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# Beauty in Balance: Assessing the Importance of Sustainability in Cosmetic Purchasing Decisions among Portuguese Consumers

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Master's in Management of Services and Technology

Supervisor:

PhD Isabel Cristina de Seixas Patrício Duarte de Almeida, Invited Assistant Professor

ISCTE-IUL

May, 2025

BUSINESS
SCHOOL

Department of Marketing, Operations and General Management

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## Acknowledgement

As I reach the end of this important stage in my academic life, I would like to express my sincere gratitude to every single person who contributed to making this journey possible, whether directly or indirectly.

To my mother, for her unconditional love, strength, and the example of resilience she as always set me. To my father, for his quiet but unwavering support, and for believing in me when I didn't believe in myself. And to my sister, for her friendship and encouragement, even in the most difficult times.

David, thank you for your patience, affection and understanding throughout this journey. Your support was invaluable, helping me holding on, even when it felt like I was collapsing.

To my grandparents, for their immense love, their simple words and their wisdom. Your support has provided me with a safe harbour along the way.

I would also like to thank my supervisor, Professor Isabel, for her attentive guidance and valuable advice, all of which were fundamental to the completion of this thesis. Her expectations and support were instrumental in my academic and personal development.

Finally, I would like to express my sincere thanks to everyone who took part in or published my questionnaire. By dedicating their time and attention to providing answers, they helped me to broaden the scope and diversity of the responses.

## *Resumo*

A Terra está a atingir o seu ponto de rutura. As ações humanas estão a ter efeitos substanciais e irreversíveis no nosso planeta, sendo assim necessário remediar estas questões antes que seja demasiado tarde. De forma a evitar mais danos ambientais, as empresas estão a implementar novas políticas para mitigar os impactos negativos do consumo insustentável. Esta consciencialização foi também expandida para a sociedade, e consequentemente, verifica-se um aumento na procura por produtos verdes, contribuindo para a sustentabilidade, não sendo o mercado dos cosméticos uma exceção. Ainda assim, existem outros fatores (custos, variáveis demográficas, etc.) que devem ser considerados no momento de compra. Deste modo, o principal objetivo desta dissertação é investigar de que modo a sustentabilidade influencia o comportamento de compra dos consumidores portugueses no que diz respeito à indústria dos cosméticos, surgindo então a questão central desta investigação – "Até que ponto os benefícios percebidos, como o impacto na saúde e no ambiente, influenciam a disposição dos consumidores para pagar por produtos verdes?"

Apesar do aumento da consciência ambiental e de uma preferência crescente por produtos sustentáveis, existe uma discrepância notável entre as intenções dos consumidores e o seu comportamento em relação aos cosméticos verdes. Embora muitos consumidores defendam verbalmente a compra de cosméticos ecológicos, o seu comportamento real de compra diverge frequentemente dessas crenças declaradas. Esta discrepância evidencia uma lacuna crítica na compreensão das motivações e barreiras subjacentes que influenciam o processo de decisão dos consumidores na indústria dos cosméticos. Para compreender esta divergência entre atitudes e comportamentos, o objetivo é analisar e estudar as intenções de compra dos consumidores portugueses que influenciam as suas decisões ao longo de processo de tomada de decisão.

É imperativo colmatar esta lacuna para (i) identificar os verdadeiros fatores que impulsionam o consumo dos cosméticos sustentáveis e (ii) desenvolver estratégias que aproximem as intenções dos consumidores das suas ações, promovendo assim contributos mais significativos para a proteção ambiental. Além disso, numa perspetiva de gestão, é essencial explorar de que forma as empresas de cosméticos podem comunicar de forma eficaz as suas iniciativas de sustentabilidade e os atributos dos seus produtos aos consumidores. Assim, (iii) estratégias eficazes de comunicação e marketing, focadas nos benefícios ambientais dos produtos cosméticos verdes, poderão influenciar positivamente

as perceções e o comportamento de compra dos consumidores e as suas decisões de compra.

**Palavras-Chave:** Sustentabilidade; Produtos Verdes; Cosméticos; Consumidores Portugueses; Comportamento do Consumidor; Hiato Atitude-Comportamento; Intenção de Compra.

**Sistema de Classificação JEL:**

D12- Economia do Consumidor: Análise Empírica

D91- Papel e Efeitos dos Fatores Psicológicos, Emocionais e Sociais e Cognitivos na Tomada de Decisão

Q56- Ambiente e Desenvolvimento • Ambiente e Comércio • Sustentabilidade • Contabilidade e Registo Ambiental • Equidade Ambiental • Crescimento Ambiental

## *Abstract*

Earth is reaching its breaking point. Human actions are having, substantial, detrimental effects on the planet, and it is necessary to remedy these issues before it is too late. To prevent more environmental hazards, companies are creating new policies to mitigate the negative impacts of unsustainable consumption. This awareness was also expanded to society, and consequently, there is a higher demand towards green products, contributing to sustainability, and the cosmetics market is no exception. Still, other factors (costs, demographic variables, etc.) need to be considered at the moment of purchase. Thus, the main scope of this dissertation is to investigate how sustainability influences the consumer behaviour of Portuguese consumers in the cosmetics industry emerging the central question of this research – "To what extent do perceived benefits such as health and environmental impact influence consumers' willingness to pay for green "cosmetics?".

Despite increasing environmental awareness and a growing preference for sustainable products, a notable discrepancy exists between their intentions and their behaviour regarding green cosmetics. While many consumers vocally advocate buying eco-friendly cosmetics, their actual purchasing behaviour often diverges from these stated beliefs. This discrepancy highlights a critical gap in understanding the underlying motivations and barriers influencing consumer decision-making in the cosmetics industry. To understand this attitude-behaviour gap, the aim is to analyse and study the consumers' purchase intentions and what variables are underlined in Portuguese consumers patterns that influence the consumers' decisions in the decision-making process.

It is imperative to close this gap to (i) uncover the valid drivers of sustainable cosmetics consumption and (ii) develop strategies that bridge the gap between consumer intentions and actions, thereby fostering more meaningful contributions to environmental protection. Furthermore, from a management perspective, it is essential to explore how cosmetics companies can effectively communicate their sustainability initiatives and product attributes to consumers. Therefore, (iii) effective communication and marketing strategies regarding the environmental benefits of green cosmetic products could positively influence consumers' perceptions and purchasing behaviour, thus reducing the gap between consumers' attitudes and purchasing decisions.

**Key Words:** Sustainability; Green Products; Cosmetics; Portuguese Consumers; Consumer Behaviour; Attitude-Behaviour Gap; Purchase Intention.

**JEL Classification System:**

D12- Consumer Economics: Empirical Analysis

D91-Role and Effects of Psychological, Emotional, Social, and Cognitive Factors on Decision Making

Q56- Environment and Development • Environment and Trade • Sustainability • Environmental Accounts and Accounting • Environmental Equity • Population Growth

# Glossary

**ATT-** Attitude Towards the Behaviour

**BB-** Behavioural Beliefs

**CB-** Control Beliefs

**CBH-** Consumer Behaviour

**CP-** Cosmetic Product

**EU-** European Union

**GP-** Green Product

**H-** Hypotheses

**INT-** Behavioural Intentions

**MC-** Motivation to Comply

**NB-** Normative Beliefs

**OE-** Outcome Evaluation

**PBC-** Perceived Behaviour Control

**PV-** Perceived Value

**SCB-** Sustainable Consumer Behaviour

**SN-** Subjective Norms

**TPB-** Theory of Planned Behaviour

**TRA-**Theory of Reasoned Action

**WPP-** Willingness to Pay Premium

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# CHAPTER 1

## Introduction

Environmental degradation is increasing as a result of unsustainable consumption patterns, which has become a major concern for governments, businesses and consumers. (Peattie & Crane, 2005). This increase in the degradation of our planet has led to a rise in environmental awareness, consequently raising more concerns within the society and prompting consumers to seek products that better align with their ethical values (Ogiemwonyi & Jan, 2023), particularly in industries with a greater environmental and ethical impacts.

This scenario has fuelled the development of and demand for sustainable products, including green cosmetics - products formulated with natural ingredients, minimally processed and with a reduced environmental impact throughout their life cycle (Martins & Marto, 2023). In response, the cosmetics industry has been undergoing a significant transformation to meet these changing demands. Consequently, green cosmetics have emerged as a growing segment, aiming to reduce the ecological footprint of beauty and personal care routines (Amberg & Fogarassy, 2019).

However, despite the increase in environmental awareness and the declared intention to consume more sustainably, several studies show a significant discrepancy between pro-environment attitudes and consumers' actual purchasing behaviour (Gleim et al., 2013; Johnstone & Tan, 2015). Some factors such as price sensitivity, perceived product efficiency, and lack of trust in green claims may all contribute to this gap.

This discrepancy, often referred to as the 'attitude-behaviour gap', poses a significant challenge to researchers and marketers, as consumers say they value sustainable attributes, but don't always translate this into purchase behaviour (Joshi & Rahman, 2015). Understanding the reasons behind this phenomenon is crucial, not only for the advancement of academic knowledge, but also for the development of effective communication strategies and the positioning of cosmetic companies (Yadav & Pathak, 2017).

Moreover, in this context, the present research follows the Theory of Planned Behaviour (Ajzen, 1991) as a theoretical model, with the main scope of analysing the purchase intention of green cosmetics by Portuguese consumers. Further, by identifying

of variables such as attitudes, subjective norms and perceived behavioural control, it seeks to comprehend what are the key factors influencing the willingness to pay premium for green products, thereby helping to reduce the existing gap between intention and behaviour.

Understanding this gap is particularly relevant in the Portuguese context, where sustainability awareness is growing but the actual market for green cosmetic products remains modest. Cultural factors, economic constraints and limited access to certified sustainable products all play an important role in shaping consumer decisions. Therefore, studying the specific motivations and barriers faced by Portuguese consumers can provide valuable insights for both academia and industry.

During the development of this dissertation, a comprehensive literature review will be conducted in order to build a solid theoretical foundation, attempting to contribute to the existing literature by constructing a theoretical model grounded in the Theory of Planned Behaviour (Ajzen, 1991). Additionally, the concept of the attitude-behaviour gap will be explored, particularly in the context of green cosmetics. Several studies have proven that, when it comes to consumer behaviour, the intention is highly correlated with the manifested behaviour (Ajzen, 2011; Bălău, 2018). Although these two indicators are directly related, it is very important to consider that the gap between them does exists and that there are some external factors that contribute to this gap, such as financial constraints, availability and situational barriers (Ronda, 2024; Vermeir & Verbeke, 2006). This study aims to emphasise the pivotal role of intention in explaining behaviour, while also addressing the theoretical inconsistency observed in the context of green consumption.

In order to understand the gap that exists in the Portuguese market regarding green cosmetic products, this dissertation will complementarily adopt an extended version of the Theory of Planned Behaviour, developed by Yadav & Pathak (2017). This version of the theory is often used to study consumers' purchase intentions regarding green products and has repeatedly proven its effectiveness. Also, this model is well-regarded for its strong predictive capacity of consumer behaviour, as it is flexible and allows for the inclusion of additional variables that may be relevant to the specific context under analysis. Empirical evidence as demonstrated that this theory is effective in explaining green consumption (Ha et al., 2019).

To summarise, environmental issues are nowadays a trending topic, frequently discussed across various areas of our daily lives. Therefore, in order to overcome the emerging environmental challenges, a collective commitment from society is required, starting with consumers taking responsibility for their consumption habits and, consequently, changing their unsustainable consumption behaviours. This dissertation aims to delve into this highly relevant topic. Accordingly, it seeks to address the following research questions: Which factors have the greatest influence on Portuguese consumers' intention to purchase green cosmetic products? Why does an attitude-behaviour gap exist in Portuguese consumption patterns, leading to an intention to act but often resulting in no actual purchase behaviour?

To actually answer these previous questions, this thesis was structured as follows:

- Introduction, where the problem is presented, revealing why it is relevant, and where the structure of this study is outlined, highlighting its objectives and clarifying the questions that are to be answered.
- Literature Review, providing theoretical support to the study, presenting the most relevant topics with references to past studies, in order to validate the present study. In this section, the model and theory under study will also be introduced, along with the variables that constitute them. This chapter will serve as foundation for this work, where all the necessary information for the continuation of this study will be outlined.
- Methodology, which will contain and explain all the steps taken throughout the data collection and analysis process.
- Results and Analysis, where statistical data and analysis will be presented to validate the model's reliability and identify the most significant factors.
- Conclusions, discussing the implications of the results presented earlier, outlining the limitations, and offering suggestions for future research in the area.

CHAPTER 2

# Literature Review

## 2.1. Theoretical Framework

### *2.1.1. Sustainability*

The concept of sustainability is prevalent nowadays and it is a concept of common knowledge which can be integrated into different fields of study since it is a multifaceted concept that encompasses the sensible and equitable use of resources without compromising the ability of future generations to meet their own needs (WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1987). The term was used for the first time by Hans Carl von Carlowitz in 1712 but only received the attention owed in 1987 when Norway's Prime Minister elaborated the report Our Common Future.

The evolution of the concept into its modern meaning involves the interaction of concepts and ideas related to social justice, resource management, environmental protection, and economic viability (Dresner, 2008). According to both (Dresner, 2008; Rees, 1996), it is essential to highlight the relationship between ecological sustainability and the economic system, as well as the significance of striking a balance between resource protection and economic growth.

I. Environmental Dimension:

In the environmental context, sustainability refers to the responsible use of resources to ensure their preservation. It is a critical aspect of contemporary discourse, particularly due to digital transformation and its implications. (Feroz et al., 2021) highlight the importance of understanding the intersection between digitalisation and environmental sustainability. As described by (Feroz et al., 2021), it embodies the responsible use of digital technologies to minimise negative environmental impacts. It involves the use of digital transformation strategies to optimise resource efficiency, reduce carbon emissions and mitigate environmental footprints across different sectors. According to ( Chen et al., 2020) the potential of digital technologies such as IoT, AI and blockchain to streamline production processes, optimise energy use and increase the resource use efficiency is highlighted.

II. Social Dimension:

Both (Eizenberg & Jabareen, 2017; Ferreira et al., 2023) argue for integrating social sustainability concepts into business operations. This includes increasing stakeholder participation, implementing fair labour standards, promoting diversity and inclusion, and engaging in community development initiatives. Organisations that prioritise social sustainability can create robust and inclusive economic models that benefit society.

III. Economic Dimension:

Economic sustainability, as defined by (Cardoni et al., 2020) encompasses the ability of SMEs to remain profitable and competitive over time while minimising negative externalities and maximising positive impacts on stakeholders. It involves creating a business environment conducive to long-term growth, innovation, and resilience.

### *2.1.2. Sustainable Development*

Sustainable development consists of a holistic approach to development, which seeks to provide for economic growth and environmental concerns on an equal footing. The concept encompasses a multidimensional perspective that includes economic growth, social progress and environmental protection (Castro & Lopes, 2022; Mensah, 2019).

The fundamental truth of sustainable development is the understanding of the finiteness of resources, which requires prudent and efficient management of assets to safeguard them for prosperity (Subramaniam et al., 2023). It represents a shift from traditional perspectives on development, which prioritise the generation of economic benefits over long-term environmental feasibility. The great challenge of sustainable development is to balance environmental preservation with human development, securing that the Earth's capacity to renew itself is not overwhelmed by economic activities (Sever & Tok, 2023; Subramaniam et al., 2023).

Environmental concerns are directly related to economic development, so there is a need to adopt fair policies that ensure both economic growth and social equity. Sustainable development highlights the importance of equal opportunities in society, defending the rights and basic needs of all citizens in order to ensure that the benefits from sustainable development are contributing for all individuals (Ahmad et al., 2024).

This concern goes hand in hand with the recognition that future generations have the right to live on a healthy planet that can meet the same needs as the current generation (Castro & Lopes, 2022). It is of major significance that current generations understand the consequence of their acts, adopting a responsible posture and mindset that aims to reduce the harmful environmental impacts.

However, achieving a more sustainable developed world requires governments, stakeholders and communities to work together towards the same goal. With the combined expertise and resources of these members, it is possible to meet the challenges that arise and effectively manage future needs (Wojewnik-Filipkowska & Węgrzyn, 2019).

In short, sustainable development can be described as an approach that conjugates environmental protection, economic growth and social equity, while promoting a more sustainable world in which present and future generations can enjoy quality of life while working together towards the planets well-being and the development of communities.

### *2.1.3. Sustainable Consumption*

The concept of sustainable consumption emerged from the recognition of that now-a-days, the patterns of consumption are truly unsustainable, and they can have major negative impacts on both environmental degradation and social inequities, especially in industrialized countries (Glavič, 2021). It refers to the behaviour and practices involved in approaching, purchasing or consuming products and services in an environmentally friendly manner (Nekmahmud, Ramkissoon, et al., 2022).

According to Al-Nuaimi & Al-Ghamdi (2022), this concept is based on the usage of goods and services, in a less harmful way, combining the human needs with the improvement of the quality of life. For this purpose, consumers tend to opt for products that exclude toxic materials and minimise emissions throughout their entire lifecycle.

Guillen-Royo (2019) states that there are two perspectives towards sustainable consumption, (I) the Weak Sustainable Consumption, which focuses on energy-saving behaviour and emphasizes the consumption of materially efficient products, producing low emissions levels; (II) the Strong Sustainable Consumption, that highlights a culture of simplicity and promotes absolute reductions in the levels of consumption, not just mere improvements.

In essence, sustainable consumption is about choosing what is better for the environment, not forgetting about the human needs and enhancing the quality of life. It is necessary a shift in consumers' habits in the path of eco-friendly practices, which is vital in order to achieve long-term sustainability goals (Glavič, 2021; Nekmahmud, Ramkissoon, et al., 2022).

### *2.1.4. Green Consumer*

Earth has been through major sustainability disruptive changes during the last centuries, and there is a need for citizens to be well informed about how to become more environmentally friendly and how to proceed in their daily activities to reduce both human and environmental impacts (Oskamp, 2000). The consciousness of this problem is leading consumers to adopt a new vision and behaviour towards the products that they intend to buy, creating a new segment of consumers, designated as green consumers (Patak et al., 2021).

Characterized for developing a special attention to their responsibility in protecting the environment, green consumers seek to minimize their environmental impact when acquiring new products (S. C. Chen & Hung, 2016; Roberts, 1996). These consumers analyse the environmental consequences of the value chains of the products, considering both production and consumption impacts before deciding if the product is worth of being bought, in other words, if it is eco-friendly (Ottman et al., 2006). It is also relevant to refer that, even though these consumers want to opt for more sustainable products, they also look after the main reason why they are buying the products in the first place, buying only those that can combine sustainability with the desired benefits (Schuitema & de Groot, 2015).

The concerns of green consumers go much further than simply choosing an environmentally friendly product or service. Instead, these consumers evaluate the environmental footprint of the product or service and avoid those that harm the environment during the manufacturing process, generate large amounts of waste, cause damage to endangered species and habitats, and generate pollution that causes multiple harms to human health (González-Viralta et al., 2023; A. Sharma & Joshi, 2017). These consumers do not only care about purchasing green products, for them there is a need for companies to engage with green activities throughout the supply chain, such as recycling and productively recovering resources (Qiao et al., 2023; A. Sharma & Foropon, 2019).

This group of consumers brought a new perspective towards consumption that is generating a green movement in order to prevent additional environmental hazards, causing multiple changes in the consumers behaviour, and gradually switching some companies' policies (Pitaloka et al., 2023). Since this is a matter of great significance for these consumers, they are willing to pay up to a 10% higher price for green products, verifying all environmental criteria fulfilled (Yang et al., 2021). Because of this phenomenon companies see themselves adopting new practices and measures in order for society to see their effort greening the production and consumption processes and consequently contributing to environmental sustainability (Thongplew et al., 2017).

#### *2.1.4.1. Profiling Green Consumers*

Although green consumers may pretend to minimise the environmental impact of their consumption choices, every consumer has other interests and motivations. Based on their behaviour, these consumers may be categorized into 3 different groups: (1) "light green consumer"”; which engage in minimal green behaviours, and occasionally purchase green products; (2" “medium green consumers”; being more consistent in acquiring eco-friendly products, but yet not fully dedicated; "3) “dark green consumers”; always prioritizing sustainable consumption (C.-S. Chen et al., 2023).

According to Cervellon & Carey (2011) there are also essentially 3 types of green consumers considering their motivation; (1) the ones that consider their health as a major priority, and consequently purchase green products for their own benefit; (2) the eco-friendly consumers that choose to buy green products with the main scope of contributing to preserve the environment; (3) and finally, the quality chasers, who believe that by buying green products they will get the desired effect because these products are more efficient.

To have a better comprehension of the different profiles of green consumers, it is important to analyse both demographic and psychographic factors (Jaiswal et al., 2021; Shahsavar et al., 2020). While psychographic variables focus on cognitive and attitudinal beliefs, demographic variables show a broad overview of consumer characteristics (Jaiswal et al., 2021).

### *2.1.4.2. Profiling Portuguese Green Consumers*

In the twenty-first century, consumers' ecological awareness has increased due to the direct negative effects of consumption on the environment, such as pollution and huge amounts of waste (Svensson & Wagner, 2012). Although this is a strong motive, it is not the only one that drives Portuguese consumers to choose green products. For Portuguese citizens, issues such as health, the origin of products and prices are strong motives to take into account at the moment of purchase (do Paço & Raposo, 2009; Luzio & Lemke, 2013).

According to (Luzio & Lemke, 2013), Portuguese consumers have two main reasons for acquiring green products: (1) the association of green products with health benefits, some consumers state that they started to buy green products because of the environmental impact, but the consistency of buying these products came only after understanding that these products have major health benefits; (2) the relationship between green products and national products, for social, economic and environmental motives, but this motive can be intriguing and cause dilemmas related to the place of production, since some Portuguese companies produce their products in other countries.

Finisterra do Paço & Raposo (2010) conducted a study among Portuguese consumers, with the main objective of understanding how these consumers can be segmented based on several variables, such as age, gender, education level, etc., and what are the perceptions and expectations towards green consumption. To this end, 887 Portuguese consumers, aged over 18 years old, answered a survey, which allowed these authors to create three segments of Portuguese consumers.

The first segment represents about 36% of consumers, being intitled of "the uncommitte"". This group is mainly constituted by young people, aged from 18 to 34 years old, being composed of sales, service, and administrative workers, as well as students, in their great majority having high levels of education (secondary and higher education), and gaining between 500€ and 1000€ per month. Most of the identified consumers are urban dwellers with negative attitudes towards environmental activities, such as recycling and resource saving, despite claiming to have environmental knowledge.

The subsequent segment is designated as "the green activist"", representing 35% of the citizens, and it is composed mainly by 2 age gaps, the first one between 25 and 34years old, and the second one between 45 and 54 years old. These consumers present the higher levels of education, and have the most qualified jobs, consequently receiving

the highest incomes of the three segments. Lastly, when it comes to their environmental behaviour, they positive positioning, such as high perceived consumer effectiveness and sensitivity to economic factors related to environmental issues.

Finally, the third segment is referred to as 'the undefine" and represents 29% of consumers. These consumers have a lower level of education than the other two groups and a higher age gap. They are also highly sceptical of environmental claims made by companies, although they do tend to adopt some positive environmental behaviours, such as recycling and activism.

Both authors highlight key findings for the segmentation of Portuguese consumers. Luzio & Lemke (2013), identified the main motivators for green consumption, referring to the health benefits and the origin of the products. Meanwhile, Finisterra do Paço & Raposo (2010) studied how demographic variables, such as age or qualifications, can influence Portuguese consumers.~

### *2.1.5. Green Product*

A Green Product (GP) can be defined as an eco-friendly or as an ecological product developed with the primary aim of reducing environmental impact. According to (Barbu et al., 2022), these products main purpose is to minimise waste and pollution, and to conserve resources, promoting ecological balance throughout its entire life cycle. This positive consequence on the environment is possible due to the eradication of toxic substances and preservation of the energy sources (Esmaeilpour & Bahmiary, 2017).

However, when defining green product, it is important to note that this concept is complex, since there is no such thing as a truly sustainable product, or an 100% green product, due to the fact that is impossible to produce a product that will have 0 impact on the environment during its full life cycle (Pickett-Baker & Ozaki, 2008). Although, if a product presents low levels of environmental impact, it is correct to consider it as an eco-friendly product.

