is empathy, whose effect on various pro-environmental attitudes and concerns has been shown in numerous studies (Berenguer, 2007; Ericson et al., 2014). It has been demonstrated that cultivating an active and

sustainable mindset requires interpersonal skills such as empathy in people (Ericson et al., 2014). Consequently, empathy could encourage people to make sustainable choices. Previous studies have primarily focused on inducing state empathy and empathy with nature (Jing et al., 2022; Berenguer, 2007), while it remains controversial whether empathy as a trait can also have an influence on sustainable purchasing decisions. Researchers emphasize the importance of empathy as a promising subject for further research and interventions to improve environmental appreciation and protection, resulting in more sustainable decisions and attitudes (Brown et al., 2019).

Another factor that could have an influence on sustainable choices is the consumers' sense of environmental guilt. People's guilt over the environment grows along with the importance of environmental issues. A study by Greendex (2014) examined consumer behavior in eighteen different nations. The statement "I feel guilty about the impact I have on the environment" was found to be agreed or strongly agreed upon by nearly a third of the 18.000 responders. Moreover, prosocial behaviors seem to reduce feelings of guilt, almost like a kind of compensation for the damage done (Tangney, 1991). Thus, environmental guilt is another psychological factor that could lead to pro-environmental behavior.

In addition, studies have investigated the mediating effect of green trust and environmental responsibility on various environment-related factors, e.g. consumption values, product knowledge, and green purchase behavior (Amin & Tarun, 2020; Wang et al., 2019).

However, whether these factors actually lead to a green purchasing intention or mediate this relationship is still unexplored. These challenges give rise to the objectives of this study, which are set out below.

## **1.2 Objectives and Contribution**

As already mentioned, sustainable choices are influenced by various factors (Lichev, 2017). The aim of this thesis' study is to gain a deeper insight into the psychological factors that drive environmentally conscious decisions. It seeks to gain an understanding of the concept of green purchasing behavior and the role of trait empathy and environmental guilt in influencing consumers' intention to purchase environmentally sustainable products.

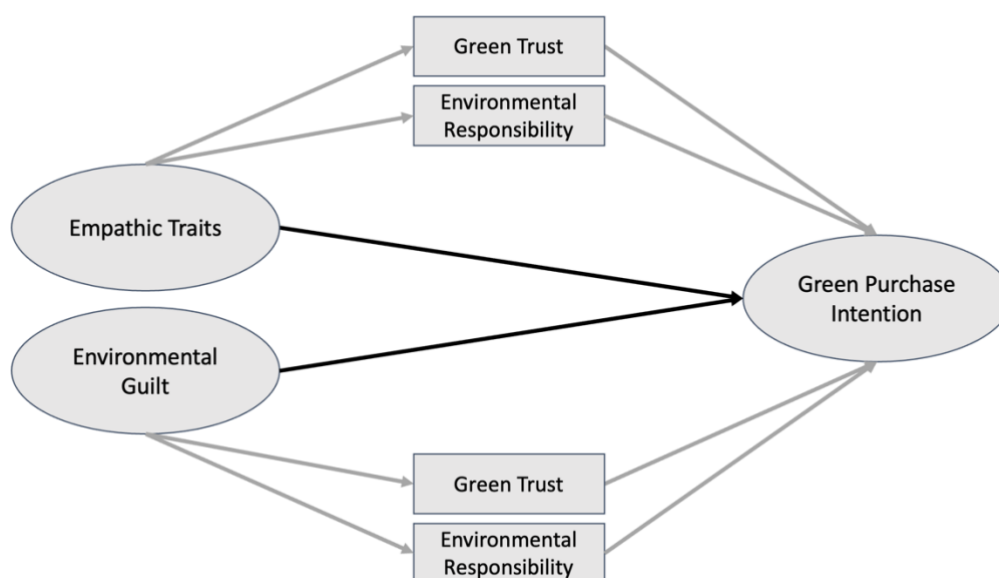
This thesis builds on various studies that have conducted research in the field of sustainable consumption (Berenguer, 2007; Brown et al., 2019; Williams et al., 2014). The analysis of the scientific literature revealed that various psychological factors have a positive influence on several environmental variables, such as the willingness to buy sustainably

(Lichev, 2017). Research demonstrated that promoting empathy can be an effective approach for generating more environmentally conscious beliefs and behaviors (Brown et al., 2019). Additionally, research indicates that environmental guilt can encourage pro-environmental behavior (Mallett, 2012).

The question now arises as to what influence trait empathy and the feeling of environmental guilt have specifically on green purchase intention. Accordingly, this study aims to provide answers to the following research questions:

1. Do people with empathic traits have a higher purchase intention when it comes to sustainable products?
2. Does having a higher sense of environmental guilt mean having a higher intent to buy green products?
3. Does green trust mediate the relationship between those psychological factors (empathy and environmental guilt) and peoples' green purchase intention?
4. Does environmental responsibility mediate the relationship between those psychological factors (empathy and environmental guilt) and peoples' green purchase intention?

For this reason, empathy, environmental guilt and green purchase intention are measured in this study. Furthermore, the effect of two other psychological factors, green trust and environmental responsibility, are measured, which will serve as mediators in this model (see Figure 1)



**Figure 1.** *Research Model.*

This study aims to provide a general psychological understanding of characteristics that may hinder or enhance people's understanding of and responses to climate change. It contributes to the existing knowledge about green purchasing behavior and offers a more complex perspective on the impact of psychological elements. Additionally, it can offer marketing professionals practical recommendations for creating strategies that effectively encourage sustainable consumption. The research questions can assist businesses in comprehending the factors that influence consumers' decisions to purchase green products or not. Above all, the mediator analysis's conclusions can be used as a guide to demonstrate the role that green trust plays and whether or not businesses should promote their products with the goal of gaining or enhancing this trust. Furthermore, it sheds light on the significance of environmental responsibility as a main factor influencing consumers' perceptions and behaviors towards sustainable consumption. Understanding the mediating effect of environmental responsibility can help businesses tailor their marketing strategies to emphasize the importance of environmentally friendly practices, thereby strengthening consumer trust and fostering positive attitudes towards green products.

### **1.3 Outline and Structure**

The first part of this study covers the theoretical background. It deals with consumer behavior, in particular with sustainable consumption. Subsequently, psychological factors influencing the purchasing decisions and, consequently, purchasing intentions will be examined. Given the focal point of this study on consumers' empathy and the experience of environmental guilt, these aspects will be scrutinized in detail. The mediating factors of green trust and environmental responsibility will then be elaborated upon more extensively. Following this, three key theories relevant to comprehending the purchasing process will be introduced: the Theory of Planned Behavior, Value-Belief-Norm Theory and the Norm Activation Model.

The methodology of the empirical research of this thesis is then presented. Firstly, the research questions and hypotheses are explained. In the following chapter on methodology, the procedure of the study is described in more detail. Finally, the results are presented, explained, and critically analyzed in the discussion, along with the theoretical and practical implications. The thesis concludes by addressing its limitations, suggesting directions for future research, and providing a final conclusion.

## **2. Literature Review**

In the following chapter, the theoretical background that forms the basis for this study is explained in more detail. First, consumer behavior, sustainable consumption and the green purchase are described, followed by a specific examination of the psychological aspects that influence consumer purchasing behavior. Next, an expanded description of the two factors – empathy and guilt – that form the foundation of this study is given. Lastly, the other variables – green trust and environmental responsibility – whose mediating effect is examined, are discussed. Finally, three different theories are discussed that play a major role in the decision-making process

### **2.1 Consumer behavior**

Khan (2007, p.2) defines consumer behavior as the “decision-making process and physical activity involved in acquiring, evaluating, using and disposing of goods and services.”. This definition suggests that consumer behavior involves more than just the purchase of products or services and that it begins in the mind of the consumer long before an actual purchase is made. It is multifaceted, dynamic, and complex. Ramya & Mohamed Ali (2016) define this as the process through which people choose, pay for, and use products and services that satisfy their wants and needs. Various elements such as psychological, social, and economic factors as well as personal traits, shape an individual's identity and influence their choices, shopping patterns, buying behavior, the brands they favor, and store preferences. A purchasing decision is the result of the interaction of all these factors.

According to Kotler and Keller (2012) consumers go through five stages while making purchases. These phases involve identifying the problem, gathering information, weighing potential solutions, making the purchase, and engaging in post-purchase activity. This process begins long before the actual transaction and can continue for a significant time afterward. Buyers consider a variety of factors while selecting a good or service, including price, quality, influencers, present and future values, usability, and others (Sari et al., 2022). The stimulus-response model provides a framework for understanding consumer purchasing behavior. This model posits that both environmental cues and marketing efforts become apparent to the consumer. Ultimately, the buyer's specific purchasing choices are influenced by their individual characteristics and decision-making process. These factors include social, cultural, psychological, and personal variables (Kotler, 2001). These phases of the consumption process can pose a challenge to environmental and social sustainability. Due

to the acceleration of climate change, the field of sustainable consumption continues to evolve.

## **2.2 Sustainable Consumption**

Numerous research indicates that the developing idea of "sustainable consumption" lacks a standard definition (Jackson, 2004). The primary distinction between definitions is the extent to which they suggest more efficient, more responsible, or simply less consumption. However, a working definition of sustainable consumption was offered at the Oslo Symposium in 1994 and was given as “the use of goods and services that respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations” (Ofstad et al., 1994).

Sustainable consumption can be divided into three main categories: ecologically, socially, and economically sustainable consumption (Jackson, 2014). A key component of environmentally sustainable consumption is reducing the impact on the environment. This involves purchasing goods with minimal carbon footprints, energy efficiency, renewable resource content, and recyclable or biodegradable materials in order to reduce waste (Seyfang, 2006). To decrease transportation-related emissions, some examples include buying electric cars, utilizing solar power, and consuming locally grown food. Socially sustainable consumption ensures that products and services are produced under fair and ethical conditions (Balaji et al., 2022). This includes fair trade products, supporting local businesses and communities, and avoiding products from companies that exploit workers or violate human rights. For example, buying from companies that guarantee fair wages and safe working conditions promotes social justice. Economically sustainable consumption encourages long-term economic practices that avoid causing poverty or exploitation (Paavola, 2001). This involves spending on goods and services that benefit the local economy, give balanced economic returns to all stakeholders, and ensure the long-term viability of economic activity. Investing in local products, for example, and selecting ethical banking institutions all contribute to a secure and sustainable economy<sup>1</sup>.

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<sup>1</sup> Due to the focus of this study, sustainable behavior in the following text refers exclusively to ecologically sustainable consumption.

As governments throughout the world take steps to reduce environmental damage and promote sustainable development, there has been a considerable increase in legislation and regulation in the field of sustainability (Ladan, 2018). A primary goal of the updated European Union Sustainable Development Strategy is to promote sustainable patterns of production and consumption (Nash, 2009). It demands alterations to the production, utilization, and disposal of goods and services while taking consumer and producer behavior into consideration. Consumer demand and consumption are increasingly evolving toward a more sustainable pattern and this legislative reform drives producers to match this demand with more ecologically friendly products and new consumption possibilities (Staniškis, 2012).

Early attempts at sustainable consumption concentrated on using technology to reduce waste and increase resource efficiency (O'Rourke & Lollo, 2015). In addition to these strategies, different approaches have been made to influence people's consumption patterns via infrastructure and educational initiatives. Restructuring the political economy that upholds and encourages consumerist lifestyles has been also the subject of several studies. Using public power and consumer concern to influence broader changes in government and corporate economic operations is a topic of great interest in these approaches (Spaargaren & Oosterveer, 2010). More recent research has questioned politics and power by tying individual environmental awareness to collective processes of change in socio-technical structures (Grossmann & Creamer, 2017).

Ever since policy makers began addressing the issue of sustainability, understanding the motivations behind environmentally destructive consumption practices has become a significant area of research (Anantharaman, 2018). Mass consumption society has been identified by sociological and anthropological studies as the primary cause of the acceleration of environmental deterioration. There is now a consensus among academics, activists, and policymakers that achieving sustainability goes beyond merely greening production or limit population growth. It necessitates a comprehensive examination of cultural influences, institutional frameworks, and individual consumer behaviors.

### **2.3 Green Purchase (Intention)**

The term "green purchase" describes consumer actions related to buying green products in order to conserve resources and preserve the environment (Zhang & Dong, 2020). Green products play a central role in sustainable consumption, as they are developed and produced with the aim of minimizing their ecological footprint and thus enable

sustainable consumption in the first place (Ottman et al., 2006). In an effort to preserve or improve the environment, green products are recognized for using fewer toxic materials, generating less pollution, and reducing or eliminating hazardous waste. They may be less harmful to the environment than typical items since they are recyclable, renewable, reused, or decomposable (Dangelico & Pontrandolfo, 2010). In addition to lowering environmental risk, green products can raise consumer and societal living standards. The Commission of the European Communities (2001b, p.3), in particular, emphasizes the critical role that green products play in advancing the concept of a "new growth paradigm and a higher quality of life, through wealth creation and competitiveness". Green products provide excellent quality and low total costs to consumers and society through efficient resource usage, minimal environmental impacts and risks and reduction or elimination of waste from the start (Ottman et al., 2006).

