Aline de Almeida Carvalho

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

ABSTRACT

Understanding consumers' green consumption behavior through local purchasing

The study aims at contributing to the understanding of the Portuguese consumers' green purchasing behavior. Sustainable consumption has established itself as more than a trend, but a pressing issue due to the environmental crisis the world faces. Local purchasing is an important facet of sustainable consumption and has been the object of a vast number or researches in the last decades.

This study seeks to understand the major determinants of local purchasing. The focus was to investigate the purchase of local products in Portugal in light of the variables of the extended Theory of Planned Behavior: environmental concern, attitude, subjective norm, perceived behavioral control and purchase intention. The relevant data was collected by developing a quantitative online research through a consumer questionnaire. Results show that the main factor influencing local purchasing intention is environmental concern, followed by attitude. Perceived behavioral control and subjective norm did not show a significant positive correlation with local purchasing intention. Findings also suggest that age and occupation are not relevant criteria for differentiation of local purchasing intention, however gender is, as female consumers are 7.75% more likely to buy local goods than male consumers.

These findings contribute to induce a more assertive decision-making process by marketeers when building strategies for green products, offers insights for different stakeholders and policy makers on how to stimulate green buying behavior as well as to add and enrich current research on the topic.

Keywords: consumer attitude, consumer behavior, environmental concern, local purchasing, purchase intention.

RESUMO

Compreendendo o comportamento de consumo verde por meio de compras locais

Esse estudo pretende contribuir para a compreensão do comportamento de compra verde dos consumidores portugueses. O consumo sustentável se consolidou como mais do que uma tendência, mas uma questão urgente devido à crise ambiental que o mundo enfrenta. A compra local é uma importante faceta do consumo sustentável e tem sido objeto de inúmeras pesquisas nas últimas décadas.

Este estudo busca compreender os principais determinantes das compras locais. O enfoque foi investigar a compra de produtos locais em Portugal à luz das variáveis da Teoria Estendida do Comportamento Planeado: preocupação ambiental, atitude, norma subjectiva, controlo comportamental percebido e intenção de compra. Os dados relevantes foram coletados por meio do desenvolvimento de uma pesquisa quantitativa online através de um questionário. Os resultados mostram que o principal fator que influencia a intenção de compra local é a preocupação ambiental, seguida pela atitude. O controle comportamental percebido e a norma subjectiva não mostraram correlação positiva significativa com a intenção de compra local. Os resultados também sugerem que a idade e a ocupação não são critérios relevantes para a diferenciação da intenção de compra local, mas o gênero é, já que os consumidores do gênero feminimo têm 7,75% mais chances de comprar produtos locais do que os consumidores do gênero masculino.

Essas descobertas contribuem para orientar um processo de tomada de decisão mais assertivo por profissionais de marketing ao construir estratégias para produtos verdes, oferece insights para múltiplos stakeholders e formuladores de políticas sobre como estimular o comportamento de compra verde, bem como adicionam e enriquecem as pesquisas atuais sobre o assunto.

Palavras-chave: atitude do consumidor, comportamento do consumidor, compra local, intenção de compra, preocupação ambiental.

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LIST OF ACRONYMS / ABBREVIATIONS

ATT Attitude

AVE Average Variance Extracted

CFA Confirmatory Factor Analysis

EC Environmental Concern

GOF Goodness-of-fit

PBC Perceived Behavioral Control

SEM Structural Equation Modeling

SN Subjective Norm

TPB Theory of Planned Behavior

TRA Theory of Reasoned Action

1 Introduction

Over the past decade, there has been a strong interest in understanding the consequences of climate change for the economy and society. In recent years, the relationship between consumer behavior, marketing and the environment has been given heightened attention. Both public awareness of the environmental crisis and of consumers' responsibility have been escalating globally. This shift of consciousness made consumers and researchers question the role of Marketing in environmental deterioration. Growing research on the field focuses on understanding consumer behavior as part of a path to shifting consumers towards sustainable consumption practices. The main theme of this study is understanding green consumption behavior through the perspective of local purchasing to help increase the share of green buying by consumers.