These products are characterised by the fact that they are recyclable, do not require much packaging and use safer materials for their packaging. It is possible to consider organic products and energy efficient products as green products (Barbu et al., 2022).

GPs follow sustainable practices throughout their entire creation process, from design to manufacturing and packaging, making them more environmentally friendly than

conventional products (Marques & Almeida, 2013). By following this sustainable production process, these products help to alleviate the global environmental crisis.

The development of green products is supported by both, green transformational leadership and green entrepreneurial orientation, which play a major role in performance and innovation (Kamalanon et al., 2022). Green products depend on companies' sustainable development and on their willingness to adopt green practices to align with consumers expectations.

### *2.1.6. Cosmetic Products*

The concept of "cosmetic product" (CP) is of great importance within the regulatory framework, particularly in the European Union (EU), as outlined in various directives and regulations. The term "cosmetic product" refers to substances or preparations intended to be applied to the human body with a view to cleaning, beautifying, or modifying its appearance without altering its structure or function, as defined in Directive 76/768/EEC and subsequent amendments (European Union, 2009).

Any product intended for use on the external parts of the body, such as the epidermis, nails, hair, lips, teeth, mucous membranes of the mouth and external genital organs, is considered a CP (Uckaya et al., 2016). They comply a wide range of categories of product, since the corporal hygiene products (shampoos, deodorants, bath gels, toothpastes, and soaps), to beauty products (make-up, nail polishes and hair dyes). Products with similar purposes, but which are administered by ingestion, injection, inhalation or implantation, do not belong in the cosmetics category (INFARMED - Autoridade Nacional do Medicamento e Produtos de Saúde I.P., 2024).

It is important to note that the classification of a product as a "cosmetic product" is based on its intended use and characteristics, rather than its composition or specific ingredients(European Union, 2009). The CP authorised to be marketed in the EU must comply with several conditions to guarantee health safety, such as the preservation of the product throughout the value chain, from the initial stage (production) to the consumer, maintaining all its characteristics and qualities; and that the information provided to the end user of the product ensures its correct use. In order to fulfil these requirements, there are some amendments that the CP must attend, in particular:

a) Cumprimento do Regulamento (CE) nº 1223/2009.
b) Cumprimento do Regulamento (UE) nº 655/2013.

One CP can be composed of 3 types of ingredients, each one with different purposes. (Faculdade de Farmácia da Universidade do Porto, 2024). Firstly, there are the active ingredients, that according to the diverse categories of cosmetics, are the ones that present relevant action, for example, anti-age or hydration. Then, the ones that contribute to the physical presentation of the product, such as viscosifying and emulsifying agents, which are designated as technological or primary ingredients. Lastly, the CP may also have the secondary/specific ingredients, whose purpose is to maintain the physical, chemical, and microbiological stability, for example the conservants, or to provide a specific fragrance.

#### *2.1.6.1. Green Cosmetic Products*

The history of cosmetics refers back to the ancient Egypt, where its usage was mainly for hygiene and health benefits (Amberg & Fogarassy, 2019). With the evolution of time, cosmetic products were also developed, adapting to the needs of its users, improving the raw materials used and the techniques applied in its production.

Since many industries arise environmental problems, there is a need to adopt new practices and to eliminate harmful chemicals from products (Cervellon & Carey, 2011), and with this new need emerged the concept of green cosmetics. This change was potentialized by increasing popularity that the cosmetics industry is gaining in the past few years. According to Acharya et al. (2021), it has been an emerging concern towards toxic substances and their enduring impact on health, provoking an estimated growth of 10% in the cosmetics industry per year until 2024.

With the growing popularity of these new green cosmetics, has increased the search from consumers towards natural ingredients in their personal care and hygiene products (Amberg & Fogarassy, 2019). The reality is these consumers care about naturally derived ingredients and production using sustainable technologies, in addition to the products' effectiveness and safety (Morganti et al., 2021).When analysing the composition of this type of product, it is possible to identify various advantages, such as reduced water waste, elimination of environmentally harmful substances and recyclable packaging (Amberg & Fogarassy, 2019).

Another way to define green cosmetics is that they emphasise sustainable and ethical considerations throughout the production process. Aiming to address issues such as animal and worker welfare and the environmental impact of unsustainable production, these cosmetics also avoid harmful practices such as child labour or animal testing (Suphasomboon & Vassanadumrongdee, 2022).

In essence, according to (Suphasomboon & Vassanadumrongdee, 2022) the concept of green cosmetic involves understanding and integrating ethical concerns and perceived value, comprehend and promote sustainable consumption patterns within the cosmetics industry.

### *2.1.7. Consumer Behaviour*

According to Han (2021) Consumer Behaviour (CBH) can be described as the actions and processes of individuals behind the act of acquiring a new product or service, such as, selecting, purchasing, using and disposing of. It comprehends the fundamental factors that underpin the decisions of consumers when purchasing a new product, based on their consumption values (Mason et al., 2023).

CBH englobes a wide range of activities and decisions that consumers undertake before, during, and after buying something new (a product, service, or experiences). It also includes understanding how consumers interact with their new acquisitions, and what perceptions urge as a result of that interaction (Vidal-Ayuso et al., 2023). Similarly to other human behaviours, also CBH is very personal, and individuals tend to hide it. Veselovská et al. (2021) states that this type of behaviour is dependent on a wide range of factors that are not measurable, so they have different consequences on different individuals.

This concept is also related to diverse psychological, economic and social drivers, that influence consumers' decision-making, as a response to stimulus provoked by marketing strategies (Han, 2021; Sheth, 2021). By understanding the consumers' behaviour, companies can work on their marketing strategies and turn products more attractive to consumers eyes (Veselovská et al., 2021).

Consumer Behaviour as a concept has evolved for the last 50 years, and it encompasses explanations from the behavioural sciences, including clinical psychology. It makes known non-rational behaviours, and the focus on information processing and

perceptual biases (Sheth, 2021).When defining CBH, it is also important to highlight how consumers' judgement is influenced by both functional and non-functional components, depending on past individual experiences, making it difficult to predict their predisposition and intentions of purchase (Pajić, 2019; Sheth, 2021).

#### *2.1.7.1. Sustainable Consumer Behaviour*

Sustainable Consumer Behaviour (SCB) as a concept refers to the action and decisions made by consumers that consider the long-term impact on the environment and society (Francis & Sarangi, 2022). This behaviour encompasses a wide range of activities that aim to reduce negative impacts and promote sustainability, warning consumers how their consumption choices affect the planet (Francis & Sarangi, 2022; White et al., 2019).

It involves understanding the diverse ways in which consumers interact with products and services with green characteristics, and what strategies and measures can be implemented to promote the consumers' engagement in circular practices (Vidal-Ayuso et al., 2023). To comprehend consumers perspectives towards SCB it is important to analyse, the initial purchase, and the continuous participation in activities that are essential to maintain the circular economy loop, such as, recycling, repairing, and upcycling.

SCB is a crucial element for businesses and policymakers in developing strategies that motivate consumers to opt for more sustainable consumption patterns and simultaneously underpin the goals of the circular economy (Vidal-Ayuso et al., 2023). Through the analysis of the motivations, attitudes, and decision-making processes of consumers, stakeholders can identify the main barriers to circular practices and plan new strategies to encourage more sustainable behaviours.

## 2.2. Construct Definition and Research Hypothesis

The importance of studying consumers' behaviours and intentions of purchase, in order to predict their actions has grown relevant in the past few years. By analysing the collected data, companies may adopt new strategies and measures to increase the sales of green products, reaching their sustainable goals.

The main scope of this chapter is to understand how the Theory of Planned Behaviour (TPB) (Ajzen, 1991) influences the consumers choices towards green products, such as green cosmetics, thus building hypotheses based on this theory. Therefore, the following sections will be based on this theory and will serve to explore what variables may distinguish the consumers behaviour.

### *2.2.1. Theory of Planned Behaviour*

The Theory of Planned Behaviour (TPB) is a widely used framework for analysing and predicting human behaviour, based on social psychological models (Sussman & Gifford, 2019). It was first developed to explain human behaviour in a specific situation (Ajzen, 1991), but its usage was soon extended to understand and study the decision-making process. According to Soliman (2021), in this theory, both voluntary and non-voluntary factors are carefully considered to explain an individual's behaviour. This model suggests that there are three main elements; Attitude towards the behaviour (ATT), Subjective Norms (SN), and Perceived Behaviour Control (PBC); which shape Behavioural Intentions (INT), consequently determining actual behaviour (Mancha & Yoder, 2015; Soliman, 2021).

The origin of this theory dates back to 1975 as a result of an extension of the Theory of Reasoned Action (TRA) by Fishbein & Ajzen. Therefore, the main reason for TPB's emergence is related to the fact that the original model had certain limitations that later needed to be addressed, such as, its inability to account for behaviours that are not entirely under volitional control (Ajzen, 1991).

(Ajzen, 1988, 1991) felt the need to expand the theory in order to include PBC after realising that, in everyday life, individuals' behaviour does not depend entirely on their own control but also on external constraints, such as money, time, or even skills. As the TRA theory (Ajzen, I., & Fishbein, 1980) only considered the intentional factors of human behaviour, such as attitude and subjective norms, the theory ultimately proved to be inaccurate and did not provide a reliable result, as it fails to analyse the influence that

opportunities and available resources have on a consumer's behavioural intention (Ajzen, 1991; Madden et al., 1992).

According to (Warkula et al., 2023), the Theory of Planned Behaviour suggests that despite the existence of internal and external factors that influence an individual's behaviour, the key determinants are one's intentions. In addition, an individual's beliefs about a particular behaviour, including expectations and outcomes, influence attitudes and intentions, resulting in the prediction of behaviour.

Furthermore, it can be used to explain and predict human behaviour and motivation in fields as diverse as financial literacy and behavioural science, where attitudes, knowledge and behaviour are interlinked (Warkula et al., 2023; Xing & He, 2021). And the green industry sector is no different. This theory can be applied to analyse and predict a consumer's decision regarding green products, considering that green consumers choose to make environmentally responsible choices (Han et al., 2020).

W. Sun (2020) considers that in the TPB, ATT are shaped by an individual's beliefs regarding the consequences of their behaviour; SN are linked to the social influences and pressures that an individual feels from the community to act in a certain way; PBC is directly related to the perception of the level of difficulty one will experience when performing a certain task. In addition, (W. Sun, 2020) states that the TPB was designed for general human behaviour and fails to explain ethical consumer choices because in most cases choices involve broader moral and social norms that may not be fully covered by the original framework of this theory.

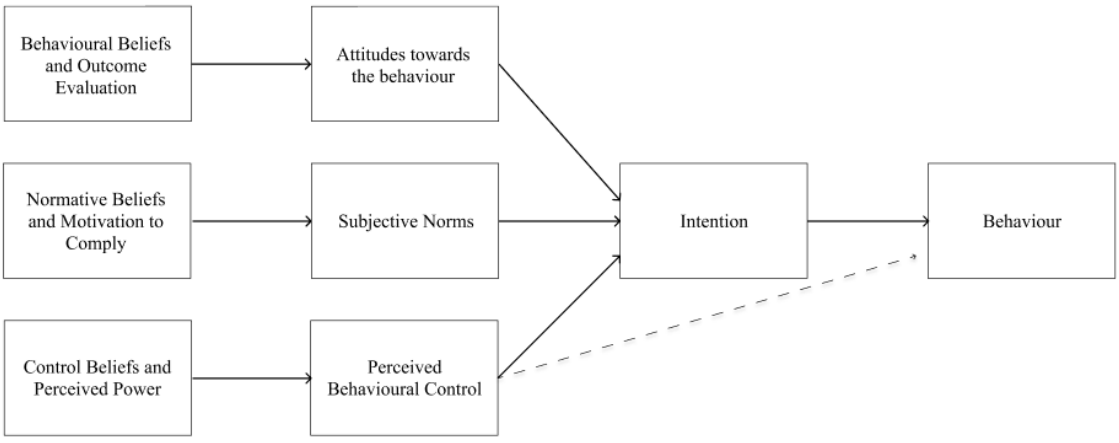



**Figure 2.1|** Theory of Planned Behaviour Framework (Adapted from Ajzen, 1989)

Sometimes, it is important to recognize that, since this theory does not focus on non-volitional control factors, (Teixeira et al., 2022) it must not fully explain human behaviour. Kuo & Young (2008) highlight the need to further explore factors influencing purchase intention for a deeper understanding of consumer choices.

Purchase intention, defined as an individual's plan, commitment or decision to purchase a product, serves as the primary determinant of future behaviour. However, research highlights the need to go beyond intention by considering volitional control mechanisms and actual behaviour. In the context of knowledge sharing, organisations should focus on social and cultural factors that enhance volitional control, ensuring that individuals follow through on their intentions and actively engage in desired behaviours (Kuo & Young, 2008; W. Sun, 2020; Teixeira et al., 2022).

Ajzen (2011) acknowledged that there were some limitations in TPB's predicting power. After realising that a common criticism was that the theory was extremely rational, not accounting for cognitive and affective biases, the author enlarged the theory, in order to integrate affective influences, but standard methodologies often emphasize instrumental over emotional factors.

After several studies, (Bosnjak et al., 2020) found that stronger PBC increases the influence of attitude on intention while weakening the influence of subjective norms, which helps to explain the often-weak direct relationship between SN and intention in TPB studies.

In summary, the Theory of Planned Behaviour has evolved beyond its original framework designated Theory of Reasoned Action (Ajzen, I., & Fishbein, 1980) addressing its limitations by incorporating PCB as a predictor of intention and behaviour. Over-time, some scholars have questioned TPB's prediction power, especially because of its assumption that intention directly leads to behaviour (Burton-Jones & Straub, 2006). Research has highlighted the intention-action gap, emphasising the need to consider volitional control mechanisms and actual behaviour beyond intention (Jasperson et al., 2005).

Ajzen (2011) recognized a major critique that TPB placed too much focus on rational decision-making while overlooking the influence of cognitive and emotional biases. Researchers examined how anticipated regret and emotional influences shape behaviour (Sandberg & Conner, 2008), proving that affect plays an important role when

it comes to belief formation and decision-making (Rapaport & Orbell, 2000; Richard et al., 1996).

Recent studies expanded TPB's scope and integrated some new factors, demonstrating that group identification and the importance of drinking within a social group significantly influence attitudes and perceived norms, which in turn shape intentions (Willis et al., 2020). Barbera & Ajzen (2020), found that higher PBC strengthens the impact of attitudes on intention while weakening the influence of subjective norms, explaining why SN often shows weaker predictive power in TPB research.

The Theory of Planned Behaviour (TPB) is widely utilized to forecast consumer intentions and actions across various domains, and it has shown strong effectiveness in clarifying environmentally sustainable behaviours (Armitage & Conner, 2001; Kautonen et al., 2015; Muhammed et al., 2021). Therefore, this theory has also been used to predict and understand consumer's green purchase intentions and behaviour.

Studies have proven that consumers change their perceptions and intentions of purchase due to external factors of the product, such as, packaging, shipment, reviews(Alaeddin Mohammad K & Qais Mohammad K, 2015; Mani et al., 2023) etc. . In addition, research also highlights that the great majority of environmental problems are increased and enhanced by consumers purchase behaviour (Han, 2021). Hence, it is crucial to comprehend what motivates and leads consumers to choose greener products over unsustainable ones, and consequently for companies to define and implement strategies to reach higher percentages of green consumers.

### *2.2.2. Attitude Towards Green Products*

Sustainability influences consumer buying decisions and, comprehending the connection between attitudes and behaviour is crucial for forecasting consumer preferences (Riskos et al., 2021) . Thus, marketing frequently aims to understand consumer attitudes in order to better forecast their behaviour and, in turn, influence those attitudes to drive desired actions, such as improving green consumption (Liao et al., 2020).

According to (Albarracin & Shavitt, 2018), attitude can be defined as an individual's evaluative judgement of an object, person or abstract idea, characterised by favour or disfavour. Attitudes are a matter of study across multiple disciplines, including

marketing, political behaviour, or even health, and can be measured explicitly through self-reports or implicitly through spontaneous responses.

The concept of ATT was first introduced by Allport (1935), considering that it is a fundamental concept in social psychology, reflecting an individual's tendency or evaluative outlook toward objects, people, and ideas. They are influenced by both genetic factors and environmental experiences, blending aspects of instinct and habit in different degrees.

Ajzen (1991), with the Theory of Planned Behaviour defends that there are three main factors influencing one's behaviour, with them being attitudes, subjective norms and perceived behaviour control. With ATT being the first factor influencing consumer behaviour, it reflects an individual's positive or negative disposition towards performing a particular behaviour, which influences the likelihood of engaging in that behaviour.

Attitudes are formed on the basis of two factors: Behavioural Beliefs (BB) and Outcome Evaluation (OE). Behavioural Beliefs can be recognised as the perceived likelihood that performing a certain behaviour will lead to certain outcomes. Whereas Outcome Evaluation refers to the subjective value or importance that an individual attaches to these expected outcomes, whether they consider them desirable or undesirable (Ajzen, 1991). In the context of the TPB, attitudes, which are shaped by behavioural beliefs and outcome evaluations, contribute to the formation of behavioural intention, which ultimately influences actual behaviour.

The TPB shows that a person's attitude towards a behaviour is influenced by their beliefs about its possible outcomes and the importance they attach to those outcomes. The more favourable an attitude is, the more likely it is to increase the likelihood of forming an intention to engage in the behaviour and ultimately performing it, while a less favourable attitude reduces this likelihood (Fishbein & Ajzen, 1975). A consumer's attitude toward buying an eco-friendly product is shaped by their perception of the environmental impact of their choices.

In the context of green purchasing, consumers who perceive environmental benefits from their purchases are more likely to develop favourable attitudes towards sustainable products, which in turn strengthens their purchase intention (Leclercq-Machado et al., 2022). This intention is crucial because it directly influences actual behaviour. Therefore, attitudes towards green purchasing directly influence intentions to

purchase green goods, which in turn influence the likelihood of engaging in this behaviour (Lavuri, 2022; Nguyen et al., 2016; A. Sharma & Foropon, 2019). It was suggested by Ajzen (1991), that when the three main factors of TPB are stronger, the intention to perform a specific behaviour becomes more pronounced.

Nguyen et al. (2016) defend that the distinction between general and specific attitudes is crucial when studying purchase intentions. This article also states that an individual may support sustainability in general, but this does not mean that this individual will choose sustainable cosmetics over traditional ones, unless he has positive specific attitudes towards these products. While general environmental attitudes provide a broad foundation, specific attitudes toward a particular product are more effective in predicting actual purchase behaviour (Carmi et al., 2015; Geiger et al., 2019).

In summary, attitude as an integral part of the TPB has been extensively studied all over the years since 1991, when Ajzen first developed the theory. It has therefore been recognised that attitudes have a positive impact on people's intention to buy green products (Paul et al., 2016). TPB has been frequently applied in a variety of contexts, including research and entrepreneurship, and has demonstrated consistent empirical support, and hence reinforcing this acceptance (Tseng et al., 2022). As a result, the following hypotheses are suggested:

**Hypothesis 1.** Behavioural Beliefs and Outcome Evaluation have a positive effect on attitude toward purchasing green cosmetics.

**Hypothesis 4.** Attitude toward purchasing green cosmetics has a positive impact on purchase intention.

Therefore, the hypotheses mentioned above are related to intention, which will be discussed later in topic 2.2.5. The relationship between the hypotheses and the variables studied is shown in the next figure 2.

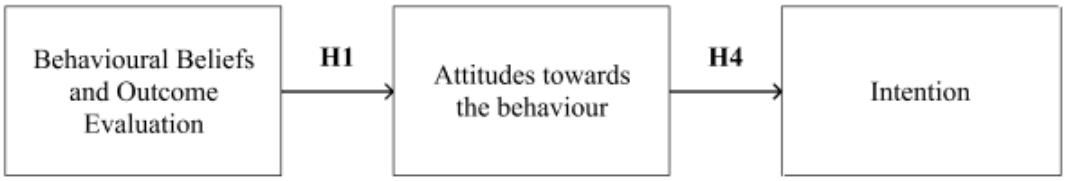



**Figure 2.2|** Proposed Hypotheses addressing Attitudes towards Green Cosmetic Products

### *2.2.3. Subjective Norm*

Subjective Norm is one of the three main components of the TPB, portraying the second variable that influences intention. This determinant of the theory refers to the perceived social pressure that an individual feels in order to perform or not perform a specific behaviour (Ajzen, 1991). SN is shaped by an individual's beliefs about how other (e.g., family, friends, colleagues, society) expect them to act in a given situation. If an individual believes that a significant others want them to engage in a determined behaviour, they increase their likely to form the intention to perform that behaviour (Barbera & Ajzen, 2020; Ham et al., 2015).

In essence, subjective norms are formed by a conjunction of two components: Normative Beliefs (NB); and Motivation to Comply (MC). The first one must be described as an individual's perception of the expectations others have regarding their behaviour. Secondly, motivation to comply is comprehended as the degree to which an individual wants to meet these expectations (Ajzen, 1991).

The performance of subjective norms changes across different contexts, as some behaviours may be more socially driven than others (Ajzen, I., & Fishbein, 1980). This model argues that when individuals perceive that someone is expecting them to react in a specific way in a determined situation, the higher is the likelihood of them to be motivated to comply with those expectations.

Moreover, Y. Sun & Xing (2022) argue that subjective norms play an important role in influencing the purchase of green products by exerting social pressure on consumers. In addition, it also suggests that purchasing decisions are not solely driven by individual needs but also by social influences, such as the desire to maintain relationships, achieve social status, and conform to group values.

Furthermore, consumers tend to adopt environmentally friendly purchasing habits when they perceive social endorsement or feel moral pressure from their community (Xu et al., 2022). Overall, subjective norms play a critical role in shaping green purchase intentions, as defended by many authors (Y. Sun & Xing, 2022; Xu et al., 2022; Zhuang et al., 2021). Therefore, it is hypothesized that:

**Hypothesis 2.** Normative Beliefs and Motivation to Comply have a positive effect on subjective norms regarding green cosmetics.

**Hypothesis 5.** Subjective norms have a positive effect on purchase intention for green cosmetics.

The hypotheses mentioned above are related to intention, which will be discussed later in topic 2.2.5. The relationship between the hypotheses and the variables studied is shown in the next figure 3.

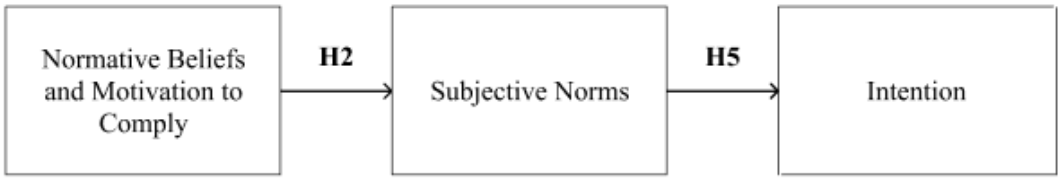



**Figure 2.3**| Proposed hypotheses addressing Subjective Norms towards Green Cosmetic Products

### *2.2.4. Perceived Behaviour Control*

The concept of Perceived Behaviour Control is complex. According to Ajzen (1991), it refers to an individual's perception of how easy or difficult it is to perform a particular behaviour. PBC also depends on both internal factors (e.g., skills, self-confidence), and external factors (e.g., resources, barriers) (Kiriakidis, 2017).

Besides, PBC becomes particularly important when behaviour is not fully under volitional control, as it is only partially controlled by external factors, meaning that individuals may want to act in a certain way but face constraints and barriers (Paul et al., 2016). The perceived ease or difficulty to perform in a determined way is influenced by both past experiences and anticipated obstacles (Ajzen, 1991). It is also highlighted by Paul et al. (2016) that the role of non-motivational factors such as resources, opportunities, facilitators and action control, reinforcing the idea that PBC matters the most when there are external barriers.

Moreover, this concept is inherently linked to two variables, specifically, self-efficacy, which refers to the individual's belief in his or her ability to perform a behaviour, and the presence of barriers (Ajzen, 2002), although it is also important to note that can exist punctual limitations (Sparks et al., 1997).This author also states that perceived difficulty, reflecting external constraints, was a significant predictor of behavioural intentions, whereas perceived control was more predictive of actual behaviour.