Just like the purchasing process itself, the green purchase process is influenced by various factors (Zhuang et al., 2021). The reasons behind customers' sustainable consumption are especially significant since supporting a wider adoption of sustainable consumption practices requires an understanding of these drivers (Jackson, 2004). Instead of for financial gain, consumers are thought to consume sustainably for symbolic reasons. Due to this, the advantages of sustainable consumption for customers are primarily psychological. Sustainable consumption can boost the self-esteem and encourage social interaction, personal development, and self-improvement (Etzioni, 2013). Three areas comprise the influencing aspects of consumer tendencies toward making green purchases: social factors, consumer individual characteristics, and psychological factors (Engel et al., 1995). Social factors refer to family, social class, and reference groups. Individual characteristics include attitudes, lifestyle, and interests. Psychological factors, on the other hand, primarily include demand, motivation, and cognitive factors. The impact of various individual and social factors on consumer sustainable consumption practices has been studied by many researchers in developed countries (Lee, 2014). However, the majority of these studies have not taken into account the influence of psychological variables on such behavior (Soron, 2010). Additionally, it has been suggested that there are a number of consumer traits and sustainable consumption attributes that call for more research and comprehension (Brinkmann & Peattle, 2008).

Green purchase behavior begins with the intention to buy environmentally friendly products (Zhuang et al., 2021). Ajzen (1985) defined behavioral intention as an individual's motivation to execute a specific action, which is shaped by conscious planning and decision-

making. Because most human behaviors are voluntary and controlled by motives, they can be predicted based on intentions. Chen & Chang (2012) define green purchase intention as the potential desire of consumers to acquire products that are favorable to the environment, in order to protect it. This intention serves as a decisive basis for the motivation and influence on the actual purchase of goods and services (Zhuang et al., 2021). It represents the first phase in which people indicate a tendency and willingness to purchase, which is frequently impacted by needs, wants, and outside influences.

Numerous studies, particularly in the field of sustainability, focus on consumer intentions as a predictor of actual behavior (Oreg & Katz-Gerro, 2006). Boldero (1995), for instance, discovered that attitudes toward recycling predicted the intentions for recycling and that intentions to recycle newspapers directly predicted actual recycling. Chan (2001) posited that the assessment of green purchase intention is a crucial variable in evaluating both current and future green purchasing decisions. Moreover, the meta-analysis by Zhuang et al. (2021) revealed that the customers' intention to make green purchases is a key indicator of their green purchase behavior. Therefore, this thesis focuses on measuring green purchase intention as a central aspect of consumer behavior.

## **2.4 Psychological Factors**

Consumer decisions are influenced by various psychological factors that shape individuals' behaviors (Lichev, 2017). They are significant in each person and represent the unique characteristics and reaction patterns of consumers, which have a powerful influence on their purchasing behavior. Certain factors have a "visible" nature, making it easier to identify and quantify their effects. Others act "under-layer" and manifest in different ways, but their influence on mental processes is evident. The most influential factors, which are explained below, include motivation, perception, attitudes, personality and emotions (Callwood, 2013). Other influential factors that are central to this thesis are empathy, environmental guilt, green trust and environmental responsibility, which are discussed in detail in the following chapters.

*Motivation:* Motivation is the state of an inner need that drives actions to achieve specific goals (Trehan & Trehan, 2007). It refers to the inner force that urges individuals to perform certain actions and is often described as a strong, persistent inner influence that initiates and directs behavior (Kler et al., 2022). People are motivated when they have the desire to perform a certain action, buy a product or fulfill a certain need or interest. These motivations can arise from psychological needs, such as the desire to belong, or from

physical needs, such as hunger or thirst (Vansteenkiste et al., 2020). Abraham Maslow created a hierarchy of needs in order to describe how motivation affects behavior in people (Maslow, 1958). Every criterion level corresponds to a different need that people attempt to meet. The five levels of needs are: physiological needs, safety, belonging, esteem, and self-actualization. Maslow believed that prior to satisfying other wants, the most basic physiological needs, such as the need for food or water must be addressed.

*Perception:* Perception is the process by which people make sense of the world around them using information acquired by their senses (Berlyne, 1951). An individual attributes meaning to stimuli or events in their environment by drawing on their prior knowledge and experiences regarding the informational stimuli associated with the products or services they encounter (Lichev, 2017). Humans assess their needs, values, and expectations in a subconscious manner. Consequently, they select, process, organize and interpret the stimuli. The three key components of perception that have an effect on how customers perceive information are selective attention, selective retention, and selective understanding (Lavie et al., 2004). “Selective attention” refers to a person's capacity to identify and focus on particular environmental cues. The term “selective retention” describes how people are unable to retain every piece of information they process. This indicates that consumers are prone to forgetting certain messages and commercials they encounter from a behavioral consumer perspective. “Selective understanding” describes how customers interpret information to support preexisting beliefs.

*Attitudes:* Attitudes are defined as a “person’s degree of favorableness or unfavorableness with respect to a psychological object” (Ajzen & Fishbein, 2000, p. 2). It is understood as persistent positive or negative cognitive assessments, feelings, and behavior patterns toward a certain thing or concept (Kotler, 2001). Social interactions, cultural factors, and individual experiences all play a role in the formation of attitudes (Schuman & Johnson, 1976). They act as mental models that direct behavior and decision-making by affecting how people view and handle different situations. Attitudes play a vital role in determining peoples’ behavior, as they function as filters that shape the way people perceive and respond to their surroundings. Thus, evaluation is the primary element of attitudinal responses, as people assess along dimensions like good–bad or like–dislike based on their available ideas, concepts, objects, and behavior (Ajzen & Fishbein, 2000). Since traditional perspectives on attitude theory believe that attitudes predict behavior, these play a fundamental role in the theory of consumer decision-making (Newholm & Shaw, 2007).

*Personality:* Personality refers to the consistent patterns in behavior that individuals display throughout their lives (Snyder, 1983). It reflects how people behave regularly across different situations and over time. These traits help to distinguish individuals and make their behavior more predictable in various settings, provided these characteristics are stable. Personality is an important factor that shapes the consistent and unique way in which individuals express themselves in different situations (Allport, 1937). Motivational aspects of personality traits help to select, motivate and stimulate behavior. However, it is possible for a person to have contradictory qualities. Moreover, behavior is constantly situation-specific since characteristics are always evolving and highly dependent on the dynamic conditions of their surroundings, making an overly rigid or simple concept impossible. Numerous theories exist for categorizing the range of personality types found in the population, including the Three Factors Model and the Five Factor Model (Zuckerman et al., 1993).

*Emotions:* Emotions are internal psychological processes that are made up of physiological, cognitive, expressive, motivational, and affective components (Frenzel et al., 2009). The physiological component describes physical processes that accompany an emotion. The cognitive component comprises thought processes during the experience of an emotion. Verbal and non-verbal communication represent the expressive component. The behavior that results from an emotion is referred to as the motivating component. Emotions are felt and are therefore not pure thoughts. Every emotion is defined by a typical psychological experience known as the "affective core", which is either pleasant or unpleasant. This is a key factor in the evaluation of experiences and serves as a signaling instrument for the interpretation of situations. Studies aimed at how emotions affect decision-making in general indicate that emotions are powerful, pervasive, predictable, and they can sometimes enhance or hinder the decision-making process (Lerner et al., 2015).

When it comes to sustainable consumer behavior, the above factors are crucial as people struggle to make choices that satisfy their own needs while taking into account broader environmental and ethical considerations. The complex mental processes of individuals have a significant impact on the course of sustainable purchasing decisions, from environmental knowledge and personal values to the emotions associated with pro-environmental choices (Sari et al., 2022). The degree to which psychological elements affect a consumer's perception of and reaction to the environment is directly correlated with the strength of that consumer's inclination to make a purchase decision after considering those factors (Gu et al., 2021).

The following chapters provide an overview of the literature on the two psychological elements that are the subject of this thesis: Empathy and Environmental Guilt, which can be categorized under the latter two factors, Emotions and Personality. In addition, the two mediators Green Trust and Environmental Responsibility are explained in more detail.

#### **2.4.1 Empathy**

The extensive literature shows that there is a variety of diverse definitions for the concept of empathy rather than one that is universally accepted. However, there are a few fundamental elements that can be found and recognized in different theories. Based on the general psychology literature, empathy can be described as an interaction between affective and cognitive elements, an emotional capacity to feel the same emotions as another, or an intellectual capacity to understand and identify another's perspective (Cuff et al., 2016). It is a multifaceted ability that incorporates both emotional and cognitive aspects to appropriately understand another person's present feelings and their significance (Kalisch, 1973). Some definitions indicate two constructs: cognitive and affective empathy (Batson et al., 1987). Cognitive empathy refers to the capacity to comprehend the emotions of another person. Affective empathy addresses the emotional experience evoked by an emotional stimulus. It is not necessary for the empathic feelings of the observer to match the feelings of the other person (Stotland, 1978). Achieving true empathy congruence is very difficult, even if the two people's feelings of empathy are comparable, it is unlikely that they will ever be identical.

Empathy is a complex emotional response that results from a combination of inherent characteristics and situational factors (Lazarus, 1991). The term can be further classified as a trait or a state (Albiero et al., 2009). Empathy as a personality trait is implied by the characteristic of empathy, denoting an ability or skill to understand and share the feelings of others. On the other hand, empathy as a state suggests that empathic reactions depend on the circumstances, denoting a situation or context. According to the characteristic approach, some people are naturally more empathetic than others, and this ability does not change with time. Certain variety in empathetic capacity can be attributed to genetic and developmental variables (Eisenberg & Morris, 2001), as well as anatomical variances (Banissy et al., 2012). As a result, while empathy techniques may be almost universal in nature, each individual may use them differently and experience different outcomes (Davis, 1980). However, the influence of a number of situational factors on empathic responses has also been

demonstrated, such as the similarity between the observer and the target person (Eklund, 2009), sentiments (Pithers, 1999) and perceived power (Galinsky et al., 2006). Empathy is therefore a result of the interaction between situational and attribute influences.

Whether empathy necessarily has a behavioral outcome is controversial in research. Several authors have claimed that empathy is not directly related with a behavioral consequence, despite evidence suggesting that empathy frequently results in a behavioral reaction (Eisenberg & Miller, 1987). Nevertheless, the common understanding of empathy typically occurs at an earlier phase, implying that empathy and response behavior are considered independently. According to Polashek (2003), situational conditions or competing goals might cause empathy to be felt even in the absence of a corresponding behavioral reaction. Furthermore, empathic actions might occur before empathy, as in emergency situations (Pithers, 1999).

While empathy is elicited naturally, it can also include conscious control mechanisms (Cuff et al., 2016). When encountering emotional stimuli, empathic processes are activated spontaneously but are also subject to control by higher cognitive functions. According to neuroscientific research, empathy is triggered automatically when one perceives an emotional counterpart (Singer et al., 2004). Empathy is also a mental state that can be examined, controlled, and altered through techniques like reframing (Hodges & Wegner, 1997).

Blair (2005) asserts that not only another person's feelings but also additional emotional factors can cause empathy. Three situations can give origin to such stimuli. Firstly, meeting someone who has recently had a distressing experience. Secondly, the words of a third party can evoke empathy for a target person who is not present. And thirdly, cues relating to a fictional or hypothetical person can also trigger empathy (e.g. fictional characters in movies). The observer's perception and understanding, rather than the actual emotionality of the target object, are the most important considerations to take into account when an emotionally charged stimulus is present (Cuff et al., 2016). The subsequent emotional experience, in terms of both feeling and understanding, matches the emotion directly experienced or imagined.

It should also be emphasized that the emotional source is external and does not come from within oneself (De Vignemont & Singer, 2006). Individuals feeling empathy recognize that the other person's emotion constitutes what is causing them to feel this way. Essentially, it is about the ability to resonate with and grasp the emotions of others while recognizing that they are different from your own emotions.

All in all, the concept of empathy encompasses a wide range of experiences and emotions, from having empathy for others to feeling the same emotions as them, understanding what others are thinking and feeling, and even losing sense of self and other (Hodges & Klein, 2001). A wide range of affective, cognitive, and behavioral elements are included in it. One important and distinctive aspect of human empathy is that it is not restricted to relationships with family members, nor does it require the real detection of a distress signal or emotional contagion to initiate it (Cuff et al., 2016). Rather, it can emerge through cognitive processes like conscious rationalization and imagination, and it can even be extended to non-human entities like members of other species.

Studies indicate that more empathic people are more altruistic and helpful (Empathy-Altruism Hypothesis; Persson & Kajonius, 2016), and are more prone to feelings of guilt (Tangney, 1991). Moreover, trait empathy was investigated and discovered to be a strong predictor of environmental behavior (Moore & Yang, 2020). Whether this is also a predictor specifically for green purchase intentions remains unclear.