Increasing the knowledge on green consumer behavior is vital for both the environmental cause and business purposes. To achieve part of the sustainable development goals set by the international community (United Nations, 2019), it is imperative to reduce the negative environmental impacts of consumption. In parallel, from a marketing viewpoint, bringing innovating solutions through sustainable products and services can only be effective if consumers are willing to embrace greener technologies and lifestyles (Jansson, Marell, & Nordlund, 2010). Furthermore, companies with a green positioning strategy have displayed higher customer satisfaction, increased profitability, market shares and general performance index (Moser, 2015). Considering the importance of green consumption for the environment and businesses, it is critical that marketers keep up with the factors that affect green purchasing behavior.

Research that attempts to uncover the elements that influence green behaviors, especially green consumption behaviors, continues to expand. Understanding green consumers has been not only a growing field of research but also an important marketing focus (Lin & Huang, 2012). This research examines the influence that major determinants have on consumer's intention to purchase green products. The outcome of investigating these elements is valuable to multiple purposes. First of all, to elicit actual positive environmental changes yielded by consumers, it is crucial to understand which factors affect green buying behavior. The study of the factors that act as barriers or boost green purchasing behavior can harvest powerful information that should be used by marketers to properly encourage sustainable behavior. The main ecological value of understanding the determinants of green consumption and subsequently translating them into marketing expertise is to contribute to an increase in green purchasing behavior. In the long run, increasing consumer's green behavior in a wide scale

has the potential to positively impact the climate crisis and worldwide wellbeing. Ultimately, this study also generates results of relevant scientific value within its context and could serve as reference for future research on Portuguese consumer behavior towards green products.

Prior research to understand consumer behavior, and in particular green consumption behavior, has used the Theory of Planned Behavior (TPB) framework (Arı & Yılmaz, 2017; Maichum, Parichatnon, & Peng, 2016; Paul, Modi, & Patel, 2016; Vermeir & Verbeke, 2008; Yadav & Pathak, 2016). In particular, Paul et al. (2016) have used the extended theory of planned behavior to identify key determinants of green purchasing behavior. With the purpose of adjusting the investigation of consumers green buying behavior to the study's context and consequently achieve trustworthy scientific results, a choice was made to focus on the examination of one sustainable behavior: local purchasing. In the past years, many consumers have been favoring local products, buying products that went through a shorter transportation journey or that are sold straight out of the producer's hands, in order to contribute to minimizing their environmental footprint. With the support of the extended TPB, this study evaluates the link between the variables environmental concern, attitude, subjective norm, perceived behavioral control and consumers' local purchase intention.

Research has shown that consumers with high environmental consciousness have a higher chance of engaging in environmentally friendly behavior (Lin & Huang, 2012; Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997; Tobler, Visschers, & Siegrist, 2011; Yue, Sheng, She, & Xu, 2020). In spite of many consumers declaring their concern about the environment, often their actual buying behavior it is not a reflection of this concern. Although previous research indicates that consumers have a positive attitude towards environmental protection, many studies focusing on green buying behavior describe a discrepancy or "gap" between the positive attitudes expressed by consumers and their actual consumer practices. As such, many consumers show a favorable attitude towards buying green products but this attitude does not translate into actual buying behavior. There is a gap between consumer thinking and action, it is often referred to as "green buyer inconsistency" or "green attitude and behavior gap" (Joshi & Rahman, 2015, p.129). To help reduce the gap between attitude and sustainable buying behavior, it is important to investigate what are the determinants of sustainable behavior.