In 1975, when Fishbein & Ajzen developed the Theory of Reasoned Action, PBC was not part of the original model proposed. To overcome some limitations that arose after the first approach to the theory, a second theory (TPB) was developed (Ajzen, 1991). When an individual has full control over their behaviour, PBC does not provide a significant advantage in predicting behaviour. However, in situations where an individual faces obstacles and limitations regarding their ability to perform a certain behaviour, this variable becomes a valuable factor in predicting their behaviour (Armitage & Conner, 2001).

Perceived Behaviour Control is formed on the basis of two variables: Control Beliefs (CB), which can be described as an individual's beliefs about the existence of factors that can facilitate or inhibit their ability to perform a behaviour; and Perceived Power (PP), which is the extent to which an individual perceives these factors as influential in enabling or constraining behaviour, which determines the strength of each control belief (Ajzen, 1991). When someone recognises the existence of barriers (CB), their perception of how these barriers affect their ability to act (PP), will ultimately define the strength of PBC.

This variable can be studied in two dimensions: internal PBC and external PBC. These two components of PBC can aid in the analysis and understanding of how an individual perceives their ability to perform a certain behaviour (Ajzen, 1991), particularly in the context of environmental awareness and purchasing decisions regarding green cosmetics. The internal dimension of PBC is closely related to self-efficacy, including skills and knowledge (e.g., knowing how to select green cosmetics), confidence, and adequate planning (Armitage & Conner, 1999; Bong Ko & Jin, 2017). Following, the external dimension is dependent on external resources and may present some barriers, such as financial constraints, time limitations and even product scarcity (e.g., whether or not a green cosmetic product is available in mainstream stores) (Bong Ko & Jin, 2017).

In the context of green purchasing, PBC mediates consumer behaviour by addressing situational constraints, including economic costs, access to product information, product availability, and ease of use (K. Chen & Deng, 2016). These factors determine the perceived difficulty or ease of adopting sustainable consumption patterns. As the TPB suggests, when individuals feel more in control of these external and internal barriers, they are more likely to purchase green products. Consequently, strengthening

PBC by improving the accessibility, affordability and awareness of sustainable products can significantly increase green purchasing intentions and actual behaviour (K. Chen & Deng, 2016; Nekmahmud, Naz, et al., 2022; Zhuang et al., 2021).In light of the above, the following hypotheses are suggested:

**Hypothesis 3.** Control beliefs and Perceived Power have a positive effect on perceived behavioural control over purchasing green cosmetics.

**Hypothesis 6.** Perceived Behavioural Control has a positive effect on the purchase intention for green cosmetics.

The hypotheses mentioned above are related to intention, which will be discussed later in topic 2.2.5. The relationship between the hypotheses and the variables studied is shown in the next figure 4.

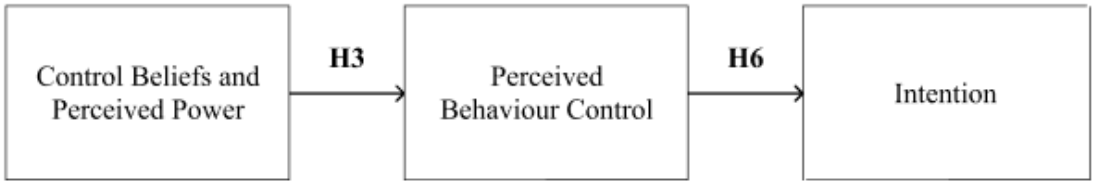



**Figure 2.4|** Proposed hypotheses addressing Perceived Behaviour Control towards Green Cosmetic Products

### *2.2.5. Intention*

Intention is a central construct in the Theory of Planned Behaviour, playing a key role in predicting behaviour. Intention depends on a set of three factors previously mentioned: attitude, subjective norms, and perceived behavioural control (Ajzen, 2011; Armitage & Conner, 2001). The significance of the three elements should change depending on the type of behaviour being anticipated and the circumstances in which the behaviour is to occur (Ajzen, I., & Fishbein, 1980).

According to Ajzen (2020) positive attitude combined with a strong subjective norm develops a greater motivation to act in a certain way. However, it is essential to understand that a concrete intention is only reliable when the perception of behavioural control is strong enough to prevail.

Moreover, intention is related with the likelihood of performing a behaviour in the future, shaped by motivational factors that drive individual's effort toward that behaviour (Ajzen, 1991; Ha et al., 2019). Additionally, this variable indicates how determined a person is to engage in a specific action and how much effort they are willing to put in (Ha et al., 2019).

However, some scholars argue that intention as a variable in the TPB has certain limitations. Although it serves as a strong predictor of behaviour, some studies have shown that there is a gap between intention and action due to external constraints (Sheeran, 2002). In addition, (Sniehotta et al., 2014) presents a criticism of the TPB due to its reliance on conscious decision-making, disregarding factors that strongly influence this process, such as personal habits, emotions, and unconscious actions. These factors limit the applicability of this theory, as it does not account for spontaneous acts or actions based on past experiences.

Ajzen (1991), acknowledges that since intention is a reflection of motivational disposition, the lower the perceived behavioural control, the weaker the predictive power of the model. This is because individuals often attempt to act on their intentions but ultimately fail due to a lack of control over resources and opportunities.

Thus, intention serves as a crucial predictor of green purchasing behaviour. It is shaped by consumers' attitudes towards the environmental benefits of the product, perceived social pressure and perceived control over the decision, which further influence their overall willingness to engage in sustainable consumption (Fraccascia et al., 2023; L. Zhang et al., 2019). In addition, multiple studies have shown that the TPB can be applied to a vast variety of green products, demonstrating its strength and effectiveness in measuring green purchase intention (M. T. Liu et al., 2020; Sreen et al., 2018; Yadav & Pathak, 2017).

Generally, researchers defend that there is a positive correlation between intention and behaviour (Ajzen, I., & Fishbein, 1980; Sheeran, 2002; Yadav & Pathak, 2017). These findings support the fundamental behavioural theory that intention is the most direct predictor of behaviour (Ajzen, I., & Fishbein, 1980). As a result, the following is hypothesized:

**Hypothesis 9.** Perceived value has a positive effect on the purchase intention for green cosmetics.

The hypothesis mentioned above is related to behaviour, which will be discussed later in topic 2.2.9. The relationship between the hypothesis and the variables studied is shown in the next figure 5.

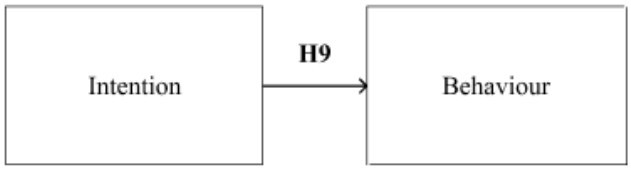



**Figure 2.5|** Hypothesis concerning the Intention construct

### *2.2.6. Integration of Constructs within the TPB*

Despite the age of the TPB, several authors argue that it remains a highly effective theory that has neither become obsolete nor ceased to evolve (Armitage & Conner, 2001; Bosnjak et al., 2020). In the same vein, various authors assert that adding new variables, depending on the subject under study, increases the effectiveness of the model and improves its predictive power (Armitage & Conner, 2001; Paul et al., 2016; Yadav & Pathak, 2017).

Ajzen (1991), does not advocate that adding new variables should be mandatory in all cases, but it does state that the effectiveness of TPB can be enhanced by adding new constructs, since these variables are specific to the context under study and have a direct impact on intention and behaviour. The author also defends that the introduction of new variables must be oriented by theoretical understanding and empirical evidence. Although it may be beneficial to add new variables to a particular study, it is important to understand that this does not mean that it should be done in all studies (Armitage & Conner, 1999; Si et al., 2019).

Therefore, for the purpose of this study, two new variables will be introduced in order to conduct a more concrete analysis of consumer purchasing behaviour regarding green cosmetics. Hence, the new variables in study will be Perceived Value (PV) and Willingness to Pay Premium (WPP), which will be examined alongside the constructs already incorporated into the TPB.

Willingness to Pay Premium captures the consumer's readiness to incur a higher cost for the perceived benefits. This variable is particularly relevant for green cosmetics, as such products often come with a higher price tag due to sustainable sourcing and production practices (Yadav & Pathak, 2017).

Additionally, Perceived value reflects the consumer's assessment of the benefits they receive from a product relative to its cost, which plays a central role in shaping attitudes and intentions. In the context of green cosmetics, consumers may place a higher value on environmentally friendly products, taking into account the ethical and health benefits they offer (Ahmed et al., 2023; Y. S. Chen & Chang, 2012). On the other hand, consumers may not be willing to exchange a product they consider to be of good quality and beneficial for their intended purposes in favour of achieving environmental protection. Marketing, thus, plays a crucial role in understanding how consumers perceive the value of green products (Ahmed et al., 2023; Li et al., 2021).

In summary, by including both perceived value and willingness to pay a premium, researchers can better understand the factors that influence consumer decisions, particularly in a market where price sensitivity can influence green purchasing behaviour (Ahmed et al., 2023; Shi & Jiang, 2023; Yadav & Pathak, 2017). The modified TPB model that is being proposed is described and clarified in section 2.2.10.

### *2.2.7. Supporting the Inclusion of Willingness to Pay Premium: Theoretical and Empirical Evidence*

Understanding Willingness to Pay Premium is crucial for businesses and policymakers aiming to promote green products (Shi & Jiang, 2023). Price is one of the most critical factors in the decision-making process when purchasing a product. Often, price acts as a barrier to green products at the time of purchase, as they tend to have higher prices. (Cakici & Tekeli, 2022).

The higher price of green products is often due to the costs associated with their production and marketing, ranging from the use of sustainable materials to the manufacturing and testing processes, as well as the certification required for their sale (Wilken et al., 2024).

Although green products have higher prices at the time of purchase, resulting in a higher short-term cost, when compared in the long term, most green products have lower costs (Wee et al., 2011). Thus, there is a misperception of the price when acquiring a new green product, creating a conflict between the short and the long term, leading to less environmentally favourable decision-making (L. Wu et al., 2017).

In addition, gaining a deeper understanding of consumers' willingness to pay premium for eco-friendly products would be valuable, from the perspective of

organisations, for refining their market strategies (Griskevicius et al., 2010; Machová et al., 2022).

Willingness To Pay (WTP) refers to the maximum amount a consumer is prepared to spend to acquire a specific product or service (Khan et al., 2024). This concept is crucial for understanding consumer behaviour, especially regarding green consumption, where the willingness to pay a premium for eco-friendly products determines the adoption of sustainable practices. Additionally, it has a substantial impact on pricing strategies, cost-benefit assessments, and policy decisions, as this factor shapes consumer choices in sustainability-related matters (Biswas, 2016).

Furthermore, considering that producing a green product incurs additional costs, such as ecological partnerships (e.g., the use of renewable energy, recyclable packaging, etc.), it is crucial to consider and evaluate WTP in the purchase decision process, as it represents one of the final factors to be taken into account before the final decision is made (Elliott, 2013).

According to Gregory-Smith et al. (2017), evaluating the willingness to pay for green products provides a more precise reflection of individuals' commitment to environmental sustainability, rather than relying solely on self-reported behaviour and broad intentions. WTP more for a green product depends on the perception of the individual who purchases it, based on their belief that environmental degradation can be tackled while acquiring products that provide the desired benefits, ultimately leading to the choice of products that are less harmful to the environment (Yang et al., 2021).

Next, there are several authors that highlight that high prices are the main reason why consumers abandon the idea of purchasing green products (F. Liu & Madni, 2024). Although the price constitutes a limitation, many consumers claim to be willing to pay a small premium amount to acquire a new green product. However, it is important to note that the relationship between price and consumer willingness is inversely proportional, that is, the higher the price, the lower the willingness to pay for the product, and vice-versa (Kucher et al., 2019). It is also important to mention that consumers' willingness depends on the specific green product in question and their desire to purchase it, which is based on their personal perceptions and the perceived benefits (A. Sharma & Joshi, 2017).

Subsequently, considering that adopting a more sustainable lifestyle requires consistency and the incorporation of new daily habits, it is crucial to understand that this

is not a quick process. Often, even consumers with green attitudes admit facing difficulties in implementing green consumerism, revealing that they do not always feel enthusiastic when choosing to purchase a green product (Berger, 2019).

Following, the literature highlights that there is a significant difference in the Willingness to Pay (WTP) of consumers from different countries to pay a higher price for a green product. According to Kucher et al. (2019), seventy percent of consumers in the US and in the majority of Europe are willing to pay up to a 5 percent premium price for environmentally friendly products, if proven that these products are as good as the conventional alternatives. Notwithstanding, when it comes to Spanish consumers, they demonstrated a willingness to pay a premium price ranging between 22 to 37 percent for environmentally friendly food products (Wei et al., 2018).

When it comes to Portuguese consumers, some studies argue that while they are aware of the current environmental challenges, their purchasing behaviour do not reflect a commitment to sustainable buying habits (Lopes et al., 2024; Nogueira et al., 2023). A group of consumers has nevertheless been identified whose purchase behaviours align with their green consumption ideals, making them willing to base their purchasing decisions based on the environmental benefits of the product (Finisterra do Paço & Raposo, 2010).

It is important to acknowledge that the price of a product only becomes a limitation if consumers are unwilling to accept an increase in the price of green products (Moser, 2015). According to J. Wang et al. (2020), the more price-sensitive consumers are, the less committed they tend to be to the environmental risk we face. Additionally, more committed in green consumption consumers are open to compromising between environmental benefits and increased costs (Moser, 2015). Indeed, existing clearly show that environmental concerns influence consumers' purchase behaviour. Some authors have found a positive link between environmental concern and the willingness to pay more for eco-friendly products (Kamalanon et al., 2022; L. Zhang et al., 2019).

Consumers are increasingly recognising that they have the power to change the environmental course of our planet through their everyday decisions, especially by making responsible purchasing choices. Evidence of this recognition is the increase in the number of consumers willing to spend a little more on a green product, as well as the rise in the number of green products sold and the demand for them (Berki-Kiss & Menrad, 2022). Therefore, according to the literature, this variable was found to be a key predictor

of green purchasing and was subsequently incorporated into the original model. As a result, the following hypothesis is suggested:

**Hypothesis 7.** Willingness to pay a premium has a positive effect on purchase intention for green cosmetics.

The hypothesis mentioned above is related to behaviour, which will be discussed later in topic 2.2.5. The relationship between the hypothesis and the variables studied is shown in the next figure 6.

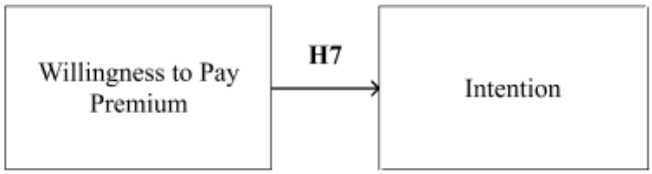



**Figure 2.6|** Proposed hypotheses addressing Willingness to Pay Premium towards Green Cosmetic Products

### *2.2.8. Supporting the Inclusion of Perceived Value: Theoretical and Empirical Evidence*

Developed for Zeithaml (1988), the concept of Perceived Value has been widely studied in academic research. Perceived Value can be understood has the consumer's general evaluation of a product or service's usefulness, considering the balance between the gained and the sacrifices involved. This concept is inherently consumer-centric, since different consumers may evaluate value differently based on their needs, preferences and experiences (Blut et al., 2023; Ruiz-Molina & Gil-Saura, 2008).

Perceived Value is crucial in order to understand consumer behaviour since it directly influences purchase decisions, brand preference, satisfaction, and loyalty (Ruiz-Molina & Gil-Saura, 2008). Consumers tend to choose the product or service that, according to their perception, offers the greatest value, making this concept essential for businesses seeking to enhance costumer engagement. Understanding perceived value is highly important to explain why consumers may prefer one brand over another, how they justify higher prices for premium products, and what factors drive their decision-making processes (C. Wang et al., 2023; N. Zhang et al., 2021).

Additionally, this concept as proven to be a fundamental factor in long-term relationships between costumers and brands, actively influencing the intention to acquire a specific product (Petravičiūtė et al., 2021). The connection between perceived value and purchase intention is a reflection of the benefits a consumer associates with a product, and the perceived costs of acquiring it. The sacrifices of acquiring a new product does not necessarily have to be monetary (Wong et al., 2020).

Furthermore, it is very important to recognize that nowadays consumers are more sensitive to environmental issues, and as a result, they place great value on companies that adopt and promote social and ethical measures (Forbes, 2025; Lubowiecki-Vikuk et al., 2021). Thus, when making a purchase decision, consumers highly consider the environmental practices of companies, with consumers increasingly willing to pay an extra price in exchange for acquiring greener products (Gomes et al., 2023; Grimmer & Bingham, 2013). By embracing friendly practices, companies can enhance their reputation among consumers while also giving them a sense of contribution when acquiring green products.

Next, regarding green products, perceived value plays a fundamental role in consumer behaviour. Since sustainability often entails certain consequences for the product (e.g., higher prices, eco-packaging, ethical sourcing, etc), at the moment of purchase, consumers assess whether the necessary trade-offs justify the acquisition of the product based on their individual perceptions of its value to them (De Medeiros et al., 2016; Granato et al., 2022).

Yet it is crucial to recognize that many organizations promote their own products by disseminating misleading information about their sustainable value. This action can lead consumers to lose trust in green products, feel deceived, and become reluctant to purchase them(Y. S. Chen & Chang, 2013; Y. Sun & Shi, 2022). As a result of these actions, consumers often feel that they are not receiving the expected benefits of the product in relation to the price they paid for it. For these very reasons, it is increasingly crucial for companies to invest in green marketing to enhance the perceived value of the products while simultaneously reducing perceived risk (Y. S. Chen & Chang, 2013; Wasaya et al., 2021).

Moreover, Perceived Value can be divided into different components, making it essential for companies to study these various dimensions and, consequently, develop tailored strategies for each one (Itani et al., 2019; Sweeney & Soutar, 2001).

Organizations should also analyse circumstances in which value emerges for consumers, leveraging this knowledge to fully explore the most suitable market based on consumer perceptions (Sweeney & Soutar, 2001). In summary, perceived value goes beyond the benefits delivered by the product, as it is a combination of experiences, expectations, and each consumer's individual perception in relation to the product's monetary cost. Therefore, perceived value depends not only on tangible factors (e.g. price, design, quality), but also on intangible factors (e.g. emotional value, reputation, experience) (Ding & Keh, 2017; Mason et al., 2023; N. Zhang et al., 2021).

Considering the context of green products and the increasing consumer awareness of the importance of contributing to environmental preservation, green perceived value has emerged. This concept refers to consumer's overall perception of the benefits provided by green products in comparison to the costs associated with their acquisition (Lin et al., 2017; T. Roh et al., 2022). Through green perceived value, consumers make their value judgement by assessing whether green products surpass conventional products in terms of performance, and subsequently evaluating whether the benefits justify the additional costs associated (ElHaffar et al., 2023). Next, consumers assess the emotional satisfaction provided by the product, as well as the prestige and social acceptance it may be associated with. Finally, they also deliberate whether the product truly offers environmental benefits that justify its purchase (Lin et al., 2017).

Although consumer interest in adopting sustainable practices on a daily basis is already evident, some studies reveal that most consumers perceive the performance of green products to be inferior to that of conventional products (Möller & Herm, 2021). The fact that consumers think this way is due to various factors. Some examples of elements that create discomfort among consumers include the use of recycled materials in many green products and the perception that they have a lower technical performance when compared to conventional products (e.g., solid shampoo) (Polyportis et al., 2022).

Even though they are more aware of green consumption, consumers are not willing to sacrifice certain product characteristics they consider important, such as quality, availability, price, and performance, in favour of green attributes (Marcon et al., 2022). Thus, consumers do not choose to purchase a green product solely because it has green attributes, becoming essential that it also provides other additional benefits (Barbu et al., 2022; X. Zhang & Dong, 2020). Perceived value increasingly plays a fundamental role in consumers' purchasing decisions. A negative perceived value leads to a loss of

consumers' interest in purchasing the product, making it essential for companies to foster value creation as one of their main objectives (C. Wang et al., 2023; X. Yang, 2022; N. Zhang et al., 2021).

Diverse studies confirm that the perceived value of a particular product or service is directly linked to consumers' purchase intention. Therefore, it is understood that the higher or more positive a consumers' evaluation of a product, the greater likelihood of acquiring it (Y. Wu & Huang, 2023; N. Zhang et al., 2021).

**Hypothesis 8.** Perceived Value has a positive effect on actual purchasing behaviour of green cosmetics.

The hypothesis mentioned above is related to behaviour, which will be discussed later in topic 2.2.5. The relationship between the hypothesis and the variables studied is shown in the next figure 7.

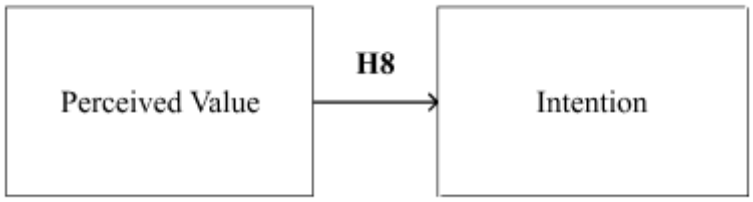



**Figure 2.7**| Proposed hypotheses addressing Perceived Value towards Green Cosmetic Products

### *2.2.9. Green Purchase Behaviour*

Over the past few years environmental concerns have been increasing significantly due to consumer behaviour, as people are becoming more consumerist, leading to excessive consumption of natural resources and, consequently, environmental degradation (Correia et al., 2023).

This behaviour among consumers has increasingly generated environmental awareness, particularly due to rising pollution and the unsustainable use of natural resources. As consumers recognize this environmental issue, there is a growing concern about acting more sustainably and adopting consumption habits that positively contribute to the environment (Luchs et al., 2015; Thøgersen, 2014).

Green Purchase Behaviour (GPB) can be understood as the act of acquiring a product that is environmentally friendly, reducing its environmental impact throughout

its life cycle (Witek & Kuźniar, 2021), in the diverse ways associated with green consumption (e.g., sustainable production, energy efficiency, low environmental impact) (Correia et al., 2023).

According to K. Sharma et al. (2023), consumers exhibiting green purchase behaviour are influenced by a variety of factors such as health concerns, environmental protection, social norms, and personal beliefs. These factors push consumers to prefer products that are produced using eco-friendly methods, ensuring sustainability for future generations. This author also states that the development of green purchasing behaviour is also driven by evolving consumer trends and social pressures, with younger consumers in particular becoming more aware of the importance of sustainable consumption choices.

Overall, green purchase behaviour encompasses a consumer's conscious decision to prioritize environmental sustainability by selecting products that minimize harm to the environment and society (Witek & Kuźniar, 2021); however, actual behaviour may not always reflect these intentions due to various barriers and inconsistencies (K. Sharma et al., 2023).

Various models have been employed in consumer behaviour research, including the Theory of Reasoned Action, which posits that consumer behaviour is influenced by intentions, shaped by attitudes and subjective norms (Fishbein & Ajzen, 1975). The Theory of Planned Behaviour (Ajzen, I., & Fishbein, 1980) introduced the concept of perceived behavioural control. These foundational models have been extensively utilized by numerous scholars, either in their original form or with adaptations, to assess the purchase intention and actual purchasing behaviour of green products (Kumar et al., 2023; S. W. Wu & Chiang, 2023).

### *2.2.10. Theoretical Model and Hypothesis Visualization*

According to the variables and constructs presented so far, the following model will support the visualization of the theory. The image below illustrates the variables under study, the proposed hypothesis, and how they are interconnected.