#### **2.4.2 Environmental Guilt**

Guilt is defined as “the feelings of remorse and acts of reparation that accompany real or imagined wrongdoings, and their functions and consequences in people's lives” (Zahn-Waxler & Kochanska, 1990, p. 183). Feelings of guilt are understood as negative emotions that arise from transgressing internal standards and norms (Thøgersen, 2006). They can lead to internal self-punishment for not complying with personal norms. Since personal norms are often internalized social norms, there is a correlation between social expectations of behavior and the experience of guilt. Like empathy, guilt can be defined as a predisposition to feel guilty (“trait guilt”), or as an emotion (“state guilt”), referring to a momentary condition (Lascu, 1991). Feelings of guilt are among the aversive and “self-conscious” moral emotions (Tangney et al., 2007), and are naturally prosocial, since they enhance interpersonal connections (Baumeister, 1999). It is a type of sensation brought on by one's own actions or inactions that is regretful, remorseful and painful. These feelings have an impact on the relationship between moral action and moral principles and are an essential component of the human moral system. In contrast to regret, which is more closely associated with intrapersonal harm, guilt is more closely associated with interpersonal harm (Berndsen et al., 2004). While guilt is connected to one’s self identity, shame is associated with social identity. Guilt may differ from shame in that it can be associated with approach

rather than retreat and be related to the action rather than the self (Baumeister et al., 1994). It is typically associated with taking accountability and the controllability of harm.

In research, there are several aspects concerning guilt as an emotion or a cognitive judgment (Xu et al., 2011). Whereas a person may become aware that they have done something ethically wrong and should be punished without feeling guilty, it is evident that emotions play a part in feelings of guilt (Ratcliffe, 2010). However, this does not imply that guilt is merely an emotion that is separate from judgment. A type of cognitive judgment is what sets apart the emotion of guilt from other similar sensations like shame and regret (R. H. Smith et al., 2002). We can be guilty whether or not we feel guilty. While it is possible to feel guilty without experiencing it, guilt is not a completely separate emotion from interactions with objects and people outside of oneself. Researchers argue that internalizing and recognizing ethical evaluations of one's own behavior from real or imagined others is a necessary component of guilt (Tangney et al., 2014). Moreover, the irreversible results of one's own actions are the core of guilt feelings. The actions themselves cannot be undone, however the consequences can be partially or fully mitigated. Because guilt focuses on previous transgressions, it frequently includes a significant anticipating component and is therefore a retroactive emotion (Baumeister, 1999). It is a self-reflective emotion that arises from a person's internal evaluation of behavior in the context of a negative experience. In contrast to a mere reaction to external events, guilt emphasizes the introspective and internal character of moral self-evaluation. These feelings can arise from the revelation of undesirable qualities of the self (Tangney et al., 2014). According to Tracy & Robins (2004) introspection occurs when a person reflects on their perceptions of themselves and assesses the extent to which the event that triggered their emotions is consistent with these perceptions. Negative self-conscious emotions such as guilt and shame are due to a mismatch between current identity and desired identity or aspirations. This incongruence results in difficulty accepting the negative event while striving to maintain one's identity. It can encourage individuals feeling guilty to make amends, apologize, and make restitution in order to repair mutual relationships (Tangney, 1991). This suggests that guilt may serve a useful purpose by encouraging positive behavior. Engaging in prosocial actions helps to reduce feelings of guilt, acting as a way to compensate for any harm caused (Keltner et al., 2014).

Based on this understanding of guilt in interpersonal contexts, environmental guilt or eco-guilt refers to a negative emotional state that occurs when individuals recognize a discrepancy between their actions and their values in relation to environmental sustainability

(Mallett, 2012). Eco-guilt is particular in that it relates specifically to the environment and to the feeling that one has failed to meet personal or societal expectations to minimize environmental damage. This emotion is driven by a sense of responsibility for the environmental consequences of one's behavior and can lead to discomfort when individuals realize that their actions are not in line with environmental values (Ferguson & Branscombe, 2010). Environmental guilt is closely related to the broader understanding of guilt as a socially oriented emotion that often motivates corrective behavior (Parkinson & Illingworth, 2009). These feelings of guilt are often linked to moral norms regarding environmental responsibility, with the emotional response serving as an internal signal to change behavior (Harth et al., 2013). Research by Ferguson & Branscombe (2010) extended this definition by highlighting collective environmental guilt, where individuals feel responsible not only for their own actions but also for the environmental damage caused by the wider group or society. This collective dimension of environmental guilt suggests that feelings of guilt can arise not only from personal behavior, but also from a broader identification with society's environmental failures.

Like interpersonal guilt, environmental guilt encourages individuals to take action to alleviate emotional discomfort (Rees et al., 2015). This can be realized through environmentally friendly practices such as recycling, reducing consumption or supporting sustainable initiatives (Mallett, 2012). Reactions to environmental guilt can take many forms (Mallett & Swim, 2004). Some people respond by taking environmentally friendly actions to alleviate their guilt. Others, however, tend to rationalize their environmentally harmful behavior by downplaying the urgency of environmental problems or justifying their behavior to avoid guilt. Schmuck & Vlek (2003) assume that such rationalizations can serve as a defense mechanism to preserve one's own self-image in the face of contradictory environmental values and actions.

Although responses differ, environmental guilt has been shown to motivate corrective behaviors aimed at reducing environmental damage (Harth et al., 2013). This raises the question of how effectively guilt can lead to enduring pro-environmental actions and decisions. Research suggests that guilt may be a powerful motivator for prosocial behaviors, including pro-environmental actions aimed at reducing harm and conforming to environmental norms (Rees et al., 2015). The question now arises as to whether feelings of environmental guilt can actually lead to green purchasing intentions.

### 2.4.3 Green Trust

Trust is defined as “assured reliance on the character, ability, strength, or truth of someone or something” (Merriam-Webster Dictionary, 2024). It is characterized as the readiness of one entity to make itself vulnerable to the conduct of another entity with the anticipation that the latter will carry out a specific action significant to the trust giver, regardless of the other party's capacity for monitoring or control (Mayer et al., 1995). Trust is commonly viewed as a mechanism that mitigates perceived transaction risk by increasing the expectation of favorable outcomes and certainty about the trustees' behavior (Zhuang et al., 2021). The foundation of trust rests on three core principles: honesty, kindness, and ability (Schurr & Ozanne, 1985). Thus, trust is linked to the degree to which an individual is willing to place confidence in another based on their perception of these three qualities. While kindness is described as a person's benevolent intentions and motivations, honesty and ability represent the expectation that a person will act truthfully and competently in fulfilling their responsibilities. A low degree of trust can be caused by negative attitudes or poor communication, among other things (Kim et al., 2004). Trust can effectively make up for incomplete information by enhancing a person's sense of self-assurance and internal security; as a result, it lessens the difficulty of risky decision-making tasks (Luhmann, 1979). Consequently, developing trust implies a certain level of risk.

Within the marketing domain, trust relates to the degree to which a customer perceives a retailer's brand, services or items as dependable (Flavián et al., 2006). Trust plays a critical role in shaping consumer relationships and brand loyalty (Morgan & Hunt, 1994). It helps reduce perceived risk and uncertainty, particularly in purchasing decisions where consumers have limited information or face complex choices (Chaudhuri & Holbrook, 2001). Companies build trust through consistent quality, transparency, and maintaining positive customer experiences, which in turn leads to stronger consumer commitment and long-term brand loyalty (Delgado-Ballester, 2004).

Green Trust refers to the readiness to rely on a good, service, or brand because one believes in its potential to perform successfully in the environment due to its reputation, ability, and quality (Chen, 2013). When buying environmentally friendly products, consumers often need a higher level of trust than with conventional products, as environmental claims are more difficult to verify (Yadav & Pathak, 2017). Consumers develop trust in green products when they have positive expectations about the environmental integrity and actions of brands, which in turn influences their intention to buy and support these products (Fang et al., 2011). Furthermore, brand transparency and

consistent communication of environmental commitments play a crucial role in fostering green trust (Martínez, 2015). Previous research has shown the significance of trust in establishing long-term competitive advantages (Wen & Chi, 2013). A Statista study shows that the suspicion of greenwashing and a lack of transparency plays a significant role in the reluctance to buy sustainable products and services (Statista, 2022b). One of the main reasons why a company can lose the trust of its customers is an overstatement or misrepresentation of the environmental friendliness of its products (Kalafatis et al., 1999). Customers who doubt a product's environmental dependability, utility, or competency are also likely to doubt its environmental competence, which creates doubts about it being trustworthy (Y. Chen & Chang, 2012). Consequently, when customers' expectations differ from the actual product, their level of satisfaction decreases significantly and affects what they buy (Wang et al., 2019).

#### **2.4.4 Environmental Responsibility**

Responsibility involves the obligation to recognize the impact of one's actions on others and society and to act in a way that is ethically and socially appropriate (Auhagen & Bierhoff, 2000). It is a key component of moral and ethical decision-making and requires individuals to weigh personal desires against the potential consequences for others. Responsibility involves not only the recognition of personal obligations but also the societal expectation to ensure others act ethically and appropriately (A. M. Smith, 2007). It is a crucial component of building and maintaining trust within communities, organizations, and society in general (Williams, 2002).

Environmental responsibility is characterized as a person's sense of duty or obligation to take action against specific environmental problems or against environmental deterioration in general (Fransson & Gärling, 1999). This sense of responsibility motivates individuals to take measures to reduce their negative impact on the environment. According to Webster (1975), socially conscious consumers are those who try to utilize their purchasing power to influence social change or who consider how their private consumption may affect the public. Roberts (1993) assumes that an environmentally conscious consumer is also a generally socially conscious consumer. According to him, this type of customer is someone who supports organizations that work for positive social change or who buys goods and services that they believe will have a positive or less harmful impact on the environment. Similarly, Chen (2016) argues that an individual's moral responsibility plays a crucial role in comprehending their intentions, particularly when it comes to environmental preservation

and eco-friendly buying behaviors. Moreover, the perception of consequences is the foundation for any sense of responsibility to save the environment (Zhuang et al., 2021). The tendency of individuals to make environmentally responsible purchases rises strongly as their sense of responsibility grows.

The concept of personal responsibility for environmental issues is closely associated with personal norms. According to Abrahamse & Steg (2009), personal norms refer to the expectations that individuals have about their own behavior in different contexts. These norms are often shaped by a sense of moral responsibility towards others or the environment. However, Kaiser et al. (1999) point out that a moral component is not always necessary for a sense of personal responsibility. Individuals may feel obligated to act in certain ways due to social pressure or societal expectations, such as from governmental organizations or cultural customs.

Theories indicate that persuading people and organizations to accept accountability for their contribution to environmental problems and to change their daily behavior to reduce negative impacts would be feasible through environmental responsibility (Barr, 2003).

## **2.5 Theories**

The Theory of Planned Behavior (TPB; Ajzen, 1985) and the Value-Belief-Norm Theory (VBN; Stern et al., 1999) are two of the most significant theories that serve as the foundation for most of the research on consumer behavior and are frequently applied to predict intentions and behavior (Ajzen, 1991). Another notable model is the Norm Activation Model (NAM), which sheds light on the motivation of individuals to adhere to social norms (Schwartz, 1977). These theories can thus help to better comprehend environment-related intentions and behavior and therefore will be explained in more detail below.

### **2.5.1 Theory of Planned Behavior**

The TPB is a psychological theory developed by Ajzen (1985) that explains how a person's intentions to engage in a particular behavior are influenced by their attitudes, subjective norms, and perceived behavioral control. Ajzen (1991) developed the TPB as an extension of the Theory of Reasoned Action (TRA) to address behaviors influenced by external factors. The TRA was limited in predicting behaviors that could be easily controlled by individuals, so Ajzen introduced the TPB to account for the level of control people have over their actions. In line with Bandura's (1977), concept of self-efficacy, which is the belief

in one's capability to perform a behavior successfully, the TPB incorporates perceived behavioral control (PBC). PBC represents an individual's belief in how easy or difficult it is to execute a particular behavior and is included as a predictor of both intention and behavior. The TPB is predicated on the assumption that a person's behavioral intention plays a significant role in predicting whether or not they will engage in a specific behavior (Ajzen, 1985). Three primary elements determine behavioral intention:

*Attitude toward the behavior:* This component expresses how an individual feels about an act or behavior in general (Ajzen, 1991). It means assessing the expected positive and negative aspects of engaging in the behavior. Essentially, it involves determining whether one holds a favorable or unfavorable perception of this activity. A positive attitude is linked to a greater probability of intending to act out the planned action.

*Subjective Norms:* Subjective norms are the perceived social pressures or influences on a person to engage or not engage in a specific behavior (Ajzen, 1991). A person's view of what significant others like friends, family, or society in general, expect of them shapes these norms. A person is more likely to intend to engage in the behavior if they believe that others expect them to.

*Perceived Behavioral Control:* It is a person's perception of how easy or difficult it is to perform this particular behavior (Ajzen, 1991). It indicates their confidence in their capacity to complete the task. This component was included in the TPB in order to take into consideration behaviors that might be impacted by external factors. People are more likely to carry out an action when they have a strong sense of control over it.

Summarizing, the TPB can be applied as a theoretical framework to examine general pro-environmental behavior (Kaiser et al., 1996). Consumer's attitudes towards the purchase of a particular good or service are related to their attitude towards this action (Ajzen, 1985). The TPB acknowledges that understanding why people hold particular attitudes and how these attitudes convert into intentions to carry out a specific conduct depends critically on an individual's beliefs. The model was applied in various studies in the field of sustainable consumption, for instance, it was utilized to improve the prediction of the purchase of fair trade products (Jin Ma et al., 2012) and the sustainability interests of Gen Z consumers (Kara & Min, 2023) as well as home recycling behavior (Kaiser & Gutscher, 2003).