Consumption is associated with an array of environmental impacts, so purchasing choices also embody significant environmental decisions. There is a range of examples of behaviors most regularly linked to green consumption that can be investigated to understand buying behavior, such as: purchasing products that have a reduced environmental impact, avoiding products with aerosols,

purchasing recycled paper products, buying organic produce, purchasing products that use less packaging, bringing a reusable bag to carry groceries, etc. (Gilg, Barr, & Ford, 2005). This study chose to focus on one type of green behavior: purchasing of local products. Buying from local farmers decreases the transportation journey that food takes from producers to consumers' homes, hence reducing global environmental pollution (H. La Trobe, 2001).

Considering the significant role played by local purchasing for consumers and for main research in sustainable development, this behavior was chosen as the green behavior to be focused on in this study in order to better understand green buying behavior in Portugal. Thus, this research conducts the investigation of consumers' behavior regarding purchase of local products and aims at converting the results into insights to help comprehend overall green consumption behavior. The choice to single out one specific behavior grants the quantitative results greater accuracy as it renders a straightforward questionnaire, consequently reducing possible misinterpretations by respondents.

1.1 Research question and objectives

Groceries are responsible for up to a third of the environmental footprint of domestic consumption. Everyday consumer behavior reveals opportunities in favor of environmentally friendly products that would reduce one's environmental impact through replacing higher-impact behavior with sustainable options. That conscious shift of consumer behavior has proven to be a long-growing trend that not only benefits the environment, but generates opportunities for businesses (Moser, 2015). Understanding the drivers of consumers' green buying behavior is imperative to encourage sustainable consumption.

Studies that investigate the field of green marketing research and its agenda agree that examining the green consumer will remain an appealing subject as environmental consciousness progresses over time (Chamorro, Rubio, & Miranda, 2009; Kilbourne & Beckmann, 1998). Considering this ever-changing scenario, the conclusions of previous studies might not be valid for long. Future research on green buying behavior must take into consideration the potential developments in consumers' intentions, attitudes and behaviors.

In order to contribute to satisfying the need for updated knowledge on green consumption behavior identified in the literature, in particular relating to the dearth of research on green buying in Portugal, the present research intends to investigate the factors that influence Portuguese local purchase

behavior. Specifically, the following research question is studied: what are the factors that influence local purchasing behavior?

Moreover, a number of specific objectives are proposed:

- To understand whether environmental concern affects local purchasing behavior;
- To understand whether subjective norms affect local purchasing behavior;
- To determine potential significant correlations between sociodemographic variables and local purchasing behavior;
- To identify which demographic segments that are prone to buying local.

2 Literature Review

In this chapter, the theoretical background of the study is presented. Initially, the concept of sustainable development, its evolution and the concept of green products are addressed to contextualize the upcoming framework. Next, we analyze the characteristics of the consumer's buying behavior, identifying the existence of relationship or influence of these characteristics on the purchase decision process through the extend version of the Theory of Planned Behavior (TPB).

2.1 Sustainable Development and Green Products

The topic of sustainable development has been on the global agenda since 1987, when it was first identified in the Brundtland Report (Brundtland, 1987), a report issued by the World Commission on Environment and Development that year. Since then, global society has been increasing the use of renewable energy sources and has become more efficient in terms of production, consumption and reuse of materials and resources (Lukman, Glavič, Carpenter, & Virtič, 2016). Nevertheless, the report issued in 2019 by the Intergovernmental Panel on Climate Change (IPCC), which brings together contributions from leading scientists in the area, warns of the urgency to respond to the climate threat immediately. According to the IPCC report, the world has only a dozen years to contain global warming at a maximum of 1.5°C. If temperature increases are not contained within this range, the risks of extreme heat, drought, flood and poverty will increase substantially to hundreds of millions of people (IPCC, 2019).