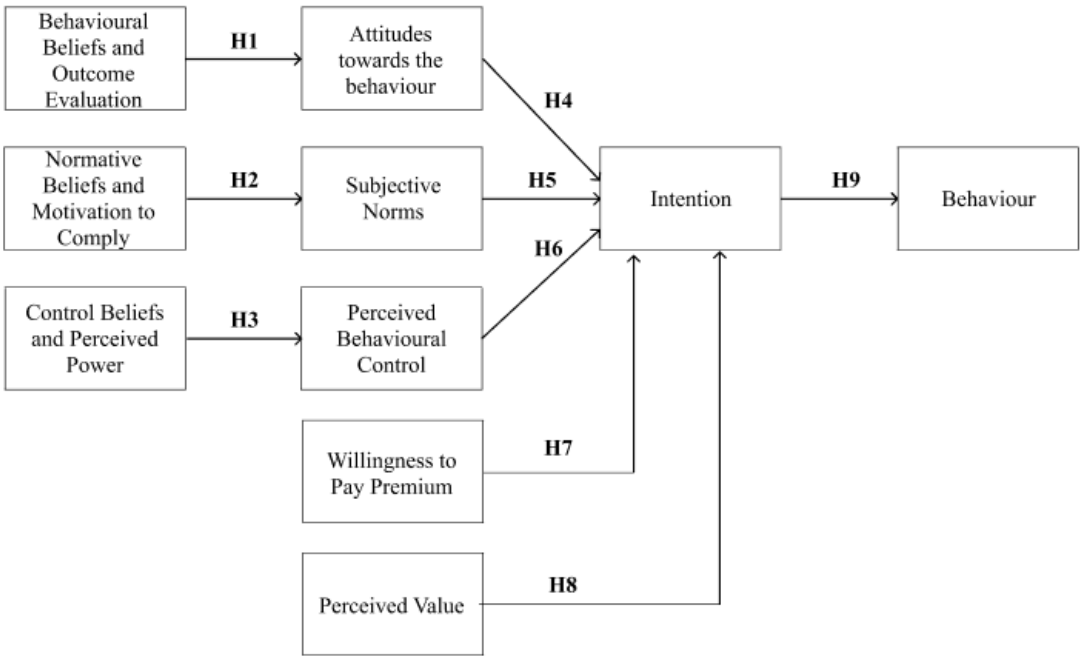



**Figure 2.8**| Theoretical model underpinning the present research (based on Yadav & Pathak, 2017)

CHAPTER 3

# Methodology

## 3.1. Target Population

In order to carry out this study, a group of Portuguese adults aged 18 or older was surveyed. This study addresses topics with a high degree of complexity, particularly regarding green consumption, sustainability, and the consequences of consumption choices. The consumer decision-making process is influenced by socio-psychological stimuli and includes facilitators and inhibitors that affect consumer behaviour regarding sustainable cosmetics. This approach suggests that there is a need to analyse the topic with maturity and depth, considering its complexity and the level of reflection and discernment required to understand and evaluate these topics (Testa et al., 2024). This justifies the decision to include only individuals aged 18 or older.

Testa et al. (2024) recognizes that the most common demographic characteristics of green cosmetics consumers are individuals with higher levels of education and income, since these factors help individuals to better comprehend the subjects and matters of study and consequently responding in a more accurate way than less educated people.

## 3.2. Data Collection

The accuracy of research findings depends largely on the data collection process, making it a crucial component of any study. When conducting a study, there is a wide range of research of data collection methods that can be used as a guideline and procedure for its development (Sekaran Uma; Bougie Roger, 2016).

The choice of method should depend on the study's main scope and on the needs that arise from it, in order to obtain the most accurate results possible, making the study more reliable (Karunarathna et al., 2024; Y. Roh et al., 2021). Therefore, keeping in mind that this study aims to examine and relate variables that are influenced by cause-effect relationships, a common approach will be used.

The data collection can be divided into primary and secondary data collection, each serving different purposes and using different methodologies (Creswell & David Creswell, 2018; Saunders et al., 2019). Primary data will be used, and it refers to original, firsthand information gathered directly from sources for a specific research objective (e.g., questionnaires, interviews, focus groups) (Saunders et al., 2019).

Therefore, for the elaboration of this study, a survey was developed as a tool to collect the needed information, as it provides anonym answers. This approach is typically associated with obtaining reliable facts, enabling the collection of the most accurate data (Saunders et al., 2019).

The main objective of this thesis is to study and understand the purchasing behaviours of Portuguese consumers regarding green cosmetic products and the variables that may influence their behaviour. Thus, the data collect from the developed survey will support the model outlined in Figure 8, and subsequently test the hypotheses formulated throughout Chapter 2.

## 3.3. Survey Pre-test

For the validation of the questionnaire developed to support the study proposed in this thesis, a test was conducted, with the main goal of analyse and understand the factors that positively and negatively influence consumer purchase behaviour towards green cosmetic products. Therefore, for this pre-test, a small sample of Portuguese consumers of different age groups and varying levels of education were inquired, in order to ensure the elimination of any questions that might not be clearly understood.

Following the test, some modifications were made, including the reconstruction of certain questions and the addition of extra ones to ensure there were no doubts among the respondents. Finally, the questionnaire was made available online for all Portuguese consumers who wished to respond.

## 3.4. Questionnaire Development and Design

The development of a questionnaire requires a prior selection of the concepts and hypotheses to be investigated. For this reason, previous studies were consulted to ensure the feasibility of this study, and this questionnaire was adapted from these previous studies (see Appendix 2). Since the study population is made up of Portuguese consumers, the questionnaire was designed in Portuguese, using simple and easy to understand language to ensure that respondents could easily understand the questions and answer them in a practical and straightforward manner (see Appendix 1). Finally, to ensure that all necessary information was obtained, all questions were mandatory.

In order to elaborate this questionnaire, Google Forms was used as a tool, enabling the creation of a questionnaire in Portuguese, in accordance with the language spoken by the respondents (Portuguese consumers). The survey is divided into five sections: Section A corresponds to General Perceptions; Section B examines Environmental Awareness; Section C relates to Hypothesis Development; Section D focuses on the Evaluation of Hypothesis Construction; and finally, Section E gathers Demographic Information. To collect responses, digital platforms such as WhatsApp, Instagram, and Facebook were used, ensuring a direct approach.

### *3.4.1. Benefits of the survey-based methodology*

Survey-based methods are widely used in behavioural research, in order to explore and comprehend attitudes, intention, and decision-making processes, being extremely helpful in areas such as consumer behaviour and green consumerism. By collecting structured data from respondents, surveys provide a quantitative basis for testing theoretical models such as the Theory of Planned Behaviour (TPB) (Podsakoff et al., 2012). Therefore, some advantages of this method are outlined.

I. Flexibility in Data Collection:

Surveys can be answered through diverse modes (e.g., online, phone, in-person), offering flexibility in participant engagement and data collection. This methodological flexibility allows researchers to capture both measurable trends and nuanced perspectives, improving the overall validity and richness of the findings (Bryman, 2016).

II. Direct Hypothesis Testing:

Surveys play a crucial role in testing hypotheses within models such as the Theory of Planned Behaviour by providing empirical data on decision-making processes. They help to validate relationships between key constructs such as attitudes, subjective norms and perceived behavioural control, and provide insights into factors that influence behavioural intentions (Armitage & Conner, 2001).

III. Comprehensive Insights into Consumer Preferences

By combining both closed-ended questions for quantitative analysis and open-ended questions for deeper insights into consumer preferences, this method enhances the

comprehensiveness of the research. It is very important to understand the elements that have an impact on consumers' willingness to pay premium in order to purchase green products (Malhotra & Birks, 2007).

IV. Ease of Statistical Analysis

Surveys facilitate quantitative analysis by enabling the use of statistic tools to test hypotheses and derive actionable insights. Methods such as regression analysis help examine relationships between variables, while factor analysis ensures the validity and reliability of measurement scales, strengthening the foundation of data-driven recommendations (Hair et al., 2021).

### *3.4.2. Limitations of the survey-based methodology*

While survey-based methodologies offer valuable insights and quantitative rigor, they also have several limitations that researchers must consider. Poorly designed surveys can lead to misinterpretation of questions, introducing measurement errors that affect reliability. Finally, surveys often lack the depth of qualitative methods, making it difficult to capture complex motivations and contextual nuances in consumer behaviour (Podsakoff et al., 2003).

I. Response Bias

One of the biggest obstacles of the questionnaire-based methodology is that people are often biased and tend to respond in a way they believe is socially acceptable rather than providing truthful answers (Podsakoff et al., 2003). This tendency can compromise the reliability of the data and affect the validity of the research findings.

II. Low Response

Online surveys often face the challenge of low participation rates, which can impact the representativeness of the sample and the overall reliability of the findings. Factors such as lack of respondent engagement, survey fatigue, and concerns about data privacy may contribute to lower response rates (Manfreda et al., 2008).

III. Misinterpretation of the Questions

One limitation of surveys is the potential for respondents to misunderstand questions, leading to inaccurate answers. Unlike interviews, where participants can ask for clarification if needed, surveys lack real-time interaction, making it difficult to correct misinterpretations. This can lead to measurement errors that affect the reliability and validity of the data collected, highlighting the importance of clear and well-structured survey design (Podsakoff et al., 2003).

IV. Limited Depth

This limitation can be particularly problematic in areas like consumer behaviour, where understanding the emotional and psychological drivers behind decisions is crucial. While surveys are excellent for quantifying general trends, they may fail to explore the "why" behind those trends, which is often where the most valuable insights lie (Bryman, 2016).

## 3.5. Data Analysis

The data collected from the questionnaire were analysed using IBM SPSS version 29.0.2.0 (20). First, invalid responses were removed, as they came from individuals who did not fit the target population, specifically those under the age of 18. Once the dataset was cleaned and prepared, an initial analysis was conducted to better understand the socio-demographic characteristics of the participants. Subsequently, several analyses were carried out for each construct.

## 3.6. Measures

### *3.6.1. Belief Constructs*

It is common practice, when analysing belief constructs, to develop items through an elicitation study alongside a literature review. According to the authors who developed the TPB (Ajzen, I., & Fishbein, 1980), an elicitation method should be chosen that clearly identifies beliefs and their referents, especially when studying a new context or population. Despite this, instead of creating new items to analyse and measure perceptions and referents, this study will apply the items on which this thesis is founded, namely the items from Yadav & Pathak (2017).

The model developed by Yadav & Pathak (2017) is based on the TPB and is essentially an adaptation of the original model. The decision to use the model developed by these authors is due to the fact that their study has a similar objective to this thesis, as both seek to investigate and understand consumer behaviour regarding green products. Therefore, the use of the same items in both studies is justified as they meet the needs of the present research.

Since the model developed by Yadav & Pathak (2017) has already been proven to be highly effective, this study will aim to follow it as closely as possible in order to assess its predictive power, as well as its versatility. The items used to measure beliefs constructs can be found in Appendix 3.

#### *3.6.1.1. Behavioural Beliefs*

For the formulation of hypotheses related to behavioural beliefs, a 5-point Likert scale was used (Strongly Disagree (1)/ Strongly Agree (5)). Even though this study follows the model used by Yadav & Pathak (2017), in which is used a 7-point Likert scale, during the development of the questionnaire, using a scale of only five points proved to be more practical, making the response process easier and more intuitive for respondents.

Additionally, after some research, it became clear that 5-point Likert scales offer several advantages. Consequently, various authors argue that this scale is most suitable, as it is less overwhelming for respondents, increasing their willingness to participate. This, in turn, leads to a higher number of responses and improve response quality (Aybek & Toraman, 2022). The five statement are as listed below.

The decision of buying a green cosmetic product would help me to:

**BB1-** To start adopting sustainable habits in daily life.

**BB2-** To be a more responsible citizen.

**BB3-** To protect the environment.

**BB4-** To live in a better society and a less polluted environment.

**BB5-** To contribute to the reduction of natural resources waste.

#### *3.6.1.2. Outcome Evaluations*

Following, for the outcome evaluation, the 5-point Likert scale was used again (Not Important at All (1)/ Highly Important (5)). This scale was chosen once more to ensure consistency throughout the study. Therefore, 5 items were used to evaluate the Outcome Evaluation, which are mentioned below.

**OE1-** To me, having more sustainable consumption habits is

**OE2-** To me, being a more responsible citizen is

**OE3-** To me, contributing to protect the environment is

**OE4-** To me, staying in a cleaner society and a less polluted environment is

**OE5-** To me reducing the waste of natural resources is

The outcomes were recoded using SPSS as a tool, in order to follow the Theory of Planned Behaviour and Ajzen & Fishbein's proposal (see Appendix 4).

#### *3.6.1.3. Normative Beliefs*

Next, the normative beliefs are presented, consisting of 3 items, one for each reference, and once again using a 5-point Likert scale (Strongly Disagree (1)/ Strongly Agree (5)). The items are listed below.

When opting for a green cosmetic product instead of a conventional non sustainable product I feel like:

**NB1-** My family thinks that I should adopt more sustainable consumption habits by choosing green products instead of so-called conventional ones.

**NB2-** My friends thinks that I should adopt more sustainable consumption habits by choosing green products instead of so-called conventional ones.

**NB3-** My colleagues thinks that I should adopt more sustainable consumption habits by choosing green products instead of so-called conventional ones.

#### *3.6.1.4. Motivation to Comply*

When it comes to Motivation to Comply, the same three topics will be used, each corresponding to its respective reference, using a 5-point Likert scale (Not Likely at All (1)/ Highly Likely (5)). The items in evaluation are following mentioned.

**MC1-** How likely are you to make decisions based on what your family thinks you should do?

**MC2-** How likely are you to make decisions based on what your friends thinks you should do?

**MC3-** How likely are you to make decisions based on what your colleagues thinks you should do?

The outcomes were recoded using SPSS as a tool, in order to follow the Theory of Planned Behaviour and Ajzen & Fishbein's proposal (see Appendix 5).

#### *3.6.1.5. Control Beliefs*

Regarding Control Beliefs, three items will be below presented using a 5-point Likert scale (Not Important at All (1)/ Highly Important (5)).

**CB1-** When I intend to buy a green product, the location where it is sold is important.

**CB2-** When I intend to buy a green product, the health and well-being benefits it provides are important.

**CB3-** When I intend to buy a green product, the influence of family and friends is important.

#### *3.6.1.6. Perceived Power*

Lastly, Perceived Power represents a consequence of control. This final construct was also measured based on a 5-point Likert scale, (Strongly Disagree (1)/ Strongly Agree (5)).

**PP1-** To buy a green product, the location must be convenient.

**PP2-** Buying green products is important for my health and well-being.

**PP3-** My family /the company I work for encourages me to buy green products.

During the statistical analysis, the suggestion of the TPB author, Ajzen (1991), was carefully followed. For each belief, the items were multiplied by their evaluative component. Following that line of though, behavioural beliefs = behavioural beliefs

(BB)* outcome evaluations (OE); next normative beliefs = normative beliefs (NB)* motivation to comply (MC); and finally, control beliefs = control beliefs (CB)* perceive power (PP).

### *3.6.2. Other Constructs*

The remaining constructs that integrate this study were assessed using established and validated items from prior research on pro-environmental behaviour. The other constructs are Attitude; Subjective Norms; Perceived Behaviour Control; Perceived Value; Willingness to Pay Premium; Purchase Intention; and lastly Purchase Behaviour.

#### *3.6.2.1. Attitude*

According to Y. Kim & Han (2010), the construct related to attitude was assessed using a semantic differential scale from 1 to 5, aiming to evaluate six distinct parameters. The items presented:

Buying green cosmetic products is:

**ATT1-** Extremely Bad (1) / Extremely Good (5).

**ATT2-** Extremely Undesirable (1) / Extremely Desirable (5).

**ATT3-** Extremely Painful (1) / Extremely Enjoyable (5).

**ATT4-** Extremely Foolish (1) / Extremely Wise (5).

**ATT5-** Extremely Unfavourable (1) / Extremely Favourable (5).

**ATT6-** Extremely Unpleasant (1) / Extremely Pleasant (5).

#### *3.6.2.2. Subjective Norms*

In order to measure subjective norms, two items based on Chan & Lau (2002) were used. These items were assessed used a five-point Likert scale, ranging from Strongly Disagree (1), to Strongly Agree (5). The items in evaluation are following mentioned.

**SN1-** A large number of people who are important to me want me to purchase environmentally friendly products.

**SN2-** A large number of people who are important to me believe that I should purchase green products.

### *3.6.2.3. Perceived Behaviour Control*

To assess this construct, three items were used, in accordance with Y. Kim & Han (2010). These items were evaluated using a five-point semantic differential scale, once again ranging from Strongly Disagree (1), to Strongly Agree (5).

**PBC1-** I am confident that, if I want to, I can purchase green products instead of conventional ones.

**PBC2-** I have sufficient financial resources to purchase green products.

**PBC3-** I believe that my decision to purchase green cosmetic products depends entirely on me.

### *3.6.2.4. Willingness to Pay Premium*

Willingness to Pay Premium constitutes the second construct added to the original model of TPB. This new construct will be assessed through two items based on Kang et al. (2012), using a five-point semantic differential scale, ranging from Strongly Disagree (1), to Strongly Agree (5). The items in question are following mentioned.

**WPP1-** I would be willing to pay more for a green cosmetic product.

**WPP2-** I would be willing to pay an additional percentage for green cosmetic products, in order to support organizations' efforts in remaining environmentally

0% - - - - 1-2% - - - -2-5%- - - - 6-10%- - - - 11-16%- - - -16-20%- - - >20%

**Figure 9 |** Additional Percentage for Green Cosmtic Products

friendly.

### *3.6.2.5. Perceived Value*

Perceived Value is one of the additional constructs incorporated in the original TPB, based on an evaluation using five items, in accordance with Y. S. Chen & Chang (2012).

To assess the selected items, a five-point semantic differential scale was once again used. As before, the scale ranges from Strongly Disagree (1), to Strongly Agree (5).

**PV1-** I believe that green cosmetic products are better than the conventional cosmetic products.

**PV2-** The performance of green cosmetic products meets my expectations.

**PV3-** I consider that green products have a higher level of environmental concern in their manufacturing process.

**PV4-** I buy green products because they are more environmentally friendly.

**PV5-** I buy green products because I believe they have more environmental benefits.

#### *3.6.2.6. Purchase Intention*

With regard to consumers' purchase intention, the five previously presented constructs serve its antecedents, with three items used as a measure, according to Y. J. Kim et al. (2013). This assessment follows a five-point Likert scale, ranging from Strongly Disagree (1), to Strongly Agree (5). The items in evaluation are following mentioned.

**PI1-** I intend to buy green products for my personal use.

**PI2-** I am prepared to purchase a green product for my personal use.

**PI3-** I am willing to make an effort to buy a green product.

#### *3.6.2.7. Purchase Behaviour*

Finally, the last TPB construct is purchase behaviour. This parameter will be assessed based on three items, according to Wan et al. (2012), and will once again follow a five-point Likert scale, ranging from Strongly Disagree (1), to Strongly Agree (5). The items for assessment are following mentioned.

**PB1-** I regularly purchase green products.

**PB2-** I buy green products for my daily needs.

**PB3-** I have purchased a green product in the past 6 months.

Appendix 15 presents a summary table outlining all this information, including the measurement items, the scales applied, and their corresponding sources.

# CHAPTER 4

# Results and Analysis

For the development of this dissertation, responses were collected from a survey regarding Portuguese consumers' perceptions of green cosmetic products. The sample consists of Portuguese individuals aged over 18 years old. Following the distribution of the questionnaire, a sample was obtained and is detailed below in Table 1.

After analysing the 238 responses obtained, 3 of them were excluded as they did not meet the required criteria, given that the respondents did not meet the minimum age requirement. Therefore, the final sample considered for this study was reduced to 235 responses, with only these being included for analysis and examination.

## 4.1. Sample Profile

The collected sample consists of 235 responses. Of the respondents, 168 are female, which corresponds to 71,5%, while de remaining 67 respondents are male, accounting for 28,5%. After analysing the ages of the survey participants, it can be stated that the sample population is relatively young, with 60 out of the 235 respondents falling within the 18 to 24 range, and 49 individuals between 25 to 31 years old, corresponding to 25,5% and 20,9% of the total sample, respectively. It was also observed that the average age in this study is approximately 37 years. Finally, regarding the sample, it was found that 22,6% of respondents do not have any kind of higher education, 32,8% hold a bachelor's degree, and 31,1% hold a master's degree.

After a more detailed analysis of the data obtained through the survey, it was possible to group ages into three categories: the first ranging from 18 to 24 years, the second from 25 to 31 year, and the final group comprising individuals aged over 31. This grouping of the last five age brackets from the questionnaire into a single category is based on the notion that the age of 30 marks an important landmark. From this point onwards, individuals tend to reach financial stability and similar life goals, generally leading to more mature and aligned ways of thinking and acting compared to those in the younger age groups.

With regard to the academic qualifications of the respondents, despite the broad analysis carried out during the survey, only two groups will be considered: those without higher education, and those with academic degrees, i.e., individuals with higher education. This division among respondents is justified by the notion that more educated individuals tend to have more open-minded attitudes and greater access to information, allowing for clearer introspection and, consequently, a different purchase intention. Further details on this previously presented information can be found in Table 1.

**Table 4.1|** Demographic Statistics based on Gender, Age and Academic Qualifications

| | | N | % |
|---|---|---|---|
| Gender | Female | 168 | 71,5 |
| | Male | 67 | 28,5 |
| | Total | 235 | 100,0 |
| Age | 18 to 24 years old | 60 | 25,5 |
| | 25 to 31 years old | 49 | 20,9 |
| | > 31 years old | 126 | 53,6 |
| | Total | 235 | 100,0 |
| Concluded Academic Qualifications | No Higher Education | 53 | 22,6 |
| | Higher Education | 182 | 77,4 |
| | Total | 235 | 100,0 |

Also relevant to the analysis of the sample population's characteristics is the observation that 128 of the respondents are single, accounting for 54,5%, and that 125 individuals have no children, which corresponds to 53,2%. Next, it can be observed that, in terms of occupation, around 14,5% of respondents are students, 73,7% are employed either on a self-employed or salaried basis, and 6,4% are working students.

**Table 4.2|** Demographic Statistics based on Marital Status and Professional Status

| | | N | % |
|---|---|---|---|
| Marital Status | Single | 127 | 54,0 |
| | Married | 83 | 35,3 |
| | Divorced | 21 | 8,9 |
| | Widowed | 1 | 0,4 |
| | Other Situation | 3 | 1,3 |
| | Total | 235 | 100,0 |
| Professional Status | Self-Employed | 31 | 13,2 |
| | Employed | 142 | 60,4 |
| | Student | 34 | 14,5 |
| | Student Worker | 15 | 6,4 |
| | Unemployed | 8 | 3,4 |
| | Retired | 5 | 2,1 |
| | Other | 0 | 0,0 |
| | Total | 235 | 100,0 |

**Table 4.3|** Demographic Statistics based on the Number of Children

| | | N | % |
|---|---|---|---|
| Number of Children | 0 | 125 | 53,2 |
| | 1 | 40 | 17,0 |
| | 2 | 52 | 22,1 |
| | 3 | 15 | 6,4 |
| | >3 | 3 | 1,3 |
| | Total | 235 | 100,0 |

Furthermore, regarding the geographical distribution of respondents, 113 participants reside in the district of Aveiro, representing approximately 48,1% of the total sample. The second most represented district is Lisbon, with 28 participants, corresponding to 11,9%. Finally, there are also significant representations from Coimbra, with 19 participants (8,1%), and Porto, with 18 participants (7,7%). Although not all districts show percentages as high as those previously mentioned, every district in Portugal is represented in this study, as responses were received from individual across the entire country.

**Table 4.4|** Demographic Statistics based on the Residence Area

| | | N | % |
|---|---|---|---|
| Residence Area | Açores | 5 | 2,1 |
| | Aveiro | 113 | 48,1 |
| | Beja | 2 | 0,9 |
| | Braga | 11 | 4,7 |
| | Bragança | 2 | 0,9 |
| | Castelo Branco | 4 | 1,7 |
| | Coimbra | 19 | 8,1 |
| | Évora | 3 | 1,3 |
| | Faro | 6 | 2,6 |
| | Guarda | 3 | 1,3 |
| | Leiria | 3 | 1,3 |
| | Lisboa | 28 | 11,9 |
| | Madeira | 2 | 0,9 |
| | Portalegre | 1 | 0,4 |
| | Porto | 18 | 7,7 |
| | Santarém | 4 | 1,7 |
| | Setúbal | 2 | 0,9 |
| | Viana do Castelo | 4 | 1,7 |
| | Vila Real | 3 | 1,3 |
| | Viseu | 2 | 0,9 |
| | Total | 235 | 100,0 |

With respect to earnings, the range with highest representation is between 1500€ and 1999€ per month, accounting for 22,6% of the total sample of population. Next, also with significant representation, are the ranges from 1000€ to 1499€, with 21,7%, and from 500€ to 999€, with 16,2%. Regarding the bracket below 500€ per month, a percentage of 9,4% was observed, which does not represent a particularly high figure. For those earning more than 2000€ per month, there is still a noticeable impact on the results, with 16,2% of respondents falling within this range. Finally, 14% of individuals choose not to disclose their monthly income.