### **2.5.2 Value-Belief-Norm Theory**

The VBN model is a conceptual framework that provides insight into how individuals behave in relation to environmental concerns (Stern et. al 1999). It implies that attitudes and

opinions toward other people and the environment are the result of a process in which the behaviors are heavily influenced by individual's *values*. Schwartz (1992, p. 21) defines a value as a “desirable transsituational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity”. It is believed that values affect behavior indirectly by drawing attention to and shaping perceptions of information that is consistent with their values (Stern et al., 1999). These values may include self-respect, fairness, or concern for the welfare of others. According to the theory, pro-environmental behavior is determined by three different sorts of value orientations: egoistic, altruistic, and biospheric (De Groot & Steg, 2008). Strong egoistic values lead to the consequences for one's own resources being recognized and taken into account. People with strong altruistic values, on the other hand, are more concerned about the impact on other people. Individuals who hold high biospheric values are concerned about the impact on the natural world and the environment. People's general attitudes about nature and their relationships with the environment are shaped by these value orientations.

Personal *beliefs* influence one's perceptions regarding environmental issues and the effects of certain actions (Stern et al., 1999). They may be affective, i.e. based on emotions, or cognitive, i.e. based on information. Individuals are more conscious of the effects of their actions on the environment the more established these fundamental beliefs are.

Lastly, accepting personal responsibility triggers the activation of a personal *norm* of conduct or a sense of moral obligation towards the environment (Stern et al., 1999). The standards or societal expectations that direct pro-environmental conduct are known as environmental norms, which are created by humans based on their values and beliefs (Stern, 2000). For instance, adopting recycling as a personal norm could result from the conviction that environmental protection is crucial. This final component in the model is the one that directly influences behavior. All other factors in the theory may have direct impacts in some situations without the norms, as well as indirect effects through the norms (Stern, 2000; Stern et al., 1999). Personal norms are activated by these particular beliefs, and can impact a variety of sustainable behaviors (Stern et al., 1999). They also establish whether the person believes that acting in an ecologically responsible manner is morally required of them (Steg et al., 2005).

Research on environmental attitude and behavior has been extensively utilized the VBN model. It has been used to measure commitment to biodiversity protection (Menzel & Bögerholz, 2010) and to investigate organic food consumption (Zepeda & Deal, 2009). It has also been applied, for example, to gain a better understanding of the support for

environmentalism (Stern et al., 1999) and eco-consumer behavior in general (Jansson et al., 2011).

### **2.5.3 Norm Activation Model**

The NAM is a theoretical framework in social psychology developed by Schwartz (1977), aiming to explain how people tend to engage in pro-social behavior based on internalized moral norms. It is one of the most important theories that describes how and which normative factors influence (environmental) behavior (van der Werff & Steg, 2015). Prior studies highlight how crucial personal norms are to comprehending people's pro-environmental behavior (Thøgersen, 2009). According to the theory, adopting specific personal values, perceiving that objects important to those values are in danger, and thinking that one's own actions can assist minimize the threat and restore the values lead to pro-environmental behaviors (Stern et al., 1999).

Steg & de Groot (2010) propose four different variables that stimulate pro-social behavior involvement. First, a person's level of understanding of the implications of their actions is referred to as their *problem awareness*. The *assigning of responsibility* is determined by their feelings of accountability for the results of these actions. Third, an individual's ability to recognize alternatives and evaluate the results of their behavioral choices is known as *outcome efficacy*. The *ability of the individual to participate* in pro-social or pro-environmental behavior is the final concept. The premise of this theory is the activation of personal norms (Stern et al., 1999). When people learn of a potential environmental or social problem their emotional reactions and subsequent behavior are influenced by their pre-existing personal norms.

The NAM has already been applied to the explanation of behavioral intentions and pro-environmental behaviors by several studies such as reducing personal vehicle use (Nordlund & Garvill, 2003) and recycling (Bratt, 1999).

### **3. Empirical Analysis**

After an introduction to the relevant literature, the research questions and hypotheses development are presented. In addition, the methodology and the procedure used for the survey of the conducted study are explained in more detail.

#### **3.1 Hypotheses Development**

The focus of this thesis is on the influence of psychological factors, in particular empathy and feelings of environmental guilt, on consumers' green purchase intention, as well as the mediating roles of green trust and environmental responsibility. The hypotheses to be empirically tested are derived from the research questions already identified in the objectives chapter (see Chapter 1.2), which examine whether trait empathy and environmental guilt impact green purchase intention, and if green trust and environmental responsibility mediate this relationship.

As mentioned above, according to Kotler (2001), numerous values influence purchasing decisions. Previous studies have highlighted the importance of psychological factors in driving sustainable consumer behavior (Busic-Sontic et al., 2017; Hidalgo-Crespo et al. 2023), which serves as the basis for the first research question investigating the influence of empathy traits on green purchase intention.

An agreeable personality is closely associated with higher levels of empathy and compassion, which are key drivers of pro-environmental behavior (Ashton & Lee, 2009). Hidalgo-Crespo et al. (2023) found that the Big Five personality traits significantly influence pro-environmental activities, suggesting that innate characteristics of personality play a crucial role in shaping environmental attitudes and behaviors. For example, Busic-Sontic et al. (2017) demonstrated that personality traits directly impact energy consumption through their study on energy efficiency and the Big Five model.

Similarly, Moore & Yang (2020) examined how empathy elicited by an environmentally friendly video game predicted behavioral intentions to protect the environment, further highlighting the role of empathy. A study by Berenguer (2007) also showed that inducing empathy for a natural object, such as damaged nature in photographs, led participants to allocate more resources to environmental programs. Jing et al. (2022) also investigated the neural mechanisms involved in empathy for nature and found that participants who were exposed to images of environmental damage bought more green products and had fewer decision conflicts.

Another study has extended Berenguer's (2007) and Jing et al. (2022) findings by inducing empathy for another human being rather than for animals or plants suffering from environmental changes. Empathy was induced by asking participants to take the perspective of a human victim of environmental change. The results show that this perspective-taking approach significantly increased pro-environmental intentions and engagement, suggesting that empathy toward other humans, as well as nature, can foster environmental action (Pahl & Bauer, 2013). Brown et al. (2019) claim that a lack of empathy towards ecology and other individuals limits efforts to protect the environment and improve sustainability. Pro-social and pro-environmental identities and behaviors are fostered through the development of empathy in society and towards other organisms (Rifkin, 2009).

In addition to empathy, altruistic values have been identified as crucial in environmental behavior. Consumers with strong altruistic values tend to pay more attention to environmental issues, as they are more likely to exhibit empathetic traits (Persson & Kajonius, 2016). Consequently, the development of empathy could be a promising area for further research and intervention to improve connectedness to nature and appreciation of the environment (Brown et al., 2019).

Drawing directly from these studies, the factors influencing green purchase intention are expanded, with a focus on empathy as a trait, to gain a more comprehensive perspective on consumer behavior concerning green products. The question arises as to whether general empathy as a trait can also have this effect and whether these individuals are more likely to make green purchasing decisions. This leads to the directed Hypothesis 1.

*Hypothesis 1: Empathic traits positively influence green purchase intention.*

A significant body of research concludes that sustainable consumption decisions are greatly influenced by consumers' emotions, among other things (Joshi & Rahman, 2015). However, the specific role of environmental guilt in driving green purchase intentions remains relatively unexplored. Several studies have examined the influence of guilt on various environmentally friendly behaviors (Mallett, 2012; Moore & Yang, 2020). These formed the basis for the second research question that deals with the effect of people's feelings of environmental guilt on the intention of buying green products.

Research shows that guilt has a social component and often drives altruistic actions to alleviate the discomfort it creates, which in turn can lead to prosocial behavior (Parkinson & Illingworth, 2009; Lindsey, 2005). The meta-analysis by Shipley & van Riper (2022) found significant correlations between pro-environmental behaviors and anticipated pride

and anticipated guilt, suggesting that these emotions play a role in both intended and observed environmental actions. Mallett (2012) explored how environmental guilt influences pro-environmental behavior, finding that exposing violations of environmental protection regulations can trigger guilt, which in turn encourages sustainable behavior. The study concluded that environmental guilt is a strong predictor of pro-environmental intentions, independent of broader pro-environmental beliefs.

As already mentioned above, the purpose of the study conducted by Moore & Yang (2020) was to determine whether playing an environmentally friendly video game influences players' intentions to act sustainably in the future. The results showed not only that empathy is a predictor of environmental behavioral intentions, but also that guilt is a significant predictor. The results suggest that environmental communication must successfully apply the moral effect of guilt to promote pro-environmental behavior.

Elgaaied (2012) examined the effect of anticipated guilt on recycling behavior and found that guilt acts as a key mediator between environmental awareness and pro-environmental intentions. Guilt fully mediates the relationship between environmental concerns and recycling intentions, highlighting its influence on green behavior. The study by Haj-Salem et al. (2022) explored the moderating function of environmental consciousness on guilt and green purchasing in the Middle East. The study revealed that anticipated guilt could either decrease or increase green purchasing intention, depending on an individual's level of environmental consciousness. When environmental consciousness was low, guilt reduced purchase intention, but when it was high, guilt had a positive effect. Suggesting that feelings of guilt about the environment are influenced by different variables and can have different effects on environmental behavior.

Similarly, Liang et al. (2019) and Antonetti & Maklan (2014) investigated the relationship between moral emotions and pro-environmental intentions in terms of avoiding pollution and engaging in green purchases. Negative emotions such as feelings of guilt and judgment of others were positively related to green purchasing behavior.

These studies support the hypothesis that guilt, particularly when anticipated, plays a key role in influencing pro-environmental behavior. Guilt motivates people to act in line with internalized norms, as suggested by the TPB (Ajzen, 1985) and the NAM (Schwartz, 1977), both of which posit that individuals are driven by the desire to align their behavior with personal and social norms to avoid negative emotions. Therefore, guilt can serve as a strong motivator for adopting green behaviors. This effect is to be confirmed in the current thesis by applying the second directed hypothesis, which is as follows:

*Hypothesis 2:* A feeling of environmental guilt positively influences green purchase intention.

The third research question deals with the mediating effect of green trust on the relationship between psychological factors and green purchase intention. This research question is divided into two sub-hypotheses, with Hypothesis 3a relating to empathy and Hypothesis 3b to environmental guilt. A meta-analysis by Joshi & Rahman (2015) revealed several key motives, promoters and barriers that influence consumers' decisions to buy environmentally friendly goods. A lack of consumer trust in environmentally friendly products was found to be one of the biggest barriers to purchasing environmentally friendly products. For this reason, green trust is included as a variable in the model for this thesis. Previous research has already demonstrated the mediating effect of green trust on the relationship between purchase intention and other variables, highlighting its importance in encouraging green purchasing behavior (Amin & Tarun, 2020; Wang et al., 2019).

The aforementioned study by Amin & Tarun (2020) confirmed the mediating effect of green trust on the relationship between consumption values and green purchase intention. Similarly, Chen & Chang (2012) found that green perceived risk and green perceived value were mediated by green trust in promoting green purchasing intentions. Additionally, Wang et al. (2019) demonstrated that green product knowledge promotes green purchase intention, with green trust acting as a mediator. As a possible explanation for their results, they suggested further research to analyze psychological factors such as altruistic values, since consumers with altruistic values would pay more attention to environmental problems. Studies indicate that altruistic and helpful individuals tend to exhibit more empathic characteristics and behavior (Persson & Kajonius, 2016).

Furthermore, Hypothesis 3a is supported by psychological theories that suggest that empathy strengthens social trust and cooperation, which can also extend to trust in environmental engagement or product quality (Rifkin, 2009). As Rifkin (2009) argues, empathic engagement fosters deeper interpersonal and social trust, which is critical to promoting sustainable behaviors. This link is central to understanding how empathy directly influences consumer trust in green products, further supporting the mediating role of green trust in consumer behavior. Based on these findings, the following hypothesis is proposed:

*Hypothesis 3a:* Green trust mediates the relationship between empathic traits and green purchase intention.

Studies have also indicated that there is a positive correlation between guilt and trust in environmentally friendly products or brands when it comes to environmental issues, supporting Hypothesis 3b (Mallett 2012). This could be attributed to the fact that guilt encourages people to act in a way that is consistent with their moral principles by supporting and therefore favoring environmentally friendly options (Antonetti & Maklan, 2014). Harth et al. (2013) support this by showing that collective guilt over environmental damage can lead to greater trust and commitment to green products as a means of moral compensation.

Furthermore, Giner-Sorolla (2013) highlights how moral emotions such as guilt influence decision-making by reinforcing behaviors that align with ethical values, which can lead to trust in environmentally friendly brands. Schmuck & Vlek (2003), also point out that feelings of guilt not only encourage environmentally friendly behavior but also increase trust in organizations and products that are perceived as environmentally friendly. Thus, consistent with previous research, green trust is expected to mediate the relationship between environmental guilt and consumers' green purchase intention.

*Hypothesis 3b:* Green trust mediates the relationship between environmental guilt and green purchase intention.