According to the “Brundtland Definition”, “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p.37). Thus, an economy can only be considered sustainable if it simultaneously meets human needs - especially the fundamental needs of the poor - and respects the barriers established by the need to sustain the ability of the environment to meet present and future needs. It is important to point out that people's needs do not necessarily coincide with their wants. Thus, not meeting the needs of human beings is socially unsustainable, and consuming resources beyond the capacity of the environment is environmentally unsustainable (Lorek & Spangenberg, 2014). The IPCC has direct recommendations on people's diets when it comes to individual changes that can

help reduce the impact of climate change. The report stresses that is necessary to buy less meat, milk, cheese and butter. It is also critical to eat more local seasonal foods and reduce waste (IPCC, 2013).

According to a recent Oxford University study, the current global food supply chain generates approximately 13.7 billion metric tons of carbon dioxide equivalents (CO2eq) (Poore & Nemecek, 2018). This number corresponds to 26% of global greenhouse gas (GHG) emissions. Another 2.8 billion metric tons of CO2eq (5%) are caused by non-food agriculture and other deforestation factors. In addition to emissions, food production generates approximately 32% of global terrestrial acidification and about 78% of eutrophication. The sum of these emissions is capable of essentially modifying the species composition of natural ecosystems, as well as reducing biodiversity and even ecological resilience (Poore & Nemecek, 2018).

The environmental impact of the current agricultural system is alarming. This system consumes resources intensively, covering about 43% of the planet's free land (which is not covered by ice or desert). Approximately 87% of this land is agricultural food crops and the remainder is dedicated to biofuel and textile crop production or allocated to non-food uses such as leather and wool production. Poore & Nemecek estimates that almost 70% of freshwater withdrawals are used by agricultural irrigation. The impact of irrigation is another aggravation because it returns less water to rivers and groundwater than industrial and municipal uses. It should also be borne in mind that irrigation predominates in water-scarce areas, stimulating between 90 and 95% of global water scarcity consumption (Poore & Nemecek, 2018).

Poore and Nemecek's (2018) results agree with IPCC 2018 directives. According to the previously mentioned Oxford study, the environmental impacts of animal products can significantly exceed those of plant substitutes. Meat, aquaculture, eggs and dairy products use 83% of the world's arable land. At the same time, such productions contribute 56 to 58% of GHG emissions from food and provide only 37% of protein and 18% of calories consumed worldwide (Poore & Nemecek, 2018).

A change in an individual's diet can produce environmental benefits on a scale not attainable by food producers, according to Poore and Nemecek (2018). Adopting a diet that eliminates the consumption of animal products has transformative potential. Such a transformation can reduce land use for food production by approximately 3.1 billion hectares (a reduction of 76% of the current total) and reducing land use for agriculture by 19%. Such a change would lead to a 49% reduction in GHG emissions from food production. In addition, soil acidification would fall by 50% and freshwater

withdrawals for irrigation could be reduced by 19%. Besides altering their diet to reduce their individual impact, consumers can act on the climate cause by avoiding food products that generate high environmental impact (Poore & Nemecek, 2018).

High consumption of natural resources is not unique to food production. Depletion of these resources has increased sharply for more than a decade to meet a global demand to produce goods and services. This trend has caused serious damage to the environment, such as the intensification of global warming, the decline of fauna and flora and the intensification of pollution, especially in large urban areas. Since then, many countries have recognized the severity of the climate threat and have sought "sustainable development" as a way out to reduce the negative impact of development on society and the environment (Joshi & Rahman, 2015).

2.2 Green Consumption

Sustainable development manifests itself in two distinct directions: green innovation and green consumption (Joshi & Rahman, 2015). Green innovation is focused on production, seeks to encourage environmental sustainability practices throughout the cycle of creation of goods and services. Green consumption is directly linked to Environmentally Responsible Consumption (ERC). "Responsible consumption" was define for the first time in 1973 by George Fisk as "rational and efficient use of resources with respect to the global human population" (Fisk, 1973, p.24). The author highlighted the importance of considering the consumption question from a global perspective, since consumption of depletable resources in one location will necessarily affects the reservoir of resources elsewhere. ERC is practiced by consumers when they take into account the environmental impact of buying, using and disposing of miscellaneous products or using varied green services (Joshi & Rahman, 2015).