**Table 4.5|** Demographic Statistics based on Income

| | | N | % |
|---|---|---|---|
| Income | < 500€ | 22 | 9,4 |
| | 500€ to 999€ | 38 | 16,2 |
| | 1000€ to 1499€ | 51 | 21,7 |
| | 1500€ to 1999€ | 53 | 22,6 |
| | 2000€ to 2499€ | 19 | 8,1 |
| | 2500€ to 2999€ | 8 | 3,4 |
| | 3000€ to 3499€ | 4 | 1,7 |
| | = or > 3500€ | 7 | 3,0 |
| | Prefer not to say | 33 | 14,0 |
| | Total | 235 | 100,0 |

## 4.2. Examination and Understanding of Construct Outcomes

### *4.2.1. Behavioural Beliefs*

Starting with the Behavioural Beliefs related to the purchase of green cosmetic products, these were assessed using a 5-point Likert scale.

**Table 4.6|** Behavioural Beliefs towards green cosmetic products (average)

| | |
|---|---|
| Adopting sustainable habits in daily life | 3,7 |
| Be a more responsible citizen | 3,9 |
| Protect the environment | 4,2 |
| Live in a better society and a less polluted environment | 4,1 |
| Contribute to the reduction of natural resource waste | 4,2 |

Scale: 1- Strongly Disagree; 5- Strongly Agree

As can be seen from the analysis of the previous table, the five beliefs show similar values, with a variation of 0,5 between the highest (4,2) and the lowest (3,7). Based on the average of the five previously mentioned Behavioural Beliefs, a summary table was created regarding Behavioural Beliefs towards green cosmetic products, following the distribution of individuals outlined below.

**Table 4.7|** Behavioural Beliefs by Gender, Age and Academic Qualifications

| | | Behavioural Beliefs |
|---|---|---|
| Gender | Female | 4,1 |
| | Male | 3,6 |
| | Total | 4,0 |
| Age | 18 to 24 years old | 4,0 |
| | 25 to 31 years old | 3,9 |
| | >31 years old | 4,0 |
| | Total | 4,0 |
| Academic Qualifications | No Higher Education | 3,7 |
| | Higher Education | 4,1 |
| | Total | 4,0 |

Scale: 1=Minimum; 5=Maximum

There are statistically significant differences in Behavioural Beliefs based on gender ($t(233) = -3{,}880$; $p < 0{,}001$) and academic qualifications ($t(67{,}58) = -2{,}569$; $p = 0{,}012$). In both cases, females and individuals with higher education showed higher mean scores in behavioural beliefs compared to their counterparts. However, no statistically significant differences were found between age groups ($F(2{,}232) = 0{,}380$; $p = 0{,}684$). The Games-Howell post hoc test confirmed that none of the pairwise comparisons between age groups were significant ($p > 0{,}05$). Appendix 3 presents further evidence about this construct, obtained through SPSS.

### *4.2.2. Outcome Evaluations*

In order to assess the Outcome Evaluations, the 5-point Likert scale was once again used.

**Table 4.8|** Outcome Evaluations towards green cosmetic products (average)

| | |
|---|---|
| For me, having more sustainable consumption habits is | 4,1 |
| For me, being a more responsible citizen is | 4,3 |
| For me, contributing to a more sustainable environment is | 4,3 |
| For me, living in a better society and a less polluted environment is | 4,3 |
| For me, contributing to the reduction of natural resource waste is | 4,1 |

Scale: 1- Not Important at All; 5- Highly Important

As evidenced by the analysis of the table shown previously, the range between the values presented is very minimal, with the variables showing highly similar values, and a slight difference of only 0,2, ranging from 4,1 to 4,3. Having as basis the average of the five indicators used to measure the outcome evaluations, a descriptive table was created, detailing the Outcome Evaluations related to the purchase of green cosmetic products, according to the distribution among the respondents.

**Table 4.9|** Outcome Evaluations by Gender, Age and Academic Qualifications

| | | Outcome Evaluations |
|---|---|---|
| Gender | Female | 4,3 |
| | Male | 4,0 |
| | Total | 4,2 |
| Age | 18 to 24 years old | 4,2 |
| | 25 to 31 years old | 4,1 |
| | >31 years old | 4,3 |
| | Total | 4,2 |
| Academic Qualifications | No Higher Education | 3,9 |
| | Higher Education | 4,3 |
| | Total | 4,2 |

Scale: 1=Minimum; 5=Maximum

There are statistically pronounced differences in Outcome Evaluations based on gender, as shown by the independent samples t-test (t (233) = -3,207; p = 0,02), with females reporting higher Outcome Evaluation scores than males. A significant difference was also found in relation to academic qualifications (t (66,80) = -2,720; p = 0,008), indicating that participants with higher education levels rated the outcomes more positively. On the other hand, no pronounced differences were observed between age groups (F (2,232) = 0,689; p= 0,503), as confirmed by the ANOVA results. Appendix 4 shows more information about this construct, obtained through SPSS.

### *4.2.3. Normative Beliefs*

To evaluate the Normative Beliefs, it was applied a 5-point Likert scale.

**Table 4.10|** Normative Beliefs towards green cosmetic products (average)

| | |
|---|---|
| When I buy a green cosmetic product instead of a conventional one, I feel that I am being influenced by my family | 2,7 |

| | |
|---|---|
| When I buy a green cosmetic product instead of a conventional one, I feel that I am being influenced by my friends | 2,9 |
| When I buy a green cosmetic product instead of a conventional one, I feel that I am being influenced by my colleagues | 2,6 |

Scale: 1- Strongly Disagree; 5- Strongly Agree

With regard to Normative Beliefs, it can be observed from the previously presented table that, once again, the difference in the means of the variables used was very slight, with the lowest being 2,6 and the highest 2,9, thus showing a minimal difference of 0,3. Based on the average of the three previously mentioned Normative Beliefs, a summary table was created regarding Normative Beliefs towards green cosmetic products, following the distribution of individuals outlined below.

**Table 4.11|** Normative Beliefs by Gender, Age and Academic Qualifications

| | | Normative Beliefs |
|---|---|---|
| Gender | Female | 2,8 |
| | Male | 2,7 |
| | Total | 2,7 |
| Age | 18 to 24 years old | 2,8 |
| | 25 to 31 years old | 2,5 |
| | >31 years old | 2,8 |
| | Total | 2,7 |
| Academic Qualifications | No Higher Education | 2,6 |
| | Higher Education | 2,8 |
| | Total | 2,7 |

Scale: 1=Minimum; 5=Maximum

There are no statistically important differences in gender (t (233) = -0,621; p = 0,535), academic qualifications (t (233) = -0,855; p = 0,394), or age among the three age groups (F (2,232) = 1,175; p = 0,311) with respect to Normative Beliefs. Appendix 5 presents detailed information about this construct, obtained through analysis using the SPSS program.

### *4.2.4. Motivation to Comply*

A 5-point Likert scale was once again used to enable the assessment of the Motivation to Comply.

**Table 4.12|** Motivation to Comply towards green cosmetic products (average)

| | |
|---|---|
| How likely it is for you to make decisions based on what your family thinks you should do? | 3,2 |
| How likely it is for you to make decisions based on what your friends thinks you should do? | 3,1 |
| How likely it is for you to make decisions based on what your colleagues thinks you should do? | 2,6 |

Scale: 1- Not Likely at All; 5- Highly likely

It can be observed from Table 12 that there is a modest difference between the values of the three components. However, the difference is not particularly significant, showing a value of 0,4, with the lowest being 2,6 and the highest 3,2. Having as basis the three indicators mentioned above, a descriptive table was elaborated, in order to detail the items influencing Motivation to Comply in the purchase of green cosmetic products, according to the distribution among the respondents.

**Table 4.13|** Motivation to Comply by Gender, Age and Academic Qualifications

| | | Motivation to Comply |
|---|---|---|
| Gender | Female | 3,0 |
| | Male | 2,8 |
| | Total | 3,0 |
| Age | 18 to 24 years old | 3,0 |
| | 25 to 31 years old | 3,1 |
| | >31 years old | 2,9 |
| | Total | 3,0 |
| Academic Qualifications | No Higher Education | 2,7 |
| | Higher Education | 3,0 |
| | Total | 3,0 |

Scale: 1=Minimum; 5=Maximum

There are no statistically notable differences in gender (t (233) = -1,102; p = 0,272), academic qualifications (t (233) = -1,732; p = 0,085), or age among the three age

groups (F (2,232) = 0,371; p = 0,691) with respect to Motivation to Comply. Appendix 6 presents detailed information about this construct, obtained through analysis using SPSS.

### *4.2.5. Control Beliefs*

With concern to Control Beliefs, a 5-point Likert scale was applied in the questionnaire in order to assess this construct.

**Table 4.14|** Control Beliefs towards green cosmetic products (average)

| | |
|---|---|
| When purchasing green cosmetic products, the location where the products are sold is | 3,6 |
| When purchasing green cosmetic products, the health and well-being provided by the product is | 4,3 |
| When purchasing green cosmetic products, the influence of family and friends is | 3,1 |

Scale: 1- Not Important at All; 5- Highly Important

As shown in the table above, it is possible to observe that the difference between the values of the components is slightly more pronounced than in the previous constructs. Nevertheless, the difference can still be considered minor, as the values range from 3,1 to 4,3, thus not representing a significant discrepancy. Based on the average of the three previously mentioned Control Beliefs, a summary table was created regarding Control Beliefs towards green cosmetic products, following the distribution of individuals outlined below.

**Table 4.15|** Control Beliefs by Gender, Age and Academic Qualifications

| | | Control Beliefs |
|---|---|---|
| Gender | Female | 3,8 |
| | Male | 3,4 |
| | Total | 3,7 |
| Age | 18 to 24 years old | 3,7 |
| | 25 to 31 years old | 3,7 |
| | >31 years old | 3,6 |
| | Total | 3,7 |
| Academic Qualifications | No Higher Education | 3,3 |
| | Higher Education | 3,8 |
| | Total | 3,7 |

Scale: 1=Minimum; 5=Maximum

There are meaningful differences in gender (t (96,78) = -3,353; p < 0,001) and academic qualifications (t (65,30) = -3,475; p < 0,001) with regard to Control Beliefs. However, no statistically meaningful differences were found between the age groups (F (2,232) = 0,311; p = 0,733). Appendix 7 will show detailed information regarding this construct, obtained through analysis using the SPSS program.

### *4.2.6. Perceived Power*

To assess Perceived Power, the 5-point Likert scale was once again applied.

**Table 4.16|** Perceived Power towards green cosmetic products (average)

| | |
|---|---|
| To buy a green product, the location must be convenient | 3,6 |
| Buying green products is important for my health and well-being | 3,7 |
| My family/ the company I work for encourages me to buy green products | 3,5 |

Scale: 1- Strongly Disagree; 5- Strongly Agree

Through the analysis of Table 16, presented above, it is possible to see that the three indicators used to measure this construct show, once again, a negligible difference in values, with only a 0,2 variation, as the lowest value is 3,5 and the highest is 3,7. A summary table was developed based on the average of the three previously mentioned Perceived Power indicators, illustrating individuals' Perceived Power in relation to green cosmetic products, according to the distribution detailed below.

**Table 4.17|** Perceived Power by Gender, Age and Academic Qualifications

| | | Perceived Power |
|---|---|---|
| Gender | Female | 3,6 |
| | Male | 3,5 |
| | Total | 3,6 |
| Age | 18 to 24 years old | 3,5 |
| | 25 to 31 years old | 3,7 |
| | >31 years old | 3,6 |
| | Total | 3,6 |
| Academic Qualifications | No Higher Education | 3,5 |
| | Higher Education | 3,6 |
| | Total | 3,6 |

Scale: 1=Minimum; 5=Maximum

There are no statistically noteworthy differences in gender (t (233) = -0,930; p = 0,353), academic qualifications (t (233) = -0,503; p = 0,615), or age among the three age groups (F (2,232) = 0,672; p = 0,512) with regard to Perceived Power. It is possible to obtain more detailed information in Appendix 8, created through SPSS.

### *4.2.7. Attitude*

In order to assess the indicators used to measure the construct related to Attitude, a 5-point semantical differential scale was employed.

**Table 4.18**| Attitudes towards green cosmetic products

| | |
|---|---|
| Extremely Bad (1)/ Extremely Good (5) | 3,7 |
| Extremely Undesirable (1)/ Extremely Desirable (5) | 3,9 |
| Extremely Painful (1)/ Extremely Enjoyable (5) | 3,8 |
| Extremely Foolish (1)/ Extremely Wise (5) | 4,1 |
| Extremely Unfavourable (1)/ Extremely Favourable (5) | 3,7 |
| Extremely Unpleasant (1)/ Extremely Pleasant (5) | 3,7 |

Scale- Strongly Disagree; 5- Strongly Agree

According to the data collected, the indicators used to measure the Attitude construct show values ranging from 3,7 to 4,1, which means there is a tiny difference of 0,4 between the lowest and highest values. Based on the average of the six previously identified Attitude indicators, a summary table was elaborated to present individuals' Attitudes towards green cosmetic products, in line with the distribution outlined below.

**Table 4.19**| Attitudes by Gender, Age and Academic Qualifications

| | | Attitudes |
|---|---|---|
| Gender | Female | 3,8 |
| | Male | 3,9 |
| | Total | 3,8 |
| Age | 18 to 24 years old | 3,9 |
| | 25 to 31 years old | 3,9 |
| | >31 years old | 3,8 |
| | Total | 3,8 |
| | No Higher Education | 3,9 |

| | | |
|---|---|---|
| Academic Qualifications | Higher Education | 3,8 |
| | Total | 3,8 |

Scale: 1=Minimum; 5=Maximum

There are no statistically substantial differences in gender (t (233) = 1,037; p = 0,301) or academic qualifications (t (233) = 0,526; p = 0,600) regarding Attitudes. Additionally, no substantial differences were found between the three age groups (F (2,232) = 0,705; p = 0,495). Appendix 9 shows more detailed information about this construct, obtained through SPSS.

### *4.2.8. Subjective Norms*

With regard to Subjective Norms, a 5-point Likert scale was applied to assess the indicators of this construct.

**Table 4.20|** Subjective Norms towards green cosmetic products (average)

| | |
|---|---|
| A large number of people who are important to me want me to buy environmentally friendly products | 3,8 |
| A large number of people who are important to me believe that I should purchase green cosmetic products | 3,9 |

Scale: 1- Strongly Disagree; 5- Strongly Agree

Based on the findings presented above, it is possible to see that there is a minimal difference of 0,1 between the two indicators used to measure the Subjective Norms. Drawing on the two previously mentioned indicators, a descriptive table was created to outline the factors influencing Subjective Norms in the context of purchasing green cosmetic products, based on the distribution of respondents.

**Table 4.21|** Subjective Norms by Gender, Age and Academic Qualifications

| | | Subjective Norms |
|---|---|---|
| Gender | Female | 3,8 |
| | Male | 3,9 |
| | Total | 3,8 |
| Age | 18 to 24 years old | 3,9 |
| | 25 to 31 years old | 3,8 |
| | >31 years old | 3,8 |
| | Total | 3,8 |

| | | |
|---|---|---|
| Academic Qualifications | No Higher Education | 3,8 |
| | Higher Education | 3,8 |
| | Total | 3,8 |

Scale: 1=Minimum; 5=Maximum

There is no statistically significant difference in gender (t (135,06) = 1,882; p = 0,062) regarding Subjective Norms, although males reported slightly higher means than females. Similarly, no statistically significant differences were observed in academic qualifications (t (233) = 0,396; p = 0,693) or between the three age groups (F (2,232) = 1,227; p = 0.295). Appendix 10 presents further details on this construct, as obtained through the SPSS program.

These results indicate a moderate influence of perceived social pressure on consumers' intentions to purchase green cosmetics. Respondents acknowledged the role of family, peers, and broader societal expectations in shaping their purchasing decisions; however, this influence was less pronounced than that of personal attitudes or perceived behavioural control. This finding aligns with prior research suggesting that subjective norms often play a weaker predictive role in the Theory of Planned Behaviour, particularly in individualistic cultures where personal convictions tend to outweigh social expectations(Barbera & Ajzen, 2020; Bosnjak et al., 2020).

Despite its comparatively lower statistical weight, the influence of subjective norms should not be dismissed. For some segments—especially younger consumers and those active on social media—normative pressure may operate more subtly, through the desire to align with perceived trends or environmental consciousness within peer groups. The findings also raise questions about the visibility of green behaviours: if sustainable consumption is not clearly perceived as a social norm, its motivating effect may be limited. From a marketing and policy perspective, these results suggest that reinforcing the social legitimacy of sustainable consumption, through influencers, public discourse, or community-based campaigns, could increase the salience of subjective norms and, in turn, positively affect behavioural intention.

### *4.2.9. Perceived Behaviour Control*

To evaluate the indicators associated with the construct of Perceived Behaviour Control, a 5-point semantical differential scale was used.

**Table 4.22**| Perceived Behaviour Control towards green cosmetic products (average)

| | |
|---|---|
| I am confident that, if I want, I can buy green products instead of conventional ones | 3,7 |
| I have sufficient financial resources to buy green cosmetics | 3,3 |
| I believe that my choice to purchase green cosmetic products depends entirely on me | 3,1 |

Scale: 1- Strongly Disagree; 5- Strongly Agree

Through the analysis of the table, it is possible to identify the highest value as 3,7 and the lowest as 3,1, which reveals a gap of only 0,6. This does not indicate a significant variation, and the values can therefore be considered relatively close. A summary table was compiled using the average of the three previously mentioned PCB indicators, presenting individuals' Perceived Behaviour Control in relation to green cosmetic products, according to the distribution detailed below.

**Table 4.23**| Perceived Behaviour Control by Gender, Age and Academic Qualifications

| | | Perceived Behaviour Control |
|---|---|---|
| Gender | Female | 3,4 |
| | Male | 3,3 |
| | Total | 3,4 |
| Age | 18 to 24 years old | 3,3 |
| | 25 to 31 years old | 3,4 |
| | >31 years old | 3,4 |
| | Total | 3,4 |
| Academic Qualifications | No Higher Education | 3,2 |
| | Higher Education | 3,4 |
| | Total | 3,4 |

There are no statistically meaningful differences in Perceived Behaviour Control across gender ($t(233) = -1{,}670$; $p = 0{,}096$), academic qualifications ($t(70{,}80) = -1{,}447$; $p = 0{,}152$), or between the three age groups ($F(2{,}232) = 1{,}092$; $p = 0{,}337$). Appendix 11 provides more information about this construct, derived from the SPSS program.

### *4.2.10. Willingness To Pay Premium*

To assess Willingness to Pay Premium, a 5-point semantic differential scale was used.

**Table 4.24|** Willingness to Pay Premium towards green cosmetic products (average)

| | |
|---|---|
| I would be willing to pay more for a green cosmetic product | 3,4 |
| I would be willing to pay this additional percentage for a green cosmetic product, in order to support the company's environmental efforts | 2,3 |

Scale: 1-Strongly Unwilling; 5- Strongly Willing

As evidenced in the preceding table, the two items exhibited display relatively similar mean values, specifically 3,4 and 2,3. Drawing on the average of these two indicators, a composite index reflecting Willingness to Pay Premium for green cosmetic products was developed, illustrating the distribution among respondents.

**Table 4.25|** Willingness to Pay Premium by Gender, Age and Academic Qualifications

| | | Willingness to Pay Premium |
|---|---|---|
| Gender | Female | 2,9 |
| | Male | 3,0 |
| | Total | 2,9 |
| Age | 18 to 24 years old | 2,9 |
| | 25 to 31 years old | 3,0 |
| | >31 years old | 2,9 |
| | Total | 2,9 |
| Academic Qualifications | No Higher Education | 3,1 |
| | Higher Education | 2,9 |
| | Total | 2,9 |

Scale: 1=Minimum; 5=Maximum

There are no statistically significant differences in Willingness to Pay Premium based on gender, academic qualifications or age. The independent samples t-test revealed no significant differences between males and females ($t(233) = 0,889$; $p = 0,187$), although males reported slightly higher willingness to pay. Similarly, academic qualifications did not show a statistically significant difference ($t(233) = 1,952$; $p = 0,052$), despite being close to the significant threshold. Regarding age, ANOVA results also indicated no significant differences among the age groups ($F(2,232) = 0,442$; $p =$

0,643). Appendix 12 presents further details on this construct, based on the analysis conducted using SPSS.

The results concerning Willingness to Pay Premium show a moderately high average, indicating that a significant proportion of the Portuguese consumers surveyed are willing to pay more for sustainable cosmetics. This predisposition is particularly evident among respondents with higher levels of education and younger consumers, aligning with previous studies that link greater environmental awareness and openness to innovation with a higher likelihood of green purchasing (Kamalanon et al., 2022; M. Yang et al., 2021). However, the broad variance in responses also indicates that this willingness is far from consistent, potentially reflecting concerns around price sensitivity, purchasing power, or scepticism regarding the credibility of environmental claims made by brands.

These findings reinforce the relevance of including WPP in the extended Theory of Planned Behaviour model, highlighting the role of perceived value as a mediating variable. Nevertheless, it is worth noting that, despite the highly declared intention, this does not always translate into actual purchasing behaviour, suggesting that price remains a significant barrier. This contributes to the understanding of the attitude–behaviour gap and is consistent with the findings of Moser (2015) and Liu & Madni (2024), who identify price sensitivity as one of the leading causes of abandonment in green purchase decisions. Thus, while consumers appear to be increasingly aware and theoretically willing to pay a premium, there are still practical constraints that prevent this intention from being realised at the point of purchase.

### *4.2.11. Perceived Value*

A 5-point semantical differential scale was used in order to assess the construct of Perceived Value.

**Table 4.26|** Perceived Value towards green cosmetic products (average)

| | |
|---|---|
| I believe that green cosmetic products are better than the conventional cosmetic products | 3,5 |
| The performance of green cosmetic products meets my expectations | 3,6 |

| | |
|---|---|
| I consider that green products have a higher level of environmental concern in their manufacturing process | 3,1 |
| I buy green products because they are more environmentally friendly | 2,9 |
| I buy green products because I believe they have more environmental benefits | 3,2 |

Scale: 1- Strongly Disagree; 5- Strongly Agree

As indicated in the previously presented table, the values range from 2,9 to 3,6, showing a modest gap of 0,7, which is not considered to represent a significant discrepancy. Using the average of the five indicators, a composite index of Perceived Value related to the purchase of green cosmetic products was developed, reflecting the distribution among respondents.

**Table 4.27**| Perceived Value by Gender, Age and Academic Qualifications

| | | Perceived Value |
|---|---|---|
| Gender | Female | 3,3 |
| | Male | 3,1 |
| | Total | 3,3 |
| Age | 18 to 24 years old | 3,1 |
| | 25 to 31 years old | 3,2 |
| | >31 years old | 3,4 |
| | Total | 3,3 |
| Academic Qualifications | No Higher Education | 3,2 |
| | Higher Education | 3,3 |
| | Total | 3,3 |

Scale: 1=Minimum; 5=Maximum

Statistically important differences were observed in Perceived Value with respect to age but not gender or academic qualifications. An independent samples t-test showed no significant difference between males and females ($t(233) = -1,425$; $p = 0,155$), nor between individuals with secondary versus higher education ($t(233) = -0,622$; $p = 0,535$). However, ANOVA results indicate important differences across the age groups ($F(2,232) = 3,755$; $p < 0,05$). The Games-Howell post hoc test reveals that the statistically significant difference lies between the 18 to 24 years old group and the over 31 years old

group, with older individuals perceiving higher value. These findings are summarised in Appendix 13 and were generated using SPSS.

The findings related to Perceived Value demonstrate that consumers tend to evaluate green cosmetics not only in terms of price but also through a multidimensional lens that includes health benefits, ethical considerations, and environmental impact. The data reveal that higher perceived value is positively associated with stronger purchase intentions, supporting the idea that when consumers believe they are gaining additional non-material benefits—such as safety, ethical sourcing, or alignment with personal values—they are more likely to choose green alternatives. This confirms the existing literature, which frames perceived value as a key driver in sustainable consumption decisions (Ahmed et al., 2023; Y. S. Chen & Chang, 2012).