The last hypotheses focus on the role that environmental responsibility plays in the relationship between psychological factors and green purchase intention. Findings of past studies have emphasized the importance of environmental responsibility as intermediary between consumers' increasing environmental consciousness and their eventual interest and attitude towards making green purchases (Al-Swidi & Saleh, 2021; Rahimah et al., 2018). Additionally, for the majority of consumers, a sense of responsibility is the main reason for purchasing sustainable products and services. A study conducted by Statista (2021) found that 65 % of respondents decide to buy sustainable products and services for this exact reason. The meta-analysis by Zhuang et al. (2021) found that environmental responsibility is one of the most important factors influencing green purchase intention. According to a meta-analysis by Bamberg & Möser (2007) people who take on a degree of environmental responsibility behave more environmentally responsibly than people who do not. Furthermore, ecological knowledge, purchasing intention, and actual purchase behavior were found to be positively and directly impacted by environmental concerns and responsibility.

The impact of consumers' environmental responsibility on green consumption was investigated in a study conducted by Yue et al. (2020). The empirical findings demonstrate

that assuming environmental responsibility can raise environmental concern, which in turn increases green consumption. The study also highlighted that awareness of environmental issues can positively influence consumer attitudes and behavior, which aligns with Ajzen's (1985) theory of planned behavior, which states that attitude is an important predictor of behavior. The study by Hansla et al. (2008) found that environmental responsibility and awareness positively influence green consumption behaviors. It demonstrated that individuals who feel responsible for environmental issues tend to show a stronger willingness to adopt sustainable consumption practices, for example the willingness to pay for green electricity.

This means that empathic traits can promote a greater sense of responsibility for the environment, which in turn can encourage environmentally friendly behaviors such as green shopping. In line with this, Hypothesis 4a proposes that:

*Hypothesis 4a:* Environmental Responsibility mediates the relationship between empathic traits and green purchase intention.

The VBN Theory assumes that individuals' environmental beliefs and perceptions influence their sense of responsibility for the consequences of their behavior (Stern et al., 1999). When individuals are aware of their responsibility, they are more likely to adopt environmentally friendly behavior. Van der Werff & Steg (2016) support the theory, stating that individuals who feel responsible for environmental damage tend to behave more sustainably. Moreover, a sense of guilt arises when people recognize their responsibility for actions or inactions that harm the environment (Mallett, 2012). This guilt can lead people to adopt environmentally friendly behaviors, such as buying eco-friendly products, to alleviate their discomfort and act in accordance with their moral beliefs. Thus, Hypothesis 4b suggests:

*Hypothesis 4b:* Environmental Responsibility mediates the relationship between environmental guilt and green purchase intention.

### **3.2 Methodology**

This section presents the methodology of this thesis' study. The sample, the operationalization of the variables, the material used, the statistical quality criteria, and the procedure of the study are explained in more detail.

### **3.2.1 Sample and Recruitment**

The current thesis employs a one-factor between-subjects and cross-sectional design, as all participants were measured at a single point in time (Cummings, 2017). A non-probability sampling method was used, as not every individual had the same chance of being included in the study. An online survey was chosen given its increasing interest and use in recent years due to its affordability (Wu & Thompson, 2020). The optimal sample size was calculated in advance using the “rule of thumb” proposed by Everitt (1975), with approximately 10 participants for each item. Given that 25 items were included in this study, the ideal sample size was calculated to be 250 participants. In total, 365 people participated, with 273 completing the survey, thereby surpassing the optimal sample size.

Of the 365 people, 3 were excluded because of their age (under 18 years old). People under 18 are generally excluded from purchasing decision studies as they usually do not yet have a fixed income. The majority of sustainability and general purchasing decision studies only involve people over the age of 18 (Statista, 2017). Based on the exclusion criterion of whether the participants go grocery shopping themselves, 25 people were excluded who did not do so and were therefore not suitable for the study. The recruitment was mainly carried out using social networks such as Instagram and WhatsApp as well as career portals like LinkedIn. Recruitment was also carried out among friends and acquaintances.

### **3.2.2 Operationalization**

The study was conducted using a quantitative online questionnaire in order to reach as many participants as possible. Studies have shown a positive influence of online survey methods on the response rate (Jakob et al., 2009). These also make it possible to combine visual elements and interactivity and can be carried out quickly, simultaneously and independently of time. Moreover, online surveys are more sustainable than pen-and-paper surveys.

The two independent variables in the model are empathy and environmental guilt. The dependent factor is represented by the green purchasing intention. Furthermore, green trust and environmental responsibility serve as mediators. Selected scales were used to make the mediators and independent factors quantifiable because they are latent variables (Latcheva & Davidov, 2014). All scales used were rated on a bipolar five-point Likert scale going from “1=strongly disagree” to “5=strongly agree”. The literature suggests that 5 points is a good balance between having enough differentiation points without having too many

possible answers (Chomeya, 2010). All constructs were measured using items based on existing and verified scales of previous research, as described below.

As previously stated, empathy can be defined as a personality feature, i.e. an individual's predisposition to feel empathic, or as an emotion, referring to a momentary state ("trait" vs. "state" empathy; Albiero et al., 2009). This study focuses solely on the former concept by assessing participants' general empathy ability, respectively empathic traits. Participants' empathy was measured using an adapted version of the well-known scale from the Interpersonal Reactivity Index (IRI; Davis, 1980). The scale has a strong validity portfolio and is one of the most commonly used measures of empathy (Davis & Oathout, 1987). The 28-item scale includes four 7-item subscales: the Fantasy Scale, Perspective-Taking Scale, Empathic Concern Scale, and Personal Distress Scale (Davis, 1980). As this study explicitly relates to trait empathy, the other scales were disregarded since they are inadequate for the research aims in this circumstance. Empathic concern reflects people's feelings of compassion and worry for others. The empathic part of the scale was adopted and consists of seven items, one of which is "When I see someone being treated unfairly, I sometimes feel pity for them.". The Cronbach's alpha of this scale is  $\alpha=.71$  (Davis & Oathout, 1987), which indicates a high internal consistency (Yi, 1990).

The feeling of environmental guilt was recorded using a construct by Antonetti & Maklan (2014), consisting of three items. One item states "I will feel sad if I behave in an environmental unfriendly way."

The mediator green trust was determined using the scale established by Chen (2010). The variable was assessed on five items like "You feel that this product's environmental claims are generally trustworthy."

The mediator environmental responsibility was measured using an adapted scale from Stern et al. (2010). The survey instrument consists of six items, containing three different types of questions, e.g. questions on the level of agreement, the level of interest or frequency. Here, reference was made to the questions on the degree of agreement. These consist of a three-item scale, one of which is "My actions impact the health of the environment."

To determine the intention to make environmentally friendly purchases, a question was used in which the participants had to choose between two products and the subsequent choice of the sustainable option served as an indicator.

The entire questionnaire can be found in Appendix 1.

### **3.2.3 Stimuli**

The selection of ecological behaviors to be studied is crucial, as some environmentally friendly actions may be motivated by reasons unrelated to environmental concerns. Purchasing organic food or non-toxic detergents can be for health reasons, and the driving force behind saving energy can also be the desire to save money (Elgaaied, 2012). To minimize the influence of such factors, this study focused on products that differ only in their packaging. A predetermined set of eight hygiene products, each with a sustainable alternative, was selected as stimuli for the study. Since the purchasing intention in this context does not offer any immediate personal benefit, it is more likely driven by environmental concerns.

Care was taken to ensure that the two product alternatives were as similar as possible to avoid potential confounding factors such as different brands and preferences. Consequently, the product alternatives were consistently chosen from the same brand, albeit with different levels of sustainability. Packaging was chosen as the sustainability factor in this study, i.e. the products differed almost exclusively in terms of their packaging material. In addition to the product images, two further pieces of information were provided about the product: the quantity and the price, which were checked in stores in advance to ensure they were realistic.

### **3.2.4 Statistic Quality Criteria**

The most important quality criteria are discussed below. These include objectivity, reliability, and validity (Schmidt-Atzert & Amelang, 2012).

Objectivity in this research was ensured through the use of a standardized questionnaire, providing consistency across respondents. However, external influences could not be controlled due to the online format. The evaluation was conducted using the SPSS statistics program to maintain objectivity.

Reliability reflects the accuracy with which a questionnaire measures a characteristic (Schmidt-Atzert & Amelang, 2012). The Cronbach's alpha, which measures the reliability of the scales was calculated for green trust, environmental guilt and environmental responsibility scales. All exceed the minimum reliability limit of  $\alpha \geq .7$  and thus exhibit internal consistency, which ultimately speaks in favor of high reliability (Tavakol & Dennick, 2011). The exact values are shown in Table 1.in chapter 4.2.

Validity refers to the accuracy of measurements and whether they correspond to the characteristics intended to be tested (Schmidt-Atzert & Amelang, 2012). It is divided into

internal and external validity. Internal validity assesses whether the experiment accurately captures the intended characteristics, which is achieved through randomization of the sample and controlling for confounding variables. Exclusion factors, such as age, were defined to reduce the effect caused by sample composition on the results. A wide range of demographic characteristics were recruited into the study to ensure that it was as representative as possible (Brosius & Koschel, 2005). Confounding variables induced by the environment during the study can only be controlled to a limited extent using an online questionnaire. Variables such as survey location and time are beyond control. The fact that participants can complete the questionnaire at any time and from any location increases the chance of external effects. Nonetheless, standardized instructions and the absence of an experimenter enabled survey standardization. All participants received consistent instructions, reducing the risks associated with instruction and experimenter presence. Knowledge of research objectives may introduce a confounding variable. When participants are aware of the survey's objective, they may pay more attention to the topic, thereby influencing the results toward better effective knowledge (Brosius & Koschel, 2001). To prevent this, participants learned about the study's goal only after completing the survey. As a result, contestants were uninformed of the study's focus throughout their participation. External validity, on the other hand, examines the extent to which the study's findings can be generalized to real-life situations. According to Hussy et al. (2013), external validity is comprised of three subcategories: population validity, situation validity, and variable validity. Population validity is ensured in this study due to a large sample size ( $n=273$ ). However, situation validity is limited as the experiment's artificial nature restricts its applicability to different contexts. Variable validity assumes the transferability of results when operationalizations of independent and dependent variables yield consistent outcomes. This is likely fulfilled given the use of validated questionnaires.

Overall, the present experiment meets the three primary quality criteria.

### **3.2.5 Procedure**

The study was conducted from 17.01.2024 to 28.02.2024. Participants completed the survey online and took an average of 7:22 minutes to complete the questionnaire. At the start, participants had to agree to the processing of their anonymized data. The first question asked for the participants' age, and those who did not meet the criteria outlined in Chapter 3.2.1. were excluded from the study. The remaining sample first completed the items relating to their empathy using the adapted version of the IRI scale. They were then asked whether

they regularly do their own grocery shopping; those who answered “no” to this question were automatically redirected to the end of the survey. After a brief instruction, participants were presented with two selected products and asked to choose which product they would be more likely to purchase. It was explicitly stated that the choice was between the two options, even if they would not typically buy such products. The survey continued with items assessing environmental guilt and environmental responsibility, as described earlier in the methodology.

Finally, general personal questions were asked, including the employment status and education level. Appendix 1 contains the complete questionnaire, whereby the data protection declaration, greeting, and ending are not included.

## 4. Results

This chapter provides the results of the current thesis. First, the descriptive statistics and the correlations of all variables are presented. In the next section, the research hypotheses are tested using inferential statistics and calculated using SPSS.

### 4.1 Data Preparation

After completion of the survey, the data was exported from Qualtrics to SPSS and cleansed according to Chapter 3.2.1. The scales of the independent variables as well as the mediators were grouped into constructs. The dependent variable was recoded, and a sum variable was created. Here, "0" stood for the non-sustainable product option and "1" for the sustainable product option. In addition, the following age groups were formed: young adults (18-25 years; n=145), adults (26-44 years; n=78), middle-aged adults (45-59; n=35) and old adults (60+ years; n=15) (Peng et al., 2020).

### 4.2 Descriptive Statistics

A total of 171 women (62,5%) and 98 men (36%) were surveyed, with 4 people (1,5%) preferring not to state their gender. The average age was 31 years, with the youngest participant being 19 years old and the oldest 83 years old. However, the majority of participants were 24 years old, as the median age was 24. The young average age of the sample can be explained by the online recruitment, which was largely carried out via social media and through friends and family.

A large proportion of the sample was employed (37%), or a student (31%). The occupation of 23,5% was "working student" and the rest of the participants were unemployed (3%), retired (2,2%) or stated "other" (3,3%). Almost half of the participants had a Bachelor's degree as the highest education form (46,5%) and around 32% had a Master's degree. Others had a high school degree (12,5%) and 4,5% a doctorate. The remaining 4,5% either stated "other" or had less than a high school diploma.

First, the mean value of all variables was calculated. On a scale of 1 to 5, participants showed high empathic characteristics ( $M=3.8$ ) as well as rather high environmental guilt ( $M=3.46$ ). Green trust was rated neutrally with a mean value of  $M=3.0$ . On the other hand, participants showed a high level of environmental responsibility with a mean value of  $M=3.97$ . Furthermore, as already mentioned, all scales exceeded the minimum reliability limit of  $\alpha \geq .7$  and thus exhibit internal consistency. The results are shown in Table 1.

**Table 1.** *Descriptive Statistics and Reliabilities*

<b>Variable</b>	<i>M</i>	<i>SD</i>	<i>Cronbach's α</i>
Empathy	3.80	.63	.71
Environmental Guilt	3.46	.87	.87
Green Trust	3.03	.69	.82
Environmental Responsibility	3.97	.68	.76

*Note.* 1=strongly disagree – 5=strongly agree; N= 273.