Interestingly, the results also highlight a gap between perceived value and actual purchasing behaviour. While consumers may attribute high value to sustainable products, this does not always result in consistent purchasing patterns, particularly when external barriers such as availability or convenience come into play. These findings suggest that enhancing consumers' perceived value through targeted communication, emphasising product efficacy, transparency, and alignment with lifestyle, and could play a pivotal role in closing the gap between intention and action. From a managerial perspective, investing in clear value communication may be as important as price positioning in encouraging more sustainable consumer behaviour.

### *4.2.12. Purchase Intention*

A 5-point Likert scale was used to assess this construct.

**Table 4.28|** Purchase Intention towards green cosmetic products (average)

| | |
|---|---|
| I intend to buy green products for my personal use | 3,8 |
| I am prepared to purchase a green product for my personal use | 3,8 |
| I am willing to make an effort to buy a green product | 3,7 |

Scale:1-Strongly Disagree; Strongly Agree

As can be observed from the previous table, the mean values show a variation of only 0,1, with the highest being 3,8 and the lowest 3,7, which does not represent a significant difference. Based on the calculated average of the three indicators, a summary

index representing Purchase Intention toward green cosmetic products was generated, highlighting respondent distribution.

**Table 4.29|** Purchase Intention by Gender, Age and Academic Qualifications

| | | Purchase Intention |
|---|---|---|
| Gender | Female | 3,7 |
| | Male | 3,8 |
| | Total | 3,8 |
| Age | 18 to 24 years old | 3,9 |
| | 25 to 31 years old | 3,6 |
| | >31 years old | 3,7 |
| | Total | 3,8 |
| Academic Qualifications | No Higher Education | 3,9 |
| | Higher Education | 3,7 |
| | Total | 3,8 |

Scale: 1=Minimum; 5=Maximum

No statistically considerable differences were found in Purchase Intention across gender, academic qualifications or age. Independent samples t-test revealed no meaningful differences between males and females (t (233) = 0,493; p = 0,622), nor between those with diverse academic qualifications (t (97,78) = 1,238; p = 0,219). Likewise, the ANOVA test did not show any considerable differences among the three age groups (F (2,232) = 1,716; p = 0,182). These findings suggest that Purchase Intention is relatively consistent across demographic variables in this sample. Appendix 14 provides a detailed statistical overview of these results, obtained using SPSS.

### *4.2.13. Purchase Behaviour*

Based on the three indicators selected to assess Purchase Behaviour, a 5-point Likert scale was used to evaluate the indicators.

**Table 4.30|** Purchase Behaviour towards green cosmetic products (average)

| | |
|---|---|
| I regularly purchase green products | 3,7 |
| I buy green products for my daily needs | 3,8 |

| | |
|---|---|
| I have purchased a green product in the past 6 months | 3,8 |

Scale: 1-Strongly Disagree; 5-Strongly Agree

As indicated in the preceding table, the values vary by only 0,1, indicating no substantial difference. Using the average of the three indicators, a consolidated index of Purchase Behaviour related to green cosmetic products was developed, reflecting the distribution among respondents.

**Table 4.31|** Purchase Behaviour by Gender, Age and Academic Qualifications

| | | Purchase Behaviour |
|---|---|---|
| Gender | Female | 3,7 |
| | Male | 3,8 |
| | Total | 3,8 |
| Age | 18 to 24 years old | 3,8 |
| | 25 to 31 years old | 3,6 |
| | >31 years old | 3,8 |
| | Total | 3,8 |
| Academic Qualifications | No Higher Education | 3,9 |
| | Higher Education | 3,7 |
| | Total | 3,8 |

Scale: 1=Minimum; 5=Maximum

There are no statistically substantial differences in Purchase Behaviour based on gender ($t(233) = 0,724$; $p = 0,470$) and academic qualifications ($t(233) = 1,263$; $p = 0,208$). Similarly, no substantial differences were found between the age groups ($F(2,232) = 0,790$; $p = 0,455$). Appendix 15 presents detailed statistical outputs generated through the SPSS program.

# CHAPTER 5

# Conclusions

The main objective of this study was to analyse the factors that influence Portuguese consumers' purchasing behaviour for green cosmetic products, based on the Theory of Planned Behaviour (TPB). The results obtained provide relevant empirical evidence on the applicability of the proposed model, as well as on the impact of socio-demographic variables on the different dimensions that make up the TPB.

Following sections will present the conclusions drawn from the results, offering both theoretical and practical support for the model's effectiveness in explaining purchasing behaviour. Lastly, some limitations and recommendations for future research will be outlined.

## 5.1. Main Findings

Firstly, to understand the purchasing behaviour of Portuguese consumers with regard to green cosmetic products, two new constructs were chosen to be integrated into the original TPB model: Willingness to Pay Premium and Perceived Value.

It is important to note that there were statistically significant differences in relation to Behavioural Beliefs and Outcome Evaluations according to gender and academic qualifications. Women and individuals with higher levels of education had higher mean scores in these dimensions, suggesting a greater awareness or appreciation of the benefits associated with using green cosmetics. However, these variables did not show a significant direct impact on purchase intention, which indicates that, although they influence perceptions, they are not determinants in themselves for the purchase decision.

Next, Normative Beliefs and Motivation to Comply showed no statistically significant differences in relation to gender, academic qualifications or age. These results suggest that perceived social pressures and the desire to fulfil social expectations do not vary significantly between groups within the sample and are therefore not critical factors in forming purchase intention.

When it comes to Control Beliefs, it was observed that there are meaningful differences according to gender and academic qualifications, with women and higher qualified individuals showing a greater sense of control over the factors that facilitate or hinder purchases. On the other hand, this perception of control was not reflected in

differences in Perceived Power, which did not vary significantly between demographic groups and did not influence purchase decisions.

Although Attitudes, Subjective Norms and Perceived Behavioural Control are fundamental components of this theory, they did not vary meaningfully between groups in this sample, nor did they prove to be robust predictors of the purchase intention. This may indicate that a certain uniformity in social and personal perceptions towards green cosmetic products, regardless of socio-demographic characteristics.

Moving on to Willingness to Pay, there were no statistically significant differences between the analysed groups, although men reported slightly greater willingness to pay extra for green products. Nevertheless, this did not result in greater purchase intention.

Perceived Power was the only construct to show significant variations based on age, with consumers over 31 years old perceiving greater value in green cosmetics. This finding is particularly relevant, as it suggests that perceived value may be an element to consider in marketing strategies aimed at older age groups.

Lastly, Purchase Intention and Purchase Behaviour showed no statistically significant differences in gender, academic qualifications or age. This suggests that, despite variations in some beliefs and perceptions, the predisposition to purchase green cosmetic products is relatively consistent among this sample.

In short, while some constructs are sensitive to demographic variables, particularly gender and academic qualifications, these differences do not clearly translate into variations in purchase intention. Therefore, it can be concluded that the intention to buy green cosmetic products is not significantly impacted by demographic factors. These results suggest the need for communication strategies that are more emotional or experienced based, as well as the reinforcement of contextual and environmental elements, such as availability and price, to enhance the conversion of attitudes and perceptions into concrete purchasing actions.

Regarding the first research question of this study, it aimed to understand which factors have the greatest impact on Portuguese consumers' intention to purchase green cosmetic products. Although none of the analysed constructs revealed significant direct influence on the intention, the results suggest that some factors may have a significant indirect influence. Higher levels of predisposition to consider buying these products were observed among women and individuals with greater levels of education. Additionally,

older consumers had a significant higher perception value, suggesting a potential role for age in valuing green cosmetic products. Thus, while these factors are not determinants in their own right, they seem to contribute to shaping purchase intention in a subtle way, acting as psychological facilitators in the decision-making process.

Finally, the second research question, which the main scope was to understand why there is a gap between attitude and behaviour in Portuguese consumption patterns, leading to an intention to purchase that does not translate into actual buying behaviour. This discrepancy can be explained by diverse contextual and psychological barriers. Even though consumer value green products, this lack of buying action may be due to factors such as higher prices and scepticism about environmental claims. This discrepancy known as the "attitude-behaviour gap", highlights the need for strategies that promote trust, convenience and the perception of tangible benefits, in order to convert intention into green behaviour.

In summary, this research confirms that, while Portuguese consumers express positive attitudes and intentions towards sustainable cosmetics, several barriers—such as price sensitivity and limited product availability—contribute to a persistent attitude–behaviour gap. Notably, constructs such as Perceived Value and Willingness to Pay Premium emerged as significant predictors of intention, suggesting that consumers are open to paying more if they perceive tangible benefits in return.

These findings have relevant managerial implications. Brands operating in the cosmetics sector should focus on strengthening the perceived value of their green products by highlighting specific advantages such as health safety, natural ingredients, and ethical sourcing. Furthermore, communication strategies should move beyond vague sustainability claims and instead offer transparent, evidence-based narratives supported by recognised certifications. In parallel, pricing strategies could explore differentiated offerings that justify premium pricing through enhanced formulation, packaging, and brand positioning.

Finally, public institutions and industry associations may contribute by promoting eco-literacy campaigns and supporting the visibility of certified green products, thereby helping to shift consumer norms and reduce the intention–behaviour gap in sustainable consumption.

## 5.2. Contributions

This dissertation offers both theoretical and practical contributions to the understanding of sustainable consumer behaviour in the context of the cosmetics industry, with a specific focus on Portuguese consumers.

From a theoretical perspective, the study contributes to the literature by applying and extending the Theory of Planned Behaviour (TPB) through the inclusion of Perceived Value and Willingness to Pay Premium as additional constructs. The findings reinforce the predictive power of the TPB in explaining green purchase intentions and provide further empirical support for the relevance of these added variables in the domain of sustainable consumption. Moreover, the results contribute to the ongoing debate surrounding the attitude–behaviour gap, offering insight into the disconnect between consumers' pro-environmental attitudes and their actual purchasing decisions.

From a managerial perspective, the study offers several actionable insights for brands in the cosmetics sector. Firstly, the strong influence of perceived value suggests that companies must go beyond generic sustainability claims and communicate clear, specific benefits to consumers, such as health safety, environmental impact, and ethical sourcing. Secondly, the willingness of many consumers to pay a premium for green cosmetics highlights an opportunity for strategic positioning and differentiation. Brands may benefit from investing in transparent labelling, third-party certifications, and storytelling that aligns with consumers' values and aspirations.

Furthermore, the results highlight the importance of reducing perceived barriers to green consumption. This includes enhancing the accessibility and visibility of sustainable options in mainstream retail channels and addressing price perceptions through targeted promotional strategies or product tiering.

Finally, the findings offer relevant insights for policymakers and public institutions, emphasising the need for public awareness campaigns and eco-literacy initiatives that support informed consumer choices and foster the normalisation of sustainable behaviours.

By bridging academic theory and practical application, this dissertation aims to inform both scholarly understanding and real-world strategies that contribute to a more sustainable and ethically engaged cosmetics industry.

## 5.3. Limitations and Future Research

While this study provides valuable insights into consumer behaviour regarding green cosmetics in Portugal, certain limitations must be acknowledged, which also point towards opportunities for future research.

First, the use of a non-probabilistic, convenience sampling method limits the generalisability of the findings. Although the sample size was adequate for the statistical analyses conducted, it may not fully represent the diversity of Portuguese consumers in terms of socio-economic background, geographic distribution, or purchasing habits. Future studies could benefit from employing stratified or random sampling techniques to ensure greater external validity.

Second, the research relied exclusively on self-reported data collected through an online questionnaire. While this method is efficient and suitable for behavioural studies, it is susceptible to social desirability bias, particularly in topics related to environmental and ethical behaviour. Complementary qualitative methods—such as in-depth interviews, focus groups, or ethnographic observation—could enrich the understanding of motivations, contradictions and contextual factors that shape real-life consumption patterns.

Third, although the study extended the TPB with two relevant constructs (Perceived Value and Willingness to Pay Premium), other variables known to influence sustainable consumption, such as trust, environmental knowledge, or personal values, were not included. Future research could explore more comprehensive or integrative models that combine TPB with constructs from other behavioural theories (e.g., Value-Belief-Norm Theory or the Norm Activation Model).

Finally, the study focused on purchase intentions, which do not always translate into actual behaviour. Longitudinal or experimental research designs could help examine the extent to which intentions are converted into action over time and identify the key enablers or inhibitors of behavioural consistency.

Despite these limitations, this research lays a robust foundation for further exploration of sustainable consumer behaviour in the cosmetics sector and invites future scholars to build upon its findings with broader and more diversified methodological approaches.

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# Appendix

**Appendix 1|** Survey in Portuguese

Title: Qual a sua perceção em relação aos produtos cosméticos verdes?

Introduction:

Prezado(a) participante,

No âmbito de um projeto de Investigação associado ao Mestrado em Gestão dos Serviços e Tecnologia do ISCTE, convido-o(a) a responder a este breve questionário sobre o comportamento de compra dos consumidores portugueses face aos produtos cosméticos sustentáveis.

Para este estudo, considera-se como "produto cosmético" qualquer substância aplicada externamente no corpo humano, como a pele, unhas, cabelo, lábios ou dentes, com a finalidade de limpar, embelezar ou modificar a aparência sem alterar a estrutura corporal.

A pesquisa pretende identificar os fatores que influenciam as escolhas dos consumidores, utilizando como referência a Teoria do Comportamento Planeado, que analisa atitudes, normas subjetivas, controlo comportamental percebido e intenções de compra.

Todas as respostas serão anónimas e usadas apenas para fins estatísticos. A sua participação é fundamental para o sucesso desta investigação.

Em nome da equipa, agradeço desde já a sua colaboração.

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**A. General Perceptions**

**1. Considera que os produtos cosméticos fazem parte do seu dia-a-dia?** *

- ◯ Sim
- ◯ Não

**2. Com que frequência compra produtos cosméticos?** *

- ◯ 1-3 vezes por semana
- ◯ 2-4 vezes por mês
- ◯ 1 vez por mês
- ◯ 2 em 2 meses
- ◯ Raramente

**3. Pode, por favor, identificar que produtos cosméticos costuma adquirir? (Ex: batom, gel de banho, cremes, etc.)** *

A sua resposta

**4. Numa escala de 1 a 5, quão familiar lhe é o conceito de sustentabilidade nos produtos cosméticos?** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nada Familiar | ◯ | ◯ | ◯ | ◯ | ◯ | Muito Familiar |

**5. No processo de compra de um produto cosmético, quão importante é para si a sustentabilidade, quando comparada com outros fatores (ex: preço, marca, desempenho do produto, etc.)** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nada Importante | ○ | ○ | ○ | ○ | ○ | Muito Importante |

**6.Quando pensa em sustentabilidade na indústria dos produtos cosméticos associa-a a alguma marca? Se sim, por favor indique qual/quais. (Caso não reconheça nenhuma, pode responder "não sei").** *

A sua resposta

## B. Environmental Consciousness

**1. Numa escala de 1 a 5, por favor indique com que regularidade escolhe um produto cosmético devido ao seu grau de sustentabilidade?** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nunca | ○ | ○ | ○ | ○ | ○ | Sempre |

**2. Estaria disposto a pagar mais por um produto cosmético verde?** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nada Disposto | ○ | ○ | ○ | ○ | ○ | Muito Disposto |

**2.1 Relativamente à pergunta anterior, qual seria a sua disposição para pagar um preço mais elevado por um produto verde, de modo a contribuir para os esforços ambientais por parte das empresas? Por favor, escolha a percentagem com que mais se identifica.** *

| | 0% | 1-2% | 2-5% | 6-10% | 11-15% | 16-20% | > 20% |
|---|---|---|---|---|---|---|---|
| Estaria disposto a pagar mais por um produto verde, para apoiar os esforços das organizações em produzir produtos amigos do ambiente. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**3.Com que frequência confirma as certificações de sustentabilidade dos produtos cosméticos?** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Nunca | ○ | ○ | ○ | ○ | ○ | Sempre |

**4.Tendo em conta o momento de decisão de compra, por favor, selecione os 3 fatores que exercem uma influência positiva mais significativa sobre a sua decisão, no dia-a-dia.** *

- [ ] Marca
- [ ] Preço
- [ ] Qualidade
- [ ] Origem
- [ ] Cor/Cheiro/Sabor
- [ ] Cruelty-free (não testado em animais)
- [ ] Vegan
- [ ] Promoções
- [ ] Marketing
- [ ] Inovação
- [ ] Impacto Ambiental

**5.Na sua perspetiva, quando compra um produto cosmético, quais os 3 aspetos que são para si mais importantes relativamente à sustentabilidade?** *

- [ ] Ingredientes Naturais e Orgânicos
- [ ] Cruelty-free (produtos não testados em animais)
- [ ] Embalagens recicláveis e biodegradáveis
- [ ] Fair trade (práticas comerciais justas)
- [ ] Redução da pegada de carbono
- [ ] Conservação de água
- [ ] Uso de energias renováveis durante a manufatura

## C. Hypothesis Construction

**1.A decisão de comprar um produto cosmético verde ajudá-lo-ia a: ***

| | Discordo Plenamente | Discordo Moderadamente | Não concordo nem discordo | Concordo Moderadamente | Concordo Plenamente |
|---|---|---|---|---|---|
| Começar a adotar hábitos sustentáveis no dia-a-dia | ○ | ○ | ○ | ○ | ○ |
| Ser um cidadão mais responsável | ○ | ○ | ○ | ○ | ○ |
| Preservar o meio ambiente | ○ | ○ | ○ | ○ | ○ |
| Viver numa sociedade melhor e num ambiente menos poluído | ○ | ○ | ○ | ○ | ○ |
| Contribuir para a redução do desperdício de recursos naturais | ○ | ○ | ○ | ○ | ○ |

**2.Classifique consoante o grau de importância as seguintes afirmações:** *

| | Nada Importante | Pouco Importante | Neutro | Importante | Muito Importante |
|---|---|---|---|---|---|
| Para mim, ter hábitos de consumo mais sustentáveis é | ○ | ○ | ○ | ○ | ○ |
| Para mim,ser um cidadão mais responsável é | ○ | ○ | ○ | ○ | ○ |
| Para mim, contribuir para um meio ambiente mais sustentável é | ○ | ○ | ○ | ○ | ○ |
| Para mim, viver numa sociedade limpa e num ambiente menos poluído é | ○ | ○ | ○ | ○ | ○ |
| Para mim, contribuir para a redução do desperdício de recursos naturais é | ○ | ○ | ○ | ○ | ○ |

**3.Quando opta por comprar um produto cosmético verde, em vez de um produto convencional não sustentável, sente que está a ser influenciado:** *

| | Discordo Plenamente | Discordo Moderadamente | Não Concordo nem discordo | Concordo Moderadamente | Concordo Plenamente |
|---|---|---|---|---|---|
| Pela minha familia | ○ | ○ | ○ | ○ | ○ |
| Pelos meus amigos | ○ | ○ | ○ | ○ | ○ |
| Pelos meus colegas | ○ | ○ | ○ | ○ | ○ |

**4. Quão provável é para si tomar decisões baseadas no que:** *

| | Nada Provável | Pouco Provável | Neutro | Provável | Muito Provável |
|---|---|---|---|---|---|
| A sua familia pensa que deve fazer | ○ | ○ | ○ | ○ | ○ |
| Os seus amigos pensam que deve fazer | ○ | ○ | ○ | ○ | ○ |
| Os seus colegas pensam que deve fazer | ○ | ○ | ○ | ○ | ○ |

**5. Com base no fatores seguintes, por favor, indique qual o grau de importância que os mesmos representam para o/a motivar a optar por produtos cosméticos verdes:** *

| | Nada Importante | Pouco Importante | Neutro | Importante | Muito Importante |
|---|---|---|---|---|---|
| Localização de venda dos produtos | ○ | ○ | ○ | ○ | ○ |
| A saúde e o bem-estar proporcionados pelos produtos | ○ | ○ | ○ | ○ | ○ |
| A influência da família e amigos | ○ | ○ | ○ | ○ | ○ |

**6. Com base nos fatores mencionados anteriormente, relacionados com o grau de importância que os mesmos representam para o/a motivar a optar por produtos verdes, indique o grau de concordância:** *

| | Discordo Plenamente | Discordo Moderadamente | Não concordo nem Discordo | Concordo Moderadamente | Concordo Plenamente |
|---|---|---|---|---|---|
| Para comprar um produto verde, a localização tem de ser conveniente | ○ | ○ | ○ | ○ | ○ |
| Comprar produtos verdes é importante para a minha saúde e bem-estar | ○ | ○ | ○ | ○ | ○ |
| A minha família / a empresa onde trabalho, incentivam-me a comprar produtos verdes | ○ | ○ | ○ | ○ | ○ |

**7.Numa escala de 1 a 5, indique quão fácil é para si adquirir um produto cosmético verde.** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Difícil | ○ | ○ | ○ | ○ | ○ | Extremamente Fácil |

**8. Se considerou difícil na pergunta anterior, por que motivo(s) tem dificuldade em adquirir produtos cosméticos verdes? (Ex: localização de venda, preços, etc.)**

A sua resposta

**9. Avalie o grau de facilidade que tem em ter acesso a informações sobre produtos cosméticos verdes?** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Difícil | ○ | ○ | ○ | ○ | ○ | Extremamente Fácil |

## D. Hypothesis Construction - Evaluation

**ATT1: Comprar produtos verdes é** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Mau | ○ | ○ | ○ | ○ | ○ | Extremamente Bom |

**ATT2: Comprar produtos verdes é** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Indesejável | ○ | ○ | ○ | ○ | ○ | Extremamente Desejável |

**ATT3: Comprar produtos verdes é** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Penoso | ○ | ○ | ○ | ○ | ○ | Extremamente Prazeroso |

**ATT4: Comprar produtos verdes é** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Insensato | ○ | ○ | ○ | ○ | ○ | Extremamente Sábio |

**ATT5: Comprar produtos verdes é** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Desfavorável | ○ | ○ | ○ | ○ | ○ | Extremamente Favorável |

**ATT6: Comprar produtos verdes é** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Extremamente Desagradável | ○ | ○ | ○ | ○ | ○ | Extremamente Agradável |

**PCB 1. Eu estou certo de que, caso eu queira, posso comprar produtos verdes, em vez de comprar produtos convencionais** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PBC 2. Eu tenho recursos financeiros suficientes para comprar cosméticos verdes.** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PCB 3. Eu acredito que a minha escolha de compra de produtos cosméticos verdes depende totalmente de mim** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PV 1. Eu acredito que os produtos cosméticos verdes são melhores do que os produtos cosméticos convencionais:** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PV 2. O desempenho dos produtos verdes corresponde às minhas expectativas.** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PV3. Eu considero que os produtos verdes têm um grau mais elevado de preocupação ambiental no seu processo de fabrico.** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PV 4. Compro produtos verdes porque são produtos mais amigos do ambiente.** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

**PV 5. Eu compro produtos verdes porque acredito que têm mais benefícios ambientais.** *

| | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|
| Discordo Plenamente | ○ | ○ | ○ | ○ | ○ | Concordo Plenamente |

Relativamente ao contexto social no qual está inserido, indique o grau de concordância com as afirmações que se seguem: *

| | Discordo Totalmente | Discordo Moderadamente | Não Concordo nem Discordo | Concordo Moderadamente | Concordo Plenamente |
|---|---|---|---|---|---|
| Uma grande parte das pessoas que me são importantes querem que eu compre produtos que sejam amigos do ambiente. | ○ | ○ | ○ | ○ | ○ |
| Uma grande parte das pessoas que me são importantes consideram que eu deveria adquirir produtos verdes. | ○ | ○ | ○ | ○ | ○ |

**Relativamente à intenção do comportamento de compra, por favor indique o grau de concordância com as seguintes afirmações:** *

| | Discordo Totalmente | Discordo Moderadamente | Não Concordo nem Discordo | Concordo Moderadamente | Concordo Plenamente |
|---|---|---|---|---|---|
| Vou comprar produtos verdes para uso pessoal. | ○ | ○ | ○ | ○ | ○ |
| Estou disposto a adquirir um produto verde para uso pessoal. | ○ | ○ | ○ | ○ | ○ |
| Vou fazer um esforço para comprar um produto verde. | ○ | ○ | ○ | ○ | ○ |

**Relativamente ao comportamento de compra, por favor indique o grau de concordância com as seguintes afirmações:** *

| | Discordo Plenamente | Discordo Moderadamente | Não Concordo nem Discordo | Concordo Moderadamente | Concordo Plenamente |
|---|---|---|---|---|---|
| Compro produtos verdes regularmente | ○ | ○ | ○ | ○ | ○ |
| Compro produtos verdes para as minhas necessidades do dia-a-dia | ○ | ○ | ○ | ○ | ○ |
| Comprei um produto verde nos últimos 6 meses | ○ | ○ | ○ | ○ | ○ |

## E. Demographic Informations

**1. Sexo** *

- ○ Feminino
- ○ Masculino
- ○ Prefiro não responder

**2. Idade** *

- ◯ Inferior a 18 anos
- ◯ 18 a 24 anos
- ◯ 25 a 31 anos
- ◯ 32 a 38 anos
- ◯ 39 a 45 anos
- ◯ 46 a 52 anos
- ◯ 53 a 59 anos
- ◯ 60 ou mais anos

**3. Local de Residência** *

Selecionar ▾

**4. Grau de Escolaridade (concluído)** *

- ◯ Ensino Secundário
- ◯ Licenciatura
- ◯ Pós-Graduação
- ◯ Mestrado
- ◯ Doutoramento
- ◯ Outra: _____

**5. Estado Civil** *

- ◯ Solteiro(a)
- ◯ Casado(a)
- ◯ Divorciado(a)
- ◯ Viúvo(a)
- ◯ Outra: _____

**6. Número de Filhos** *

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ Mais de 3

**7. Rendimento Líquido Mensal** *

- ◯ Inferior a 500€
- ◯ Entre 500€ a 999€
- ◯ Entre 1000€ a 1499€
- ◯ Entre 1500€ a 1999€
- ◯ Entre 2000€ a 2499€
- ◯ Entre 2500€ a 2999€
- ◯ Entre 3000€ a 3499€
- ◯ Igual ou superior a 3500€
- ◯ Prefiro não dizer

**8. Situação Profissional** *

- ◯ Estudante
- ◯ Trabalhador(a) Estudante
- ◯ Trabalhador(a) por conta própria
- ◯ Trabalhador(a) por conta de outrem
- ◯ Desempregado(a)
- ◯ Reformado(a)
- ◯ Outra: _____

**Appendix 2**| Theoretical dimensions and corresponding survey items

| Constructs | | Measuring Indicators | References |
|---|---|---|---|
| **Behavioural Beliefs (BB)** (Strongly Disagree (1)/ Strongly Agree (5)) | The decision of buying a green cosmetic product would help me to | **BB1**- To start adopting sustainable habits in daily life. | Yadav & Pathak (2017) |
| | | **BB2**- To be a more responsible citizen. | |
| | | **BB3**-To protect the environment. | |
| | | **BB4**- To live in a better society and a less polluted environment. | |
| | | **BB5**-To contribute to the reduction of natural resources waste. | |
| **Outcome Evaluations (OE)** (Not Important at All (1)/ Highly Important (5)) | | **OE1**- To me, having more sustainable consumption habits is | |
| | | **OE2**- To me, being a more responsible citizen is | |
| | | **OE3**- To me, contributing to protect the environment is | |
| | | **OE4**- To me, staying in a cleaner society and a less polluted environment is | |
| | | **OE5**- To me reducing the waste of natural resources is | |
| **Normative Beliefs (NB)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **MC1**- How likely are you to make decisions based on what your family thinks you should do? | |
| | | **MC2**- How likely are you to make decisions based on what your friends thinks you should do? | |
| | | **MC3**- How likely are you to make decisions based on what your colleagues thinks you should do? | |
| **Control Beliefs (CB)** (Not Important at All (1)/ Highly Important (5)) | | **CB1**- When I intend to buy a green product, the location where it is sold is important. | |
| | | **CB2**- When I intend to buy a green product, the health and well-being benefits it provides are important. | |
| | | **CB3**- When I intend to buy a green product, the influence of family and friends is important. | |
| **Perceived Power (PP)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **PP1**- To buy a green product, the location must be convenient. | |
| | | **PP2**- Buying green products is important for my health and well-being. | |
| | | **PP3**- My family /the company I work for encourages me to buy green products. | |
| **Attitude (ATT)** | Buying green cosmetic products is | **ATT1**- Extremely Bad (1) / Extremely Good (5). | Y. Kim & Han (2010) |
| | | **ATT2**- Extremely Undesirable (1) / Extremely Desirable (5). | |
| | | **ATT3**- Extremely Painful (1) / Extremely Enjoyable (5). | |
| | | **ATT4**- Extremely Foolish (1) / Extremely Wise (5). | |
| | | **ATT5**- Extremely Unfavourable (1) / Extremely Favourable (5). | |
| | | **ATT6**- Extremely Unpleasant (1) / Extremely Pleasant (5). | |
| **Subjective Norms (SN)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **SN1**- A large number of people who are important to me want me to purchase environmentally friendly products. | Chan & Lau (2002) |
| | | **SN2**- A large number of people who are important to me believe that I should purchase green products. | |
| **Perceived Behaviour Control (PBC)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **PBC1**- I am confident that, if I want to, I can purchase green products instead of conventional ones. | Y. Kim & Han (2010) |
| | | **PBC2**- I have sufficient financial resources to purchase green products. | |
| | | **PBC3**- I believe that my decision to purchase green cosmetic products depends entirely on me. | |
| **Willingness to Pay Premium (WPP)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **WPP1**- I would be willing to pay more for a green cosmetic product. | Kang et al. (2012) |
| | | **WPP2**- I would be willing to pay an additional percentage for green cosmetic products, in order to support organizations' efforts in remaining environmentally friendly. | |
| **Perceived Value (PV)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **PV1**- I believe that green cosmetic products are better than the conventional cosmetic products. | Y. S. Chen & Chang (2012) |
| | | **PV2**- The performance of green cosmetic products meets my expectations. | |
| | | **PV3**- I consider that green products have a higher level of environmental concern in their manufacturing process. | |
| | | **PV4**- I buy green products because they are more environmentally friendly. | |
| | | **PV5**- I buy green products because I believe they have more environmental benefits. | |
| **Purchase Intention (PI)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **PI1**- I intend to buy green products for my personal use. | Y. J. Kim et al. (2013) |
| | | **PI2**- I am prepared to purchase a green product for my personal use. | |
| | | **PI3**- I am willing to make an effort to buy a green product. | |
| **Purchase Behaviour (PB)** (Strongly Disagree (1)/ Strongly Agree (5)) | | **PB1**- I regularly purchase green products. | Wan et al. (2012) |
| | | **PB2**- I buy green products for my daily needs. | |
| | | **PB3**- I have purchased a green product in the past 6 months. | |

**Appendix 3|** Behavioural Beliefs by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Behavioural Beliefs | Masculino | 67 | 3,642 | ,9906 | ,1210 |
| | Feminino | 168 | 4,135 | ,8307 | ,0641 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Behavioural Beliefs | Variâncias iguais assumidas | 3,104 | ,079 | -3,880 | 233 | <,001 | <,001 | -,4927 | ,1270 | -,7429 | -,2425 |
| | Variâncias iguais não assumidas | | | -3,598 | 104,949 | <,001 | <,001 | -,4927 | ,1369 | -,7643 | -,2212 |

**Estatísticas de grupo**

| | Higher_Education | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Behavioural Beliefs | Ensino Secundário | 53 | 3,660 | 1,1419 | ,1569 |
| | Ensino Superior | 182 | 4,091 | ,8013 | ,0594 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Behavioural Beliefs | Variâncias iguais assumidas | 15,770 | <,001 | -3,106 | 233 | ,001 | ,002 | -,4308 | ,1387 | -,7041 | -,1575 |
| | Variâncias iguais não assumidas | | | -2,569 | 67,581 | ,006 | ,012 | -,4308 | ,1677 | -,7656 | -,0961 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Behavioural Beliefs | Com base em média | ,489 | 2 | 232 | ,614 |
| | Com base em mediana | ,265 | 2 | 232 | ,767 |
| | Com base em mediana e com gl ajustado | ,265 | 2 | 204,379 | ,767 |
| | Com base em média aparada | ,329 | 2 | 232 | ,720 |

**ANOVA**

Behavioural Beliefs

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,626 | 2 | ,313 | ,380 | ,684 |
| Nos grupos | 191,006 | 232 | ,823 | | |
| Total | 191,632 | 234 | | | |

**Descritivas**

Behavioural Beliefs

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 4,013 | ,7939 | ,1025 | 3,808 | 4,218 | 1,6 | 5,0 |
| 25 a 31 anos | 49 | 3,894 | ,8207 | ,1172 | 3,658 | 4,130 | 1,8 | 5,0 |
| > 31 anos | 126 | 4,024 | ,9859 | ,0878 | 3,850 | 4,198 | 1,0 | 5,0 |
| Total | 235 | 3,994 | ,9050 | ,0590 | 3,878 | 4,110 | 1,0 | 5,0 |

**Comparações múltiplas**

Variável dependente: Behavioural Beliefs

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | ,1195 | ,1557 | ,724 | -,251 | ,490 |
| | > 31 anos | -,0105 | ,1350 | ,997 | -,330 | ,309 |
| 25 a 31 anos | 18 a 24 anos | -,1195 | ,1557 | ,724 | -,490 | ,251 |
| | > 31 anos | -,1299 | ,1465 | ,650 | -,478 | ,218 |
| > 31 anos | 18 a 24 anos | ,0105 | ,1350 | ,997 | -,309 | ,330 |
| | 25 a 31 anos | ,1299 | ,1465 | ,650 | -,218 | ,478 |

**Appendix 4|** Outcome Evaluation by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Outcome Evaluations | Masculino | 67 | 3,964 | ,9335 | ,1140 |
| | Feminino | 168 | 4,324 | ,7041 | ,0543 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Outcome Evaluations | Variâncias iguais assumidas | 2,729 | ,100 | -3,207 | 233 | <,001 | ,002 | -,3596 | ,1121 | -,5805 | -,1387 |
| | Variâncias iguais não assumidas | | | -2,847 | 97,363 | ,003 | ,005 | -,3596 | ,1263 | -,6103 | -,1089 |

**Estatísticas de grupo**

| | Higher_Education | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Outcome Evaluations | Ensino Secundário | 53 | 3,909 | 1,0111 | ,1389 |
| | Ensino Superior | 182 | 4,312 | ,6920 | ,0513 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Outcome Evaluations | Variâncias iguais assumidas | 9,804 | ,002 | -3,330 | 233 | <,001 | ,001 | -,4027 | ,1209 | -,6409 | -,1644 |
| | Variâncias iguais não assumidas | | | -2,720 | 66,795 | ,004 | ,008 | -,4027 | ,1481 | -,6982 | -,1071 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Outcome Evaluations | Com base em média | ,328 | 2 | 232 | ,721 |
| | Com base em mediana | ,201 | 2 | 232 | ,818 |
| | Com base em mediana e com gl ajustado | ,201 | 2 | 212,749 | ,818 |
| | Com base em média aparada | ,153 | 2 | 232 | ,859 |

**ANOVA**

Outcome Evaluations

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,865 | 2 | ,433 | ,689 | ,503 |
| Nos grupos | 145,628 | 232 | ,628 | | |
| Total | 146,494 | 234 | | | |

**Descritivas**

Outcome Evaluations

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 4,217 | ,7190 | ,0928 | 4,031 | 4,402 | 1,6 | 5,0 |
| 25 a 31 anos | 49 | 4,110 | ,7013 | ,1002 | 3,909 | 4,312 | 2,0 | 5,0 |
| > 31 anos | 126 | 4,267 | ,8557 | ,0762 | 4,116 | 4,418 | 1,0 | 5,0 |
| Total | 235 | 4,221 | ,7912 | ,0516 | 4,120 | 4,323 | 1,0 | 5,0 |

**Comparações múltiplas**

Variável dependente: Outcome Evaluations

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | ,1065 | ,1366 | ,716 | -,218 | ,431 |
| | > 31 anos | -,0500 | ,1201 | ,909 | -,335 | ,235 |
| 25 a 31 anos | 18 a 24 anos | -,1065 | ,1366 | ,716 | -,431 | ,218 |
| | > 31 anos | -,1565 | ,1259 | ,431 | -,456 | ,143 |
| > 31 anos | 18 a 24 anos | ,0500 | ,1201 | ,909 | -,235 | ,335 |
| | 25 a 31 anos | ,1565 | ,1259 | ,431 | -,143 | ,456 |

**Appendix 5|** Normative Beliefs by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Normative Beliefs | Masculino | 67 | 2,6616915423 | 1,1495754410 | ,14044299288 |
| | Feminino | 168 | 2,7658730159 | 1,1647743558 | ,08986429252 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Normative Beliefs | Variâncias iguais assumidas | ,348 | ,556 | -,621 | 233 | ,268 | ,535 | -,1041814736 | ,16768067982 | -,4345455464 | ,22618259920 |
| | Variâncias iguais não assumidas | | | -,625 | 122,962 | ,267 | ,533 | -,1041814736 | ,16673279617 | -,4342198455 | ,22585689831 |

**Estatísticas de grupo**

| | Higher_Education | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Normative Beliefs | Ensino Secundário | 53 | 2,6163522013 | 1,1664765897 | ,16022788219 |
| | Ensino Superior | 182 | 2,7710622711 | 1,1576601451 | ,08581147914 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Normative Beliefs | Variâncias iguais assumidas | ,063 | ,802 | -,855 | 233 | ,197 | ,394 | -,1547100698 | ,18100104532 | -,5113178947 | ,20189775509 |
| | Variâncias iguais não assumidas | | | -,851 | 84,119 | ,199 | ,397 | -,1547100698 | ,18175968801 | -,5161516469 | ,20673150727 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Normative Beliefs | Com base em média | 1,571 | 2 | 232 | ,210 |
| | Com base em mediana | 1,244 | 2 | 232 | ,290 |
| | Com base em mediana e com gl ajustado | 1,244 | 2 | 223,296 | ,290 |
| | Com base em média aparada | 1,754 | 2 | 232 | ,175 |

**ANOVA**

Normative Beliefs

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | 3,153 | 2 | 1,576 | 1,175 | ,311 |
| Nos grupos | 311,156 | 232 | 1,341 | | |
| Total | 314,309 | 234 | | | |

**Descritivas**

Normative Beliefs

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 2,8388888889 | 1,0241742191 | ,13222032314 | 2,5743166334 | 3,1034611444 | 1,0000000000 | 4,6666666667 |
| 25 a 31 anos | 49 | 2,5170068027 | 1,1923001900 | ,17032859857 | 2,1745382022 | 2,8594754032 | 1,0000000000 | 5,0000000000 |
| > 31 anos | 126 | 2,7724867725 | 1,2034401014 | ,10721096535 | 2,5603029662 | 2,9846705788 | 1,0000000000 | 5,0000000000 |
| Total | 235 | 2,7361702128 | 1,1589658296 | ,07560259464 | 2,5872214855 | 2,8851189400 | 1,0000000000 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Normative Beliefs

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | ,32188208617 | ,21562477905 | ,299 | -,1915064267 | ,83527059902 |
| | > 31 anos | ,06640211640 | ,17022457209 | ,920 | -,3370165705 | ,46982080333 |
| 25 a 31 anos | 18 a 24 anos | -,3218820862 | ,21562477905 | ,299 | -,8352705990 | ,19150642668 |
| | > 31 anos | -,2554799698 | ,20126108064 | ,416 | -,7352650618 | ,22430512224 |
| > 31 anos | 18 a 24 anos | -,0664021164 | ,17022457209 | ,920 | -,4698208033 | ,33701657053 |
| | 25 a 31 anos | ,25547996977 | ,20126108064 | ,416 | -,2243051222 | ,73526506177 |

**Appendix 6|** Motivation to Comply by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Motivation to Comply | Masculino | 67 | 2,8407960199 | ,98705119615 | ,12058749618 |
| | Feminino | 168 | 2,9960317460 | ,96993260340 | ,07483192497 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Motivation to Comply | Variâncias iguais assumidas | ,389 | ,533 | -1,102 | 233 | ,136 | ,272 | -,1552357261 | ,14085193856 | -,4327418773 | ,12227042504 |
| | Variâncias iguais não assumidas | | | -1,094 | 119,610 | ,138 | ,276 | -,1552357261 | ,14191955902 | -,4362359034 | ,12576445111 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Motivation to Comply | Ensino Secundário | 53 | 2,7484276730 | 1,0230373337 | ,14052498510 |
| | Ensino Superior | 182 | 3,0109890110 | ,95567902825 | ,07083964266 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Motivation to Comply | Variâncias iguais assumidas | 1,451 | ,230 | -1,732 | 233 | ,042 | ,085 | -,2625613380 | ,15157647330 | -,5611969418 | ,03607426572 |
| | Variâncias iguais não assumidas | | | -1,668 | 80,297 | ,050 | ,099 | -,2625613380 | ,15737066566 | -,5757211473 | ,05059847121 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Motivation to Comply | Com base em média | ,779 | 2 | 232 | ,460 |
| | Com base em mediana | ,551 | 2 | 232 | ,577 |
| | Com base em mediana e com gl ajustado | ,551 | 2 | 228,705 | ,577 |
| | Com base em média aparada | ,760 | 2 | 232 | ,469 |

**ANOVA**

Motivation to Comply

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,709 | 2 | ,354 | ,371 | ,691 |
| Nos grupos | 221,856 | 232 | ,956 | | |
| Total | 222,565 | 234 | | | |

**Descritivas**

Motivation to Comply

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 2,9500000000 | ,90992642653 | ,11747099654 | 2,7149410789 | 3,1850589211 | 1,0000000000 | 4,6666666667 |
| 25 a 31 anos | 49 | 3,0544217687 | ,94611030887 | ,13515861555 | 2,7826671585 | 3,3261763789 | 1,0000000000 | 4,6666666667 |
| > 31 anos | 126 | 2,9126984127 | 1,0199595386 | ,09086521766 | 2,7328648697 | 3,0925319557 | 1,0000000000 | 5,0000000000 |
| Total | 235 | 2,9517730496 | ,97525920071 | ,06361889551 | 2,8264340509 | 3,0771120484 | 1,0000000000 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Motivation to Comply

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | -,1044217687 | ,17907341061 | ,829 | -,5303930002 | ,32154946279 |
| | > 31 anos | ,03730158730 | ,14851236584 | ,966 | -,3148342023 | ,38943737688 |
| 25 a 31 anos | 18 a 24 anos | ,10442176871 | ,17907341061 | ,829 | -,3215494628 | ,53039300021 |
| | > 31 anos | ,14172335601 | ,16286294587 | ,660 | -,2461298624 | ,52957657438 |
| > 31 anos | 18 a 24 anos | -,0373015873 | ,14851236584 | ,966 | -,3894373769 | ,31483420227 |
| | 25 a 31 anos | -,1417233560 | ,16286294587 | ,660 | -,5295765744 | ,24612986236 |

**Appendix 7|** Control Beliefs by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Control Beliefs | Masculino | 67 | 3,3781094527 | ,87789065069 | ,10725141300 |
| | Feminino | 168 | 3,7757936508 | ,65610092838 | ,05061928558 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Control Beliefs | Variâncias iguais assumidas | 5,173 | ,024 | -3,792 | 233 | <,001 | <,001 | -,3976841981 | ,10487731888 | -,6043132399 | -,1910551562 |
| | Variâncias iguais não assumidas | | | -3,353 | 96,781 | <,001 | ,001 | -,3976841981 | ,11859670174 | -,6330725618 | -,1622958343 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Control Beliefs | Ensino Secundário | 53 | 3,2830188679 | ,96829267847 | ,13300522838 |
| | Ensino Superior | 182 | 3,7728937729 | ,62949621936 | ,04666136424 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Control Beliefs | Variâncias iguais assumidas | 16,639 | <,001 | -4,365 | 233 | <,001 | <,001 | -,4898749050 | ,11223740207 | -,7110047650 | -,2687450449 |
| | Variâncias iguais não assumidas | | | -3,475 | 65,304 | <,001 | <,001 | -,4898749050 | ,14095273566 | -,7713521548 | -,2083976551 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Control Beliefs | Com base em média | ,807 | 2 | 232 | ,448 |
| | Com base em mediana | ,589 | 2 | 232 | ,556 |
| | Com base em mediana e com gl ajustado | ,589 | 2 | 219,156 | ,556 |
| | Com base em média aparada | ,585 | 2 | 232 | ,558 |

**ANOVA**

Control Beliefs

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,349 | 2 | ,174 | ,311 | ,733 |
| Nos grupos | 129,980 | 232 | ,560 | | |
| Total | 130,329 | 234 | | | |

**Descritivas**

Control Beliefs

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,7111111111 | ,65947153033 | ,08513740847 | 3,5407515503 | 3,8814706720 | 1,6666666667 | 5,0000000000 |
| 25 a 31 anos | 49 | 3,6938775510 | ,67985815069 | ,09712259296 | 3,4985994899 | 3,8891556122 | 2,0000000000 | 5,0000000000 |
| > 31 anos | 126 | 3,6269841270 | ,81060432091 | ,07221437250 | 3,4840629213 | 3,7699053326 | 1,0000000000 | 5,0000000000 |
| Total | 235 | 3,6624113475 | ,74629878189 | ,04868316463 | 3,5664980334 | 3,7583246617 | 1,0000000000 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Control Beliefs

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% Limite inferior | Limite superior |
|---|---|---|---|---|---|---|
| 18 a 24 anos | 25 a 31 anos | ,01723356009 | ,12915562854 | ,990 | -,2899781796 | ,32444529980 |
| | > 31 anos | ,08412698413 | ,11163912360 | ,732 | -,1803315869 | ,34858555518 |
| 25 a 31 anos | 18 a 24 anos | -,0172335601 | ,12915562854 | ,990 | -,3244452998 | ,28997817961 |
| | > 31 anos | ,06689342404 | ,12102773921 | ,845 | -,2208949000 | ,35468174805 |
| > 31 anos | 18 a 24 anos | -,0841269841 | ,11163912360 | ,732 | -,3485855552 | ,18033158693 |
| | 25 a 31 anos | -,0668934240 | ,12102773921 | ,845 | -,3546817480 | ,22089489997 |

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Perceived Power | Masculino | 67 | 3,5174129353 | ,67739743118 | ,08275726778 |
| | Feminino | 168 | 3,6071428571 | ,66398806049 | ,05122779103 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Perceived Power | Variâncias iguais assumidas | ,308 | ,580 | -,930 | 233 | ,177 | ,353 | -,0897299218 | ,09649332009 | -,2798408294 | ,10038098574 |
| | Variâncias iguais não assumidas | | | -,922 | 119,345 | ,179 | ,358 | -,0897299218 | ,09732960466 | -,2824465447 | ,10298670110 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Perceived Power | Ensino Secundário | 53 | 3,5408805031 | ,63456834745 | ,08716466607 |
| | Ensino Superior | 182 | 3,5934065934 | ,67817361670 | ,05026957300 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Perceived Power | Variâncias iguais assumidas | ,002 | ,965 | -,503 | 233 | ,308 | ,615 | -,0525260903 | ,10437203649 | -,2581596260 | ,15310744543 |
| | Variâncias iguais não assumidas | | | -,522 | 89,499 | ,301 | ,603 | -,0525260903 | ,10062161289 | -,2524437311 | ,14739155053 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Perceived Power | Com base em média | ,487 | 2 | 232 | ,615 |
| | Com base em mediana | ,859 | 2 | 232 | ,425 |
| | Com base em mediana e com gl ajustado | ,859 | 2 | 228,954 | ,425 |
| | Com base em média aparada | ,554 | 2 | 232 | ,575 |

**ANOVA**

Perceived Power

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,600 | 2 | ,300 | ,672 | ,512 |
| Nos grupos | 103,697 | 232 | ,447 | | |
| Total | 104,298 | 234 | | | |

**Descritivas**

Perceived Power

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média Limite inferior | Limite superior | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| 18 a 24 anos | 60 | 3,5277777778 | ,61766728001 | ,07974050297 | 3,3682173999 | 3,6873381557 | 2,0000000000 | 4,6666666667 |
| 25 a 31 anos | 49 | 3,6734693878 | ,71844029855 | ,10263432836 | 3,4671092398 | 3,8798295357 | 2,0000000000 | 5,0000000000 |
| > 31 anos | 126 | 3,5714285714 | ,67178983864 | ,05984779553 | 3,4529823564 | 3,6898747865 | 1,3333333333 | 5,0000000000 |
| Total | 235 | 3,5815602837 | ,66762070307 | ,04355077268 | 3,4957585703 | 3,6673619971 | 1,3333333333 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Perceived Power