There was a total of 7 product pairings, each of which contained one sustainable and one non-sustainable option. The mean value of green purchase intention  $M=3.8$  ( $SD=1.48$ ) shows that participants opted for the sustainable product option for slightly more than half of the products. The mean values of green purchase intention for each individual product are shown in Table 2.

**Table 2.** *Green Purchase Intention of Individual Products*

<b>Products</b>	<i>M</i>	<i>SD</i>
Razor	0.67	.47
Washing Powder	0.48	.50
Deodorant	0.63	.48
Kitchen Roll	0.78	.41
Soap	0.23	.42
Washing Caps	0.74	.44
Toothbrush	0.34	.47

*Note.* 0 = Non-Sustainable Option; 1= Sustainable Option; N= 273.

### **4.3 Correlations**

This chapter deals with correlation as a statistical measure to describe the strength and direction of the relationship between the variables. Correlations make it possible to identify initial indications of potential relationships in a data set that may be relevant for further analyses (Curran-Everett, 2010). In the context of this thesis, the calculation of correlations serves to examine the relationship between the independent variables, the dependent variable as well as the mediators in order to create the basis for the subsequent analyses.

Empathy was found to correlate significantly with Green Trust ( $r=0.142$ ) and Environmental Responsibility ( $r=0.372$ ), suggesting that more empathetic individuals have greater trust in environmentally friendly products and feel more responsible for their actions. Additionally, Empathy was also significantly correlated with Green Purchase Intention ( $r=0.162$ ), reinforcing the idea that empathy can positively influence the intention to make environmentally sustainable purchases. These correlations indicate that the first hypothesis could be confirmed.

Similarly, Environmental Guilt had a strong positive correlation with Environmental Responsibility ( $r=0.528$ ), confirming that guilt may be a key factor driving people to behave more responsibly and make more sustainable purchasing decisions. Guilt also correlated positively with Green Purchase Intention ( $r=0.216$ ), supporting the hypothesis that environmental guilt plays a central role in sustainable behavior.

The correlations between Empathy and Green Trust ( $r=0.142$ ) and between Environmental Guilt and Environmental Responsibility ( $r=0.528$ ) suggest that both mediators, Green Trust and Environmental Responsibility, potentially play an important role in mediating the influence of Empathy and Guilt on sustainable purchasing decisions. The following mediation analyses will make it possible to examine whether the effects of empathy and guilt on purchasing decisions are partially or fully mediated by these mediators. The correlations between the independent variables and the mediators did not show extremely high values (all below 0.80), which indicates that there is no significant multicollinearity and that the regression and mediation analyses can be carried out reliably.

However, the correlation between Green Purchase Intention and Green Trust was weak and not statistically significant ( $r=0.017$ ), suggesting that green trust may not have as strong of an influence on purchase intention in this context. In contrast, Green Purchase Intention and Environmental Responsibility were significantly correlated ( $r=0.231$ ), indicating that feeling responsible for the environment strongly influences individuals' intent to make green purchases.

The correlations thus not only provide valuable initial indications of existing relationships but also create the basis for the subsequent regression and mediation models. The complete results of the correlations are shown in Table 3.

**Table 3.** *Correlations of All Variables*

<b>Variable</b>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>
1. Empathy		.436**	.142*	.372**	.162**
2. Environmental Guilt	.436**		.260**	.528**	.216**
3. Green Trust	.142*	.260**		.250**	.017
4. Environmental Responsibility	.372**	.528**	.250**		.231**
5. Green Purchase Intention	.162**	.216**	.017	.231**	

*Note.* N= 273.

\*  $p < 0.05$

\*\*  $p < 0.01$

#### **4.4 Hypotheses Testing**

The first two hypotheses were evaluated using a simple linear regression. The prerequisites for this analysis first had to be checked. There are six conditions for a regression (Freund et al., 2006). First, the dependent and independent variables should be linearly related. A visual examination of the scatter diagram of the variables was used for this evaluation. To ensure the validity of the analysis, observations should also be independent of one another. Furthermore, homoscedasticity is required. The normality of the residuals, or the approximate normal distribution of the differences between the observed and anticipated values, is another crucial factor. A normal distribution should be present, but this can be assumed for a large sample ( $n \geq 30$ ) according to the central limit theorem (Scharnbacher & Holland, 2013). In addition, minimal or nonexistent multicollinearity among the independent variables is necessary to prevent inaccurate estimations of regression coefficients. These requirements were checked and are met by the data set.

*Hypothesis 1:* Empathic traits positively influence green purchase intention.

The first hypothesis analyses whether empathic traits positively influence green purchase intention. As mentioned above, a simple linear regression was performed. The results showed a significant positive correlation between empathic traits and green purchase intention ( $\beta = 0.38$ ,  $p < 0.007$ ; see Table 4.). This means that an increase in empathy of one unit is associated with an average increase in green purchase intention of 0.38 units. The R-squared of the regression was 0.026, meaning that 2,6% of the variation in green purchase intention can be explained by empathy. This indicates that empathic traits have a significant but minor influence on consumers' green purchase intention. Other factors could also play a

role that were not considered in this analysis. The F-statistic of the model was  $F=7.27$ , indicating that the model has a significant overall influence on the dependent variable. Hypothesis 1 was accepted. Empathic traits do have a positive influence on green purchase intention.

**Table 4.** *Regression Analysis of Empathy and Green Purchase Intention*

	<i>B</i>	<i>SE</i>	<i>t</i>	$\beta$	<i>p</i>
Constant	2.446	.540	4.528		<.001
Green Purchase Intention	.378	.140	2.696	.162	.007

*Note:*  $N=273$ .  $R^2 = .026$  (*Adjusted R*<sup>2</sup> = .023).

*Hypothesis 2:* Environmental guilt positively influences green purchase intention.

The second hypothesis examines whether the intention to make green purchases is positively influenced by environmental guilt. A further simple linear regression analysis was carried out. The findings showed a significant positive effect ( $\beta = 0.37$ ,  $p < 0.001$ ) between green buying intention and environmental guilt (see Table 5.), indicating that a one-unit increase in guilt corresponds to an average 0.37-unit rise in the intention to make green purchases. Environmental guilt can account for 4,7% of the variation in the intention to make green purchases, according to the regression's R-squared of 0.047. The model's F-statistic was  $F=13.24$ , suggesting that the model has a significant impact on the dependent variable overall. The second hypothesis was supported. Environmental guilt has a positive influence on green purchase intention.

**Table 5.** *Regression Analysis of Environmental Guilt and Green Purchase Intention*

	<i>B</i>	<i>SE</i>	<i>t</i>	$\beta$	<i>p</i>
Constant	2.604	.362	7.186		<.001
Green Purchase Intention	.370	.102	3.639	.216	<.001

*Note:*  $N=273$ .  $R^2 = .047$  (*Adjusted R*<sup>2</sup> = .043).

In order to test whether the relationship between the psychological factors, empathy and environmental guilt, and green purchase intention is mediated by green trust, a mediation analysis was carried out. This was calculated in SPSS with the PROCESS macro. According

to Hayes (2018), a linear model is assumed here, which presupposes the normal distribution, homoscedasticity, and independence of the residuals. The relationship of all variables involved in the mediation analysis was approximately linear, as assessed by visual inspection of the scatterplots after LOESS smoothing. At the same time, however, according to Hayes (2018) the assumptions should not be considered too closely. All four mediation analyses used model 4 with 5000 iterations bootstrapping and the heteroscedasticity-consistent inference HC3 (Davidson-MacKinnon). The tests were performed with a significance level of 5%.

*Hypothesis 3a:* Green trust mediates the relationship between empathic traits and green purchase intention.

To analyze Hypothesis 3a the total effect of the independent variable on the dependent variable was observed first. This showed a significant value of  $p < .013$  ( $b = 0.38$ ). The regression coefficients of the indirect paths were then calculated. Following the inclusion of green trust in the model, the mediator was significantly predicted by empathic traits ( $b = 0.15$ ,  $p < .049$ ), while green purchase intention ( $b = -0.14$ ,  $p > .091$ ) was not significantly predicted by the mediator. Hypothesis 3a was not supported. Green trust does not mediate the relationship between empathic traits and consumers' green purchase intention.

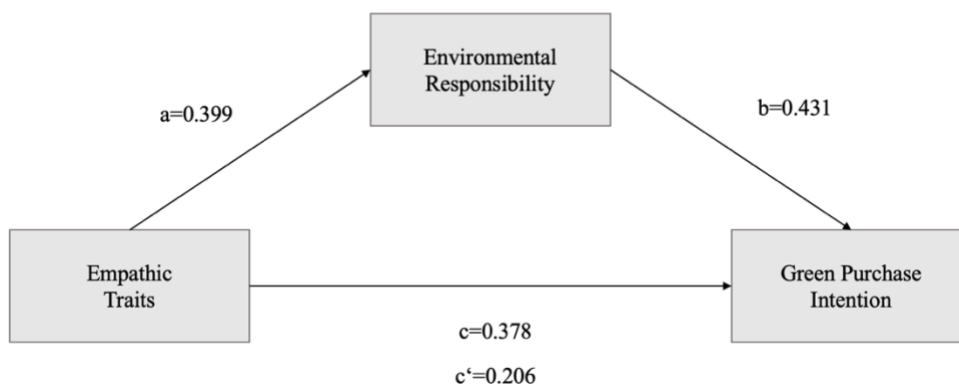
*Hypothesis 3b:* Green trust mediates the relationship between environmental guilt and green purchase intention.

For the purpose of finding out whether green trust mediates the relationship between environmental guilt and green purchase intention, another mediation analysis was conducted. The same procedure was carried out as for Hypothesis 3a. The total effect of the environmental guilt on green purchase intention was measured. It showed a significant value of  $p < .001$  ( $b = 0.37$ ). Following this, the regression coefficients were computed. After the mediator was included in the model, environmental guilt significantly predicted the mediator ( $b = 0.21$ ,  $p < .000$ ), which in turn did not significantly predict the green purchase intention ( $b = -0.19$ ,  $p > .48$ ). Hypothesis 3b was not supported. Green trust does not mediate the relationship between environmental guilt and consumers' green purchase intention.

The second mediator included in the model was environmental responsibility. Two mediator analysis were also carried out here to analyze Hypotheses 4a and 4b.

*Hypothesis 4a:* Environmental responsibility mediates the relationship between empathic traits and green purchase intention.

The three key variables of this mediation analysis were: Empathy as the independent variable, Environmental Responsibility as the mediator variable, and Green Purchase Intention as the dependent variable. The total, direct and indirect paths were calculated (see Figure 2).



**Figure 2.** Mediation Model: Empathy, Environmental Responsibility, Green Purchase Intention.

The analysis first calculated the total effect of the independent variable on the dependent variable. It showed a significant value of  $p < .01$  ( $b = 0.38$ ). The regression coefficients of the indirect paths were then assessed ( $a$ ,  $b$ ). After the environmental responsibility was included in the model, empathic traits significantly predicted the mediator ( $b = 0.4$ ,  $p < .000$ ), which in turn significantly predicted the green purchase intention ( $b = 0.43$ ,  $p < .000$ ). The non-significance of the direct effect ( $c'$ ) ( $b = 0.21$ ,  $p = .21$ ) showed that the relationship between empathic traits and green purchase intention was fully mediated by environmental responsibility ( $ab = 0.172$ ). The exact numbers are shown in Table 6. Accordingly, Hypothesis 4a was accepted. Environmental responsibility mediates the relationship between empathic traits and consumers' green purchase intention.

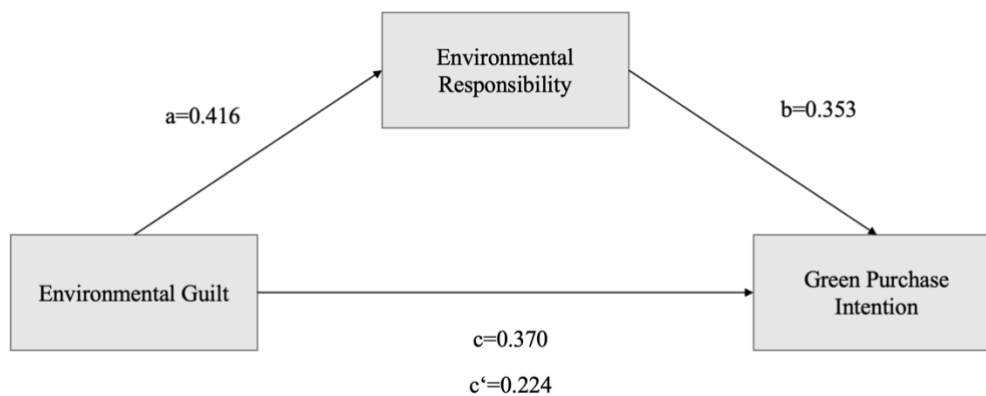
**Table 6.** Mediation Analysis of Environmental Responsibility on the Relationship Between Empathy and Green Purchase Intention

Effect	Path	$\beta$	SE	95% CI		t	p
				Lower	Upper		
Total	Empathy → GPI	.378	.151	.08	.676	2.5	.013
Indirect	Empathy → ER → GPI	.172	.066	.047	.307	-	-
Direct	Empathy → GPI	.206	.166	-.12	.532	1.24	.215

Note: N=273. Bootstrap sample size = 5000. GPI = green purchase intention; ER = environmental responsibility; CI = confidence interval (95%).