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | -,1456916100 | ,12997058580 | ,504 | -,4551405762 | ,16375735627 |
| | > 31 anos | -,0436507937 | ,09970108546 | ,900 | -,2801283707 | ,19282678338 |
| 25 a 31 anos | 18 a 24 anos | ,14569160998 | ,12997058580 | ,504 | -,1637573563 | ,45514057622 |
| | > 31 anos | ,10204081633 | ,11880893901 | ,668 | -,1815232066 | ,38560483926 |
| > 31 anos | 18 a 24 anos | ,04365079365 | ,09970108546 | ,900 | -,1928267834 | ,28012837068 |
| | 25 a 31 anos | -,1020408163 | ,11880893901 | ,668 | -,3856048393 | ,18152320661 |

**Appendix 8|** Perceived Power by Gender, Age and Academic Qualifications

**Appendix 9|** Attitudes by Gender, Age and Academic Quailifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Attitudes | Masculino | 67 | 3,9054726368 | ,69584135095 | ,08501055121 |
| | Feminino | 168 | 3,8085317460 | ,62697190748 | ,04837193283 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Attitudes | Variâncias iguais assumidas | 1,027 | ,312 | 1,037 | 233 | ,150 | ,301 | ,09694089078 | ,09351832471 | -,0873086880 | ,28119046959 |
| | Variâncias iguais não assumidas | | | ,991 | 111,056 | ,162 | ,324 | ,09694089078 | ,09780919027 | -,0968734755 | ,29075525702 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Attitudes | Ensino Secundário | 53 | 3,8773584906 | ,69656586146 | ,09568067956 |
| | Ensino Superior | 182 | 3,8241758242 | ,63379484850 | ,04697999984 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Attitudes | Variâncias iguais assumidas | 1,347 | ,247 | ,526 | 233 | ,300 | ,600 | ,05318266639 | ,10119452094 | -,1461905358 | ,25255586858 |
| | Variâncias iguais não assumidas | | | ,499 | 78,780 | ,310 | ,619 | ,05318266639 | ,10659227376 | -,1589931523 | ,26535848504 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Attitudes | Com base em média | 1,282 | 2 | 232 | ,279 |
| | Com base em mediana | ,905 | 2 | 232 | ,406 |
| | Com base em mediana e com gl ajustado | ,905 | 2 | 214,654 | ,406 |
| | Com base em média aparada | 1,410 | 2 | 232 | ,246 |

**ANOVA**

Attitudes

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,593 | 2 | ,296 | ,705 | ,495 |
| Nos grupos | 97,461 | 232 | ,420 | | |
| Total | 98,054 | 234 | | | |

**Descritivas**

Attitudes

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,8638888889 | ,55105759187 | ,07114122920 | 3,7215356181 | 4,0062421597 | 2,8333333333 | 5,0000000000 |
| 25 a 31 anos | 49 | 3,9149659864 | ,62372318559 | ,08910331223 | 3,7358117698 | 4,0941202030 | 2,1666666667 | 5,0000000000 |
| > 31 anos | 126 | 3,7923280423 | ,69783363440 | ,06216796126 | 3,6692899314 | 3,9153661533 | 2,1666666667 | 5,0000000000 |
| Total | 235 | 3,8361702128 | ,64732739277 | ,04222698308 | 3,7529765682 | 3,9193638573 | 2,1666666667 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Attitudes

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | -,0510770975 | ,11401962437 | ,895 | -,3224810214 | ,22032682640 |
| | > 31 anos | ,07156084656 | ,09447713956 | ,730 | -,1521812090 | ,29530290211 |
| 25 a 31 anos | 18 a 24 anos | ,05107709751 | ,11401962437 | ,895 | -,2203268264 | ,32248102141 |
| | > 31 anos | ,12263794407 | ,10864739140 | ,499 | -,1359562624 | ,38123215056 |
| > 31 anos | 18 a 24 anos | -,0715608466 | ,09447713956 | ,730 | -,2953029021 | ,15218120899 |
| | 25 a 31 anos | -,1226379441 | ,10864739140 | ,499 | -,3812321506 | ,13595626242 |

**Appendix 10|** Subjective Norms by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Subjective Norms | Masculino | 67 | 3,940 | ,6125 | ,0748 |
| | Feminino | 168 | 3,768 | ,6854 | ,0529 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Subjective Norms | Variâncias iguais assumidas | 4,741 | ,030 | 1,793 | 233 | ,037 | ,074 | ,1724 | ,0962 | -,0170 | ,3619 |
| | Variâncias iguais não assumidas | | | 1,882 | 135,060 | ,031 | ,062 | ,1724 | ,0916 | -,0088 | ,3537 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Subjective Norms | Ensino Secundário | 53 | 3,849 | ,6399 | ,0879 |
| | Ensino Superior | 182 | 3,808 | ,6783 | ,0503 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Subjective Norms | Variâncias iguais assumidas | ,859 | ,355 | ,396 | 233 | ,346 | ,693 | ,0414 | ,1046 | -,1646 | ,2474 |
| | Variâncias iguais não assumidas | | | ,408 | 88,860 | ,342 | ,684 | ,0414 | ,1013 | -,1598 | ,2426 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Subjective Norms | Com base em média | ,193 | 2 | 232 | ,825 |
| | Com base em mediana | ,083 | 2 | 232 | ,921 |
| | Com base em mediana e com gl ajustado | ,083 | 2 | 228,659 | ,921 |
| | Com base em média aparada | ,130 | 2 | 232 | ,878 |

**ANOVA**

Subjective Norms

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | 1,095 | 2 | ,548 | 1,227 | ,295 |
| Nos grupos | 103,537 | 232 | ,446 | | |
| Total | 104,632 | 234 | | | |

**Descritivas**

Subjective Norms

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,933 | ,7217 | ,0932 | 3,747 | 4,120 | 2,0 | 5,0 |
| 25 a 31 anos | 49 | 3,786 | ,6038 | ,0863 | 3,612 | 3,959 | 2,5 | 5,0 |
| > 31 anos | 126 | 3,774 | ,6652 | ,0593 | 3,657 | 3,891 | 2,0 | 5,0 |
| Total | 235 | 3,817 | ,6687 | ,0436 | 3,731 | 3,903 | 2,0 | 5,0 |

**Comparações múltiplas**

Variável dependente: Subjective Norms

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | ,1476 | ,1270 | ,478 | -,154 | ,449 |
| | > 31 anos | ,1595 | ,1104 | ,322 | -,103 | ,422 |
| 25 a 31 anos | 18 a 24 anos | -,1476 | ,1270 | ,478 | -,449 | ,154 |
| | > 31 anos | ,0119 | ,1047 | ,993 | -,237 | ,261 |
| > 31 anos | 18 a 24 anos | -,1595 | ,1104 | ,322 | -,422 | ,103 |
| | 25 a 31 anos | -,0119 | ,1047 | ,993 | -,261 | ,237 |

**Appendix 11|** Perceived Behavioural Control by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Perceived Behavioural Control | Masculino | 67 | 3,2985074627 | ,83713140209 | ,10227187825 |
| | Feminino | 168 | 3,4206349206 | ,72887238281 | ,05623372518 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Perceived Behavioural Control | Variâncias iguais assumidas | 1,717 | ,191 | -1,111 | 233 | ,134 | ,268 | -,1221274579 | ,10997278069 | -,3387955664 | ,09454065052 |
| | Variâncias iguais não assumidas | | | -1,046 | 108,037 | ,149 | ,298 | -,1221274579 | ,11671233409 | -,3534706422 | ,10921572633 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Perceived Behavioural Control | Ensino Secundário | 53 | 3,2327044025 | ,91890148477 | ,12622082616 |
| | Ensino Superior | 182 | 3,4304029304 | ,70583202998 | ,05231975099 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Perceived Behavioural Control | Variâncias iguais assumidas | 5,567 | ,019 | -1,670 | 233 | ,048 | ,096 | -,1976985279 | ,11840421853 | -,4309782350 | ,03558117918 |
| | Variâncias iguais não assumidas | | | -1,447 | 70,804 | ,076 | ,152 | -,1976985279 | ,13663474412 | -,4701535592 | ,07475650346 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Perceived Behavioural Control | Com base em média | ,323 | 2 | 232 | ,724 |
| | Com base em mediana | ,173 | 2 | 232 | ,842 |
| | Com base em mediana e com gl ajustado | ,173 | 2 | 229,362 | ,842 |
| | Com base em média aparada | ,268 | 2 | 232 | ,765 |

**ANOVA**

Perceived Behavioural Control

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | 1,266 | 2 | ,633 | 1,092 | ,337 |
| Nos grupos | 134,421 | 232 | ,579 | | |
| Total | 135,686 | 234 | | | |

**Descritivas**

Perceived Behavioural Control

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,2777777778 | ,78153518022 | ,10089575792 | 3,0758858325 | 3,4796697230 | 1,0000000000 | 4,6666666667 |
| 25 a 31 anos | 49 | 3,3537414966 | ,71817722996 | ,10259674714 | 3,1474569108 | 3,5600260824 | 1,0000000000 | 4,6666666667 |
| > 31 anos | 126 | 3,4497354497 | ,76746909928 | ,06837158153 | 3,3144196043 | 3,5850512951 | 1,3333333333 | 5,0000000000 |
| Total | 235 | 3,3858156028 | ,76148205699 | ,04967361229 | 3,2879509546 | 3,4836802510 | 1,0000000000 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Perceived Behavioural Control

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | -,0759637188 | ,14389595717 | ,858 | -,4180405369 | ,26611309922 |
| | > 31 anos | -,1719576720 | ,12187955992 | ,339 | -,4613783667 | ,11746302282 |
| 25 a 31 anos | 18 a 24 anos | ,07596371882 | ,14389595717 | ,858 | -,2661130992 | ,41804053686 |
| | > 31 anos | -,0959939531 | ,12329138528 | ,717 | -,3896482616 | ,19766035534 |
| > 31 anos | 18 a 24 anos | ,17195767196 | ,12187955992 | ,339 | -,1174630228 | ,46137836674 |
| | 25 a 31 anos | ,09599395314 | ,12329138528 | ,717 | -,1976603553 | ,38964826161 |

**Appendix 12|** Willingness to Pay Premium by Gender, Age and Academic Qualification

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Willingness to Pay Premium | Masculino | 67 | 3,0024875622 | ,86285707844 | ,10541476983 |
| | Feminino | 168 | 2,9027777778 | ,73939984534 | ,05704593655 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Willingness to Pay Premium | Variâncias iguais assumidas | 1,093 | ,297 | ,889 | 233 | ,187 | ,375 | ,09970978441 | ,11217818562 | -,1213034076 | ,32072297639 |
| | Variâncias iguais não assumidas | | | ,832 | 106,700 | ,204 | ,407 | ,09970978441 | ,11986038785 | -,1379070926 | ,33732666142 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Willingness to Pay Premium | Ensino Secundário | 53 | 3,1132075472 | ,72925262124 | ,10017055131 |
| | Ensino Superior | 182 | 2,8782051282 | ,78309013233 | ,05804650255 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Willingness to Pay Premium | Variâncias iguais assumidas | 1,877 | ,172 | 1,952 | 233 | ,026 | ,052 | ,23500241896 | ,12040383366 | -,0022169250 | ,47222176295 |
| | Variâncias iguais não assumidas | | | 2,030 | 89,874 | ,023 | ,045 | ,23500241896 | ,11577364039 | ,00499349762 | ,46501134031 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Willingness to Pay Premium | Com base em média | 1,637 | 2 | 232 | ,197 |
| | Com base em mediana | 1,718 | 2 | 232 | ,182 |
| | Com base em mediana e com gl ajustado | 1,718 | 2 | 230,371 | ,182 |
| | Com base em média aparada | 1,687 | 2 | 232 | ,187 |

**ANOVA**

Willingness to Pay Premium

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | ,535 | 2 | ,268 | ,442 | ,643 |
| Nos grupos | 140,381 | 232 | ,605 | | |
| Total | 140,916 | 234 | | | |

**Descritivas**

Willingness to Pay Premium

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 2,9000000000 | ,74231784402 | ,09583282158 | 2,7082389669 | 3,0917610331 | 1,0000000000 | 5,0000000000 |
| 25 a 31 anos | 49 | 3,0238095238 | ,72727930342 | ,10389704335 | 2,8149105172 | 3,2327085304 | 1,0000000000 | 4,6666666667 |
| > 31 anos | 126 | 2,9100529101 | ,81230831411 | ,07236617628 | 2,7668312659 | 3,0532745542 | 1,0000000000 | 5,0000000000 |
| Total | 235 | 2,9312056738 | ,77601767436 | ,05062181142 | 2,8314729276 | 3,0309384199 | 1,0000000000 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Willingness to Pay Premium

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | -,1238095238 | ,14134541135 | ,657 | -,4599156289 | ,21229658126 |
| | > 31 anos | -,0100529101 | ,12008660692 | ,996 | -,2948630599 | ,27475723984 |
| 25 a 31 anos | 18 a 24 anos | ,12380952381 | ,14134541135 | ,657 | -,2122965813 | ,45991562888 |
| | > 31 anos | ,11375661376 | ,12661539830 | ,643 | -,1876114428 | ,41512467035 |
| > 31 anos | 18 a 24 anos | ,01005291005 | ,12008660692 | ,996 | -,2747572398 | ,29486305995 |
| | 25 a 31 anos | -,1137566138 | ,12661539830 | ,643 | -,4151246703 | ,18761144283 |

**Appendix 13|** Perceived Value by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Perceived Value | Masculino | 67 | 3,152 | ,7279 | ,0889 |
| | Feminino | 168 | 3,300 | ,7133 | ,0550 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Perceived Value | Variâncias iguais assumidas | ,004 | ,948 | -1,425 | 233 | ,078 | ,155 | -,1478 | ,1037 | -,3520 | ,0565 |
| | Variâncias iguais não assumidas | | | -1,413 | 119,314 | ,080 | ,160 | -,1478 | ,1046 | -,3548 | ,0593 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Perceived Value | Ensino Secundário | 53 | 3,204 | ,7966 | ,1094 |
| | Ensino Superior | 182 | 3,274 | ,6964 | ,0516 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Perceived Value | Variâncias iguais assumidas | 1,849 | ,175 | -,622 | 233 | ,267 | ,535 | -,0699 | ,1124 | -,2913 | ,1515 |
| | Variâncias iguais não assumidas | | | -,577 | 76,628 | ,283 | ,565 | -,0699 | ,1210 | -,3108 | ,1711 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Perceived Value | Com base em média | 1,654 | 2 | 232 | ,194 |
| | Com base em mediana | 1,701 | 2 | 232 | ,185 |
| | Com base em mediana e com gl ajustado | 1,701 | 2 | 230,659 | ,185 |
| | Com base em média aparada | 1,570 | 2 | 232 | ,210 |

**ANOVA**

Perceived Value

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | 3,794 | 2 | 1,897 | 3,755 | ,025 |
| Nos grupos | 117,179 | 232 | ,505 | | |
| Total | 120,973 | 234 | | | |

**Descritivas**

Perceived Value

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,097 | ,6913 | ,0893 | 2,918 | 3,275 | 1,4 | 4,8 |
| 25 a 31 anos | 49 | 3,155 | ,6195 | ,0885 | 2,977 | 3,333 | 1,8 | 5,0 |
| > 31 anos | 126 | 3,375 | ,7513 | ,0669 | 3,242 | 3,507 | 1,6 | 5,0 |
| Total | 235 | 3,258 | ,7190 | ,0469 | 3,165 | 3,350 | 1,4 | 5,0 |

**Comparações múltiplas**

Variável dependente: Perceived Value

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | -,0584 | ,1257 | ,888 | -,357 | ,240 |
| | > 31 anos | -,2779* | ,1116 | ,037 | -,543 | -,013 |
| 25 a 31 anos | 18 a 24 anos | ,0584 | ,1257 | ,888 | -,240 | ,357 |
| | > 31 anos | -,2195 | ,1110 | ,123 | -,483 | ,044 |
| > 31 anos | 18 a 24 anos | ,2779* | ,1116 | ,037 | ,013 | ,543 |
| | 25 a 31 anos | ,2195 | ,1110 | ,123 | -,044 | ,483 |

*. A diferença média é significativa no nível 0.05.

**Appendix 14**| Purchase Intention by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Purchase Intention | Masculino | 67 | 3,8009950249 | ,89529202860 | ,10937732967 |
| | Feminino | 168 | 3,7400793651 | ,83854703985 | ,06469530867 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Purchase Intention | Variâncias iguais assumidas | ,082 | ,774 | ,493 | 233 | ,311 | ,622 | ,06091565980 | ,12354056570 | -,1824836661 | ,30431498572 |
| | Variâncias iguais não assumidas | | | ,479 | 114,711 | ,316 | ,633 | ,06091565980 | ,12707825625 | -,1908086607 | ,31263998033 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Purchase Intention | Ensino Secundário | 53 | 3,8742138365 | ,74886356949 | ,10286432223 |
| | Ensino Superior | 182 | 3,7234432234 | ,88077473717 | ,06528736721 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Purchase Intention | Variâncias iguais assumidas | 5,090 | ,025 | 1,132 | 233 | ,129 | ,259 | ,15077061303 | ,13315666662 | -,1115743318 | ,41311555790 |
| | Variâncias iguais não assumidas | | | 1,238 | 97,775 | ,109 | ,219 | ,15077061303 | ,12183394069 | -,0910118302 | ,39255305629 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Purchase Intention | Com base em média | 4,573 | 2 | 232 | ,011 |
| | Com base em mediana | 4,799 | 2 | 232 | ,009 |
| | Com base em mediana e com gl ajustado | 4,799 | 2 | 228,773 | ,009 |
| | Com base em média aparada | 4,621 | 2 | 232 | ,011 |

**ANOVA**

Purchase Intention

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | 2,485 | 2 | 1,243 | 1,716 | ,182 |
| Nos grupos | 168,023 | 232 | ,724 | | |
| Total | 170,508 | 234 | | | |

**Descritivas**

Purchase Intention

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,9111111111 | ,68303815222 | ,08817984628 | 3,7346636463 | 4,0875585760 | 2,3333333333 | 5,0000000000 |
| 25 a 31 anos | 49 | 3,6122448980 | ,86961820799 | ,12423117257 | 3,3624613844 | 3,8620284115 | 1,3333333333 | 5,0000000000 |
| > 31 anos | 126 | 3,7407407407 | ,91300615930 | ,08133705334 | 3,5797646175 | 3,9017168640 | 1,3333333333 | 5,0000000000 |
| Total | 235 | 3,7574468085 | ,85361924652 | ,05568397982 | 3,6477408128 | 3,8671528042 | 1,3333333333 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Purchase Intention

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | ,29886621315 | ,15234523139 | ,128 | -,0641898638 | ,66192229014 |
| | > 31 anos | ,17037037037 | ,11996416771 | ,333 | -,1135979177 | ,45433865843 |
| 25 a 31 anos | 18 a 24 anos | -,2988662132 | ,15234523139 | ,128 | -,6619222901 | ,06418986384 |
| | > 31 anos | -,1284958428 | ,14848939519 | ,663 | -,4822629691 | ,22527128358 |
| > 31 anos | 18 a 24 anos | -,1703703704 | ,11996416771 | ,333 | -,4543386584 | ,11359791769 |
| | 25 a 31 anos | ,12849584278 | ,14848939519 | ,663 | -,2252712836 | ,48226296915 |

**Appendix 15**| Purchase Behaviour by Gender, Age and Academic Qualifications

**Estatísticas de grupo**

| | Gender | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Purchase Behaviour | Masculino | 67 | 3,8208955224 | ,87872029352 | ,10735277000 |
| | Feminino | 168 | 3,7321428571 | ,83682615602 | ,06456253960 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Purchase Behaviour | Variâncias iguais assumidas | ,195 | ,659 | ,724 | 233 | ,235 | ,470 | ,08875266525 | ,12265916179 | -,1529101208 | ,33041545129 |
| | Variâncias iguais não assumidas | | | ,708 | 116,361 | ,240 | ,480 | ,08875266525 | ,12527146023 | -,1593551345 | ,33686046495 |

**Estatísticas de grupo**

| | Academic Qualifications | N | Média | Desvio Padrão | Erro de média padrão |
|---|---|---|---|---|---|
| Purchase Behaviour | Ensino Secundário | 53 | 3,8867924528 | ,79244131123 | ,10885018541 |
| | Ensino Superior | 182 | 3,7197802198 | ,86198591529 | ,06389464707 |

**Teste de amostras independentes**

| | | Teste de Levene para igualdade de variâncias | | teste-t para Igualdade de Médias | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Significância | | | | 95% Intervalo de Confiança da Diferença | |
| | | Z | Sig. | t | df | Unilateral p | Bilateral p | Diferença média | Erro de diferença padrão | Inferior | Superior |
| Purchase Behaviour | Variâncias iguais assumidas | ,841 | ,360 | 1,263 | 233 | ,104 | ,208 | ,16701223305 | ,13219754630 | -,0934430553 | ,42746752137 |
| | Variâncias iguais não assumidas | | | 1,323 | 90,908 | ,095 | ,189 | ,16701223305 | ,12621762471 | -,0837070044 | ,41773147048 |

**Testes de homogeneidade de variâncias**

| | | Estatística de Levene | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Purchase Behaviour | Com base em média | 2,444 | 2 | 232 | ,089 |
| | Com base em mediana | 2,335 | 2 | 232 | ,099 |
| | Com base em mediana e com gl ajustado | 2,335 | 2 | 231,047 | ,099 |
| | Com base em média aparada | 2,419 | 2 | 232 | ,091 |

**ANOVA**

Purchase Behaviour

| | Soma dos Quadrados | df | Quadrado Médio | F | Sig. |
|---|---|---|---|---|---|
| Entre Grupos | 1,139 | 2 | ,569 | ,790 | ,455 |
| Nos grupos | 167,147 | 232 | ,720 | | |
| Total | 168,286 | 234 | | | |

**Descritivas**

Purchase Behaviour

| | N | Média | Desvio padrão | Erro Padrão | 95% de Intervalo de Confiança para Média | | Mínimo | Máximo |
|---|---|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior | | |
| 18 a 24 anos | 60 | 3,8444444444 | ,72995283150 | ,09423650533 | 3,6558776328 | 4,0330112561 | 1,6666666667 | 5,0000000000 |
| 25 a 31 anos | 49 | 3,6394557823 | ,89710629117 | ,12815804160 | 3,3817767694 | 3,8971347952 | 2,0000000000 | 5,0000000000 |
| > 31 anos | 126 | 3,7619047619 | ,88126892640 | ,07850967591 | 3,6065243695 | 3,9172851543 | 1,6666666667 | 5,0000000000 |
| Total | 235 | 3,7574468085 | ,84803840825 | ,05531992607 | 3,6484580546 | 3,8664355624 | 1,6666666667 | 5,0000000000 |

**Comparações múltiplas**

Variável dependente: Purchase Behaviour

Games-Howell

| (I) Age | (J) Age | Diferença média (I-J) | Erro Padrão | Sig. | Intervalo de Confiança 95% | |
|---|---|---|---|---|---|---|
| | | | | | Limite inferior | Limite superior |
| 18 a 24 anos | 25 a 31 anos | ,20498866213 | ,15907546185 | ,405 | -,1739630360 | ,58394036025 |
| | > 31 anos | ,08253968254 | ,12265515949 | ,780 | -,2080648176 | ,37314418267 |
| 25 a 31 anos | 18 a 24 anos | -,2049886621 | ,15907546185 | ,405 | -,5839403602 | ,17396303599 |
| | > 31 anos | -,1224489796 | ,15029388822 | ,695 | -,4808845736 | ,23598661443 |
| > 31 anos | 18 a 24 anos | -,0825396825 | ,12265515949 | ,780 | -,3731441827 | ,20806481759 |
| | 25 a 31 anos | ,12244897959 | ,15029388822 | ,695 | -,2359866144 | ,48088457361 |