*Hypothesis 4b:* Environmental responsibility mediates the relationship between environmental guilt and green purchase intention.

In order to analyze the last hypothesis that examines the mediation of environmental responsibility on the relationship between environmental guilt and green purchase intention, another mediation analysis was conducted. The three primary variables of this mediation analysis were: Environmental Guilt as the independent variable, Environmental Responsibility as the mediator variable, and Green Purchase Intention as the dependent variable. The total, direct and indirect paths were calculated (see Figure 3).



**Figure 3.** Environmental Guilt, Green Purchase Intention, Environmental Responsibility Mediation Model.

The total effect of environmental guilt on green purchase intention showed a significant value of  $p < .001$  ( $b = 0.37$ ). Next, the indirect paths' regression coefficients were evaluated (a, b). Upon integrating environmental responsibility into the model, the mediator

was strongly predicted by environmental guilt ( $b=0.42$ ,  $p<.000$ ). The mediator, in turn, significantly predicted the intention to make green purchases ( $b=0.35$ ,  $p<.041$ ). The relationship between environmental guilt and green purchasing intention is fully mediated by environmental responsibility, as evidenced by the non-significance of the direct effect (c') ( $b=0.22$ ,  $p=.07$ ) ( $ab=0.146$ ). The exact results are presented in Table 7. As a result, Hypothesis 4b was approved. Environmental responsibility mediates the relationship between environmental guilt and consumers' green purchase intention.

**Table 7.** Mediation Analysis of Environmental Responsibility on the Relationship Between Environmental Guilt and Green Purchase Intention

Effect	Path	$\beta$	SE	95% CI		t	p
				Lower	Upper		
Total	EG → GPI	.37	.108	.157	.583	3.42	.000
Indirect	EG → ER → GPI	.146	.071	.008	.289	-	-
Direct	EG → GPI	.224	.126	-.024	.471	1.78	.076

Note:  $N=273$ . Bootstrap sample size = 5000. EG = environmental guilt; GPI = green purchase intention; ER = environmental responsibility; CI = confidence interval (95%).

### Demographics Comparison

To compare the differences in gender, age, education, and occupation across the variables, several one-way ANOVA's were conducted. A one-way ANOVA requires several conditions to be met: the measurements must be independent; the dependent variable must be at least interval-scaled, while the independent variable must be nominally scaled and independent; the dependent variable must be (approximately) normally distributed for each group; and there should be no outliers, with approximately equal variances across groups (homoscedasticity) (Field, 2024). Homogeneity of variances was confirmed using Levene's Test which showed that equal variances could be assumed. Additionally, the normal distribution can be assumed for large samples ( $n \geq 30$ ) according to the central limit theorem (Scharnbacher & Holland, 2013). The remaining assumptions of the ANOVA were also checked and met.

The results showed that green purchase intention did not differ significantly across genders ( $p=.46$ ), education ( $p=.18$ ), or occupation ( $p=.42$ ). However, the one-way ANOVA for age groups revealed significant differences in green purchase intention ( $F(3, 269)=5.81$ ,

$p < .001$ ). A clear trend emerged, showing that green purchase intention generally increased with age (see Table 8). However, the adult age group deviated from this trend, displaying lower green purchase intention compared to other age categories. A Tukey post-hoc analysis further identified significant differences between specific age groups. A substantial difference ( $p < .001$ ) was observed between young adults and older adults (-1.49, 95%-CI [-2.5, -0.47]), as well as between adults and older adults ( $p < .001$ , -1.59, 95%-CI [-2.64, -0.53]). However, it is important to note that the groups were not equal in terms of their sample size, which may influence the interpretation of the results. In particular, the older adult group had a comparatively smaller sample size ( $n=15$ ) compared to the other age groups. Therefore, caution is required when making direct comparisons between age groups, as the statistical power for the older adult group may be lower and the results may be less robust.

**Table 8.** *Green Purchase Intention Age Comparison*

Age Group	<i>n</i>	<i>M</i>	<i>SD</i>
Young Adults	145	3.78	1.36
Adults	78	3.68	1.62
Middle-Aged Adults	35	4.17	1.42
Old Adults	15	5.23	1.39

*Note.* 7 products; N= 273.

## **5. Discussion**

In this chapter, the presented results are interpreted and examined relation to the theoretical background discussed earlier. Subsequently, the limitations are outlined, and based on these, potential directions for future studies are identified.

### **5.1 Interpretation of Results**

The primary aim of this thesis' study is to extend the current literature on the influence of psychological factors, particularly empathy and environmental guilt, on green purchasing intentions. Additionally, the study analyzes the influence of green trust and environmental responsibility on these relationships.

Numerous research studies have concluded that sustainable consumption decisions are heavily influenced by consumers' emotions, among other things (Joshi & Rahman, 2015). The acceptance of the first two hypotheses in this study supports this assumption. Hypothesis 1 shows that empathic traits positively influence green purchase intentions. Individuals displaying higher levels of empathy were significantly more likely to choose the green product option. This finding is consistent with the study by Moore & Yang (2020), which also confirmed that empathy influences other environmental behavioral intentions. Empathic traits help to establish a personal connection to environmental issues, which leads to more sustainable actions. Moreover, Brown et al. (2019) argue that a lack of empathy towards the environment and other individuals can hinder efforts to protect the environment and promote sustainability. This perspective aligns well with the results of the current thesis, as it suggests that individuals who possess higher levels of empathy are more likely to engage in pro-environmental behaviors, such as having higher green purchasing intentions. The role of empathy in pro-environmental consumer behavior highlights that it can serve as a target for interventions to promote this sustainable behavior. Hypothesis 1 thus provides further support for the importance of empathy as a driving force behind environmental-friendly behavior and highlights the need for further research and interventions to promote empathic traits with regard to environmental conservation.

Hypothesis 2 indicates that environmental guilt positively influences green purchase intention. Participants with a higher sense of environmental guilt were more likely to choose the green product option. This finding aligns with previous research by Liang et al. (2019), which demonstrated a direct link between the specific moral emotion of guilt and pro-environmental behavior, particularly in contexts like pollution avoidance. Furthermore, Mallett (2012) proposed that environmental guilt could predict pro-environmental

behavioral intentions beyond individual differences in pro-environmental beliefs and baseline guilt levels. The results of Hypothesis 2 support this by demonstrating that environmental guilt is an active emotional response that can directly increase the likelihood of engaging in sustainable behaviors. The results of this hypothesis are consistent with previous studies by Parkinson & Illingworth (2009) and Lindsey (2005), which suggest that guilt has a significant social component that motivates altruistic behavior to alleviate the feeling of guilt. The acceptance of Hypothesis 2 indicates that this aspect of guilt may indeed translate into increased pro-environmental purchasing behavior, as consumers may use such purchases as a way to mitigate their environmental guilt. Overall, the results emphasize the importance of guilt as a strong motivator. Feelings of environmental guilt can drive behavioral change towards more sustainable practices by making the moral and environmental impact of one's actions a personal concern.

Hypotheses 3a and 3b reveal that green trust does not mediate both the relationship between empathic traits and green purchase intention, nor between environmental guilt and green purchase intention. Despite the expectation that green trust would positively influence green purchase intentions, this relationship did not reach statistical significance in both models. The hypotheses contradict previous research that identified green trust as a key mediator in the relationships between consumption values (Amin & Tarun, 2020), product knowledge (Wang et al., 2019), and green perceived risk (Chen & Chang, 2012). However, the results of Hypothesis 3a indicate a positive and statistically significant relationship between empathic traits and green trust. This suggests that individuals who exhibit higher levels of empathy are more likely to trust green products. The results align with psychological theories suggesting that empathy fosters social trust and cooperation, which can extend to trust in the environmental qualities of products (Rifkin, 2009). Similarly, Hypothesis 3b showed a positive relationship between environmental guilt and green trust, indicating that a higher sense of environmental guilt leads to increased trust in green products. This finding supports the idea that feelings of guilt regarding environmental issues can enhance trust in green products or brands, potentially because guilt motivates individuals to align their actions with their moral standards by trusting and thus favoring environmentally friendly options (Mallett, 2012). However, the non-significance of both mediator analysis could indicate potential issues in operationalizing or measuring green trust in relation to actual purchasing behavior. One possible explanation is the relatively weak or indirect influence of empathic traits and feelings of environmental guilt on green trust compared to other variables such as consumer values and product knowledge (Chen, 2010).

The study reveals that, while research has shown that green trust is an important factor in influencing green purchasing behavior (Joshi & Rahman, 2015), its role as a mediator is not generally applicable to all possible antecedents such as empathic traits or environmental guilt. The relationships between these variables might involve more complex interactions or require the presence of other moderating factors that were not considered in this study. In summary, these results suggest that while empathic attributes and environmental guilt are successful in building trust in green products, this trust does not necessarily translate into actual green purchasing behavior in the context of this study.

Hypotheses 4a and 4b reveal that environmental responsibility mediates both the relationship between empathic traits and green purchase intention, as well as the relationship between environmental guilt and green purchase intention. Empathic traits, which involve the ability to understand and share the feelings of another, significantly influence environmental responsibility. This suggests that individuals with higher empathy are more likely to feel a sense of duty towards the environment, which in turn prompts them to make greener purchasing decisions. This finding is consistent with previous research, such as that by van der Werff & Steg (2015), which links pro-social behavior to a sense of personal responsibility.

Similarly, environmental guilt leads to a higher level of environmental responsibility, demonstrating that sentiments of guilt about environmental degradation motivate people to take on additional responsibility. This increased accountability has a favorable effect on green purchasing intentions. Mallett (2012) also supports this, arguing that guilt over environmental damage motivates people to act more responsibly. The results are consistent with findings of the studies presented in the Hypotheses Development chapter. Zhuang et al. (2021) and Al-Swidi & Saleh (2021) emphasize the central role of environmental responsibility in promoting green consumption. People who are aware of their environmental impact are more likely to engage in behaviors that mitigate this impact, such as buying environmentally friendly products. Furthermore, the VBN Theory presented by Stern et al. (1999) provides a theoretical foundation that supports these findings. It states that recognizing environmental consequences and believing in one's ability to reduce negative impacts leads to a sense of responsibility for the environment. This framework helps to explain why both empathic traits and environmental guilt, which affect environmental beliefs and perceived efficacy (Schwartz, 1977), can enhance a sense of responsibility and, subsequently, pro-environmental purchasing intention. The significant mediating role of environmental responsibility in translating empathic traits and environmental guilt to green

purchase intentions suggests that fostering a sense of responsibility may be key to promoting sustainable consumer behavior. The implications of this are discussed in the next two chapters.

## **5.2 Theoretical Implications**

The findings of this thesis contribute significantly to the understanding of psychological factors influencing green purchase intention, with implications for both theory and practice.

Firstly, this thesis builds on the TPB by including emotional and cognitive psychological variables such as empathy and environmental guilt into the model. The TPB has focused on attitude, subjective norms, and perceived behavioral control as important factors influencing behavior (Ajzen, 1985). However, the results of the first two hypotheses, suggest that emotional factors may play a comparable role in promoting environmentally friendly behavior. The significant influence of empathy and guilt on the intention to buy environmentally friendly products supports the assumption that sustainable consumption is not only determined by rational decisions, but also by emotional reactions to environmental concerns.

The results of the third hypotheses challenge the effectiveness of green trust as a mediating factor between psychological variables and green purchase intention. Contrary to previous literature, which assumes that trust in green products is a crucial determinant of sustainable consumer behavior (Chen & Chang, 2012; Chen 2013), the results indicate that green trust does not significantly mediate the relationships between empathy, guilt, and purchase intention. This unexpected finding suggests a need for a reevaluation of the role of trust in green purchase behavior. It implies that while trust remains important, psychological factors such as emotional engagement (e.g. empathy and guilt) may have a more direct influence on purchase decisions, independent of green trust in the product or brand.

Furthermore, the findings are consistent with the VBN Theory and the NAM, which imply that individuals' values, beliefs, and personal norms play an essential role in motivating pro-environmental actions (Oreg & Katz-Gerro, 2006; Steg & de Groot, 2010). The mediating effect of environmental responsibility emphasizes the importance of personal norms in encouraging customers to act sustainably. The VBN theory argues that personal values, particularly altruistic and biospheric values, influence beliefs about the environment, which in turn activate personal norms and motivate behavior (Oreg & Katz-Gerro, 2006). The fourth hypotheses reveal that those who feel a high sense of environmental

responsibility are more likely to transform empathy and environmental guilt into actual green purchasing decisions.

Finally, this study demonstrates the complexity of sustainable consumer behavior. By examining various psychological factors, this master's thesis provides a deeper understanding of how these interact to influence green purchasing intentions. The role of guilt in promoting sustainable consumption also supports the growing body of research showing the importance of moral and ethical factors in consumer behavior (Liang et al., 2019). It offers new opportunities to explore how different emotions motivate people to make environmentally conscious decisions.

### **5.3 Practical Implications**

The findings offer valuable insights for marketers, policy makers, and sustainability advocates on how to effectively engage and motivate consumers to make environmentally friendly choices. Understanding the role of empathy and environmental guilt in promoting sustainable consumption can help develop more effective marketing and communication strategies that appeal to consumers' emotions and moral values (Berenguer, 2007; Moore & Yang, 2020; Mallett, 2012).

First, companies can utilize empathetic marketing by developing campaigns that evoke a sense of connection between consumers and the environment (Jing et. al, 2022). Campaigns that emphasize the personal and collective impact of sustainable choices. This may be achieved, for example, by demonstrating the direct benefits of environmentally friendly products for future generations or ecological systems, thus provoking emotional responses that encourage environmentally friendly behavior. For example, images and storytelling that highlight the suffering of nature due to unsustainable behavior could elicit empathetic feelings and increase the likelihood of green purchases (Berenguer, 2007).

Secondly, environmental guilt can be used strategically, but with caution. Advertisers should try to find a balance between raising awareness of environmental damage and offering practical solutions that alleviate consumers' feelings of guilt (Antonetti & Maklan, 2014; Mallett, 2012). By offering opportunities to take action, such as buying environmentally friendly products, consumers can be made to feel that their choices can make a significant difference. This approach can prevent consumers from being overwhelmed by guilt and instead motivate them to engage in positive, reparative behaviors.

The results of this thesis also emphasize the need for companies to strengthen consumers' environmental responsibility. This could be achieved by highlighting the role of

the individual in preserving the environment, as emphasized in the NAM by Schwartz (1977) and the VBN Theory by Stern et al. (1999). Marketing messages that show the consumer as an active participant in environmental solutions, rather than just a passive buyer, can reinforce a sense of responsibility for the environment. A transparent presentation of sustainability claims could strengthen the link between consumers' actions and positive environmental effects. (M.-F. Chen, 2016)

Furthermore, the results challenge the previous assumption that green trust has a significant influence on green purchasing decisions (Y. Chen & Chang, 2012). While trust is still important, other psychological factors such as empathy and environmental guilt appear to play a more direct role in influencing sustainable choices. This suggests that brands should not only focus on building trust in their environmental claims, but also engage with consumers on an emotional level.

Finally, policy makers can utilize these findings by developing educational and awareness campaigns that promote empathy for the environment and emphasize the personal responsibility of individuals in fighting climate change. Education programs that encourage consumers to empathize with nature or other people affected by climate issues can help change consumer behavior towards sustainability in the long term (Berenguer, 2007). Furthermore, guilt can be included ethically into public campaigns to increase awareness of the consequences of unsustainable behavior while offering solutions.

In summary, these practical implications suggest that emotional factors such as empathy and guilt should play a central role in both marketing strategies and policy initiatives to promote sustainable consumption. By utilizing consumers' emotional connection to the environment and fostering their sense of responsibility, companies and policy makers can encourage long-term pro-environmental purchasing behavior.

#### **5.4 Limitations and Future Research**

In the following, the present study will be critically reflected upon. At the same time, recommendations for further research approaches will be made.

A first limitation identified is the uneven composition of the sample. The sample consisted of 62,5% women and 36% men, with approximately 54,5% being students, and a median age of 24. This demographic distribution does not reflect the general population, which raises the question of whether the results of a more representative sample would be different. As the focus of this study was not on these characteristics, it is questionable whether the results of a study with a representative sample would differ from the results of this study.

Future research should explore whether the result can be obtained with a sample that represents the population more accurately.

Another limitation is the sector-specific focus, which primarily explores the green purchase intention within the hygiene sector. The findings and conclusions of this study may not be transferable to other product categories or services. The hygiene sector has unique characteristics, such as concerns around safety, cleanliness, and personal health, which may not be as relevant in other sectors like fashion or electronics. Future studies could therefore transfer the researched effect to other sectors to verify if similar results are observed across different product categories.

A further significant limitation concerns the measurement instrument of green trust used in this study, which has already been described in the Interpretation of Results chapter. The green trust scale developed by Chen (2010) was originally designed to evaluate trust in relation to a single product. However, in this study, the scale was adapted for broader applicability to include multiple products. Due to time constraints, the scale, consisting of five items, was applied just once after all products were listed, thus capturing a more general form of green trust. This extension raises concerns about the validity of the scale in accurately measuring green trust as originally intended in the hypotheses. As a result, the scale adaptations may not have been completely adequate, which could lead to biased results. In addition, green trust is strongly influenced by factors such as brand image and brand awareness (Delgado-Ballester, 2004), which were not considered in this study. Participants' previous attitudes or experiences with the brands used in the study were not measured, which may have affected their trust in the products. Brand transparency and consistent communication of environmental commitments also play a crucial role in fostering green trust (Martínez, 2015), but these factors were not measured in relation to the brands used in this study. Without considering how familiar the participants were with the brands or how the brands communicated their environmental values, it is difficult to fully understand how green trust was formed in this context. Future research should address these limitations by improving the measurement tools for green trust and considering brand-related factors to gain a clearer understanding of how green trust influences sustainable consumer behavior.

A further limitation of this study is that personal product preferences were not considered. Although efforts were made to minimize this confounding variable by using the same brand for both the sustainable and non-sustainable product options, differences between product types still existed. For instance, some participants may generally prefer liquid soap over bar soap or roll-on deodorant over spray deodorant, which could influence

their choice regardless of sustainability. Since personal product preferences were not explicitly measured, this may have affected the results. Future research should account for participants' pre-existing preferences to better isolate the impact of sustainability on purchasing decisions.

One more limitation of this study is that it relies on stated intentions rather than observation of actual purchasing behavior. While intentions are revealing, they are only one aspect of actual behavior, and results can differ significantly when customers have the opportunity to make decisions in the real world. This discrepancy between stated intentions and actual behavior, often referred to as the attitude-behavior gap, is already being explored in studies of consumer behavior (Jing et al., 2022). For example, even when people express a high purchase intention due to feelings of guilt, this does not necessarily lead to actual purchase behavior. Factors such as situational constraints, perceived costs, or the availability of alternatives can influence the actual decision at the time of purchase (Sheeran, 2002). To address this limitation, future research could employ longitudinal studies that track consumer behavior over time to provide a more accurate measure of how intentions translate into actual actions or conduct an experiment in a real-world setting. Such studies would help bridge the gap between what consumers say they will do and what they actually do, offering deeper insights into the factors that drive sustainable purchasing behavior.

Another limitation could be not taking salary into account. Yue et al. (2020) study shows that price sensitivity has a negative impact on the relationship between environmental responsibility, environmental awareness, and the intention to consume green, indicating a significant restriction of the influence of economic factors on consumer behavior. This suggests that the effectiveness of environmental responsibility and environmental awareness in promoting green consumption is significantly lower when consumers are highly price sensitive. This limitation points to a possible discrepancy between consumers' environmental intentions and their actual purchasing decisions, especially under financial constraint. To address this limitation, future research should further investigate how economic factors such as income level influence the relationship between environmental attitudes and consumption behavior. This approach would lead to a more complete understanding of the barriers to green consumption and provide insights into how green products can be effectively promoted in different economic contexts.

A final limitation is the lack of geographical focus. This study does not specify a geographical focus, which could lead to variations in the data that are not taken into account. Different regions could have different environmental awareness, cultural influences on

purchasing behavior and different access to environmentally friendly products, which could significantly affect the results of the study. For example, a study by Liang et al. (2019) shows how cultural differences, such as those observed in China, can influence green purchasing behavior. In China, it was found that other-directed emotions such as gratitude and other-centered emotions have a stronger influence on green purchasing intentions than self-directed emotions such as guilt and pride. This is attributed to the collectivist culture in China, which places a strong emphasis on interpersonal relationships, leading people to be more sensitive to the behavior of others and more likely to recognize compliance or transgression of ethical and social norms. Future studies could have a geographical focus or conduct comparative analyses between different regions. This approach would make it possible to better understand how regional differences affect environmental purchasing behavior and help tailor strategies to specific cultures.

## 6. Conclusion

The increasing importance of the climate change challenge is making people around the world more aware of sustainable solutions. One of the main causes of the deterioration of the ecological environment is thoughtless consumption. For this reason, research in the field of sustainable consumer behavior is becoming increasingly important. This study examined the influence of psychological factors, specifically trait empathy and environmental guilt, on consumers' green purchasing intentions, while also investigating the mediating roles of green trust and environmental responsibility. The results have provided valuable insights into sustainable consumer behavior, contributing to both theoretical knowledge and practical applications in the field of green marketing.

Firstly, following the theory, the study confirmed that empathy has a positive influence on environmentally friendly purchase intentions. This supports the assumption that individuals with higher levels of empathy are more likely to make pro-environmental purchasing decisions. This is consistent with previous research showing that empathy promotes pro-social and pro-environmental behavior. Therefore, promoting empathic traits in consumers could be a practical strategy to promote sustainable consumption.

Secondly, the study showed that environmental guilt also has a significant positive influence on environmentally friendly purchase intentions. This supports the role of guilt as a motivational factor to encourage consumers to adopt environmentally conscious behavior. The results suggest that the use of environmental guilt in marketing strategies could be effective in increasing the intention to purchase green products.

In addition, the study found that environmental responsibility mediates the relationship between psychological factors and green purchase intention. This highlights the importance of creating a sense of responsibility for the environment among consumers. Marketing strategies that emphasize individual responsibility and the positive impact of sustainable choices can strengthen consumers' sense of responsibility and encourage green purchasing behavior. However, the mediator green trust shows no significant influence. Future research should investigate this effect with a more appropriate scale.

In summary, this study contributes to a deeper understanding of the impact of psychological factors on green purchase intentions. By highlighting the role of empathy, environmental guilt, green trust, and environmental responsibility, it provides relevant insights for companies and policy makers seeking to promote sustainable consumption. In

the future, individuals, businesses and legislators should consider these findings when creating implications to promote sustainable consumer behavior.

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## Appendix

### Appendix 1: Survey Questionnaire



What is your age?



Please indicate to what extent you agree with the following statements.

When I see someone being taken advantage of, I feel kind of protective toward them.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

When I see someone being treated unfairly, I sometimes feel pity for them.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I often have tender, concerned feelings for people less fortunate than me.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I would describe myself as a pretty soft-hearted person.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Sometimes I feel sorry for other people when they are having problems.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Other people's misfortunes can disturb me a great deal.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I am often quite touched by things that I see happen.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree



Do you go grocery shopping yourself?

Yes

No



You are shown two product options, please decide which one you would rather buy.

Please note, even if you would not normally buy the product, this is exclusively about the choice between the two options.



Gillette Blue3 Simple  
Disposable Razor

Price: 3,95€  
Quantity: 8



Gillette Mach3 Razor

Price: 8,95€  
Quantity: 1

Which of the products would you be more likely to buy?

Gillette Blue3 Simple Disposable Razor

Gillette Mach3 Razor



Ariel Washing Powder

Price: 5,95€

Quantity: 20 Washes



Ariel Washing Liquid Detergent

Price: 7,95€

Quantity: 25 Washes

Which of the products would you be more likely to buy?

Ariel Washing Powder

Ariel Washing Liquid Detergent



Nivea Pure Invisible Deodorant Spray

Price: 2,45€

Quantity: 150ml



Nivea Pure Invisible Roll-On Deodorant

Price: 2,35€

Quantity: 50ml

Which of the products would you be more likely to buy?

Nivea Pure Invisible Deodorant Spray

Nivea Pure Invisible Roll-On Deodorant



Renova Kitchen Towels Max Absorption XXL

Price: 3,65€

Quantity: 2 Rolls



Renova Kitchen Towels Recycled XXL

Price: 3,45€

Quantity: 2 Rolls

Which of the products would you be more likely to buy?

Renova Kitchen Towels Max Absorption XXL

Renova Kitchen Towels Recycled XXL



Palmolive Olive & Milk Liquid Soap

Price: 1,55€

Quantity: 300ml



Palmolive Soap Bar Olive & Milk

Price: 0,65€

Quantity: 90g

Which of the products would you be more likely to buy?

Palmolive Milk & Olive Liquid Soap

Palmolive Milk & Olive Bar Soap



Toptil 3in1 Washing Caps

Price: 4,45€

Quantity: 22 Washes



Toptil 3in1 Washing Caps

Price: 3,45€

Quantity: 16 Washes

Which of the products would you be more likely to buy?

Toptil 3in1 Washing Caps (22 Washes)

Toptil 3in1 Washing Caps (16 Washes)



**Bamboo Toothbrush**

Price: 2,25€

Quantity: 1



**Toothbrush**

Price: 2,95€

Quantity: 1

Which of the products would you be more likely to buy?

Bamboo Toothbrush

Toothbrush

Please remember the sustainable product options that were shown to you earlier and answer the following questions.

You feel that these products environmental reputation is generally reliable.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

You feel that these products environmental performance is generally dependable.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

You feel that these products environmental claims are generally trustworthy.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

These products environmental concern meets your expectations.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

These products keep promises and commitments for environmental protection.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Please indicate to what extent you agree with the following statements.

I will feel sad if I behave in an environmental unfriendly way.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I will feel guilty if I behave in an environmental unfriendly way.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I will feel remorse if I behave in an environmental unfriendly way.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

My actions impact the health of the environment.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I have the power to help protect the environment.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

I can make a change in my community.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree



Almost done, now a few final questions about yourself.

How do you describe yourself?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

What best describes your occupation?

- Employed
- Unemployed
- Student
- Worker and Student
- Retired
- Other

What is your highest level of education?

- Less than high school
- High school graduate
- Bachelor's degree
- Master's degree
- Doctorate
- Other