Responsible consumption is intertwined with environmental awareness. This last topic has been studied since the 1970's, it grew stronger in the 1980's and finally gained relevance in the 1990's, labeled "the decade of the environment" (Akehurst, Afonso, & Gonçalves, 2012). Since then, there was a progressive increase in consumer environmental awareness. This change in consumer behavior was the result of several factors like media coverage of the growing social and environmental concerns, pressure by NGOs, legislation, increasing awareness of environmental issues and the effect of environmental disasters on public opinion. "Consequently, consumers have become more concerned

with their daily purchasing habits and the impact these might have on the environment" (Akehurst, Afonso, & Gonçalves, 2012, p.973). From a marketing point of view, the core aspect that determine environmental awareness is the consumer's willingness to pay higher prices and spend more time and effort to adopt environmentally friendly consumption behavior (Chitra, 2007). Consequently, a green consumer is defined by a combination of three factors: awareness of green alternatives, willingness to pay more for green products and to go the extra mile to embrace green behavior.

Previous research has already established that the rise of environmental awareness is changing consumer behavior. The BBMG Conscious Consumer Report showed that in 2007, over a decade ago, 51% of Americans were willing to pay extra for products with higher environmental quality. Moreover, 67% of these consumers agreed with the importance to purchase products that elicit environmental benefits (Bemporad & Baranowski, 2007). The Organization for Economic Co-operation and Development (OECD) pointed out in 2002 that almost a third of consumers across OECD's 36 countries could be considered ''green consumers'' due to their strong environmental engagement and their readiness to pay for environmental products (Directorate et al., 2002). The European Commission carried out a study in 2005 that pointed out that 31% of Europeans were willing to purchase environmentally friendly goods even if their cost was higher compared to their traditional substitute. A similar study made in 2008 by the same institution showed an exponential increase on that percentage: from 31 to 75% (European Commission, 2008). The rise of the number of individuals who are willing to spend more for environmentally friendly products is evidence that environmental awareness is transforming consumer behavior (Liu, Anderson, & Cruz, 2012).

The present time is the peak of environmental awareness worldwide, nonetheless the feasibility of reducing environmental degradation, climate change and pollution through a transformation in consumer behavior is not yet a matter of public knowledge. The basic task of buying groceries accounts for 30% of the environmental impact of household consumption, a category that also includes mobility, home improvement, construction and telecommunications. (Moser, 2015). According to Joshi & Rahman (2015), consumers have the power to prevent or at least decrease environmental damage just by choosing to buy green products. "A green product is defined as 'one which satisfies consumers' needs without damaging the environment and contributes towards a more sustainable world. These products are environmentally superior and have low environmental impact, they use materials safer to the environment, are recyclable and require less packaging. Some examples of green products are: organic products, energy efficient light-bulbs, herbal products, eco-friendly washing machine, etc."

(Gurău & Ranchhod, 2005, p.130). Also, in 1995, a study found that domestic purchases produced 40% of global environmental damage (Grunert & Juhl, 1995). There is no scientific evidence that points to a reduction of this fraction today (Gurău & Ranchhod, 2005).

Furthermore, environmentally responsible purchasing - green consumption - occupies a position of high importance in the sustainable development of a country, since unplanned purchase of goods, excessive consumption and materialism have huge potential to damage the environment. Green or environmentally sustainable purchasing decisions are opportunities to reduce environmental impact, as consumers simply replace higher impact products with products that are "environmentally friendly" or produced by local farmers and small business.

2.3 Local purchasing behavior

Two main trends dominated food production in Europe and the US in the second half of the last century: increasingly intensified and mechanized agricultural systems with the purpose of improving harvests combined with a progressively globalized food system. The race to escalate and globalize food systems have high environmental, social and economic costs. The environment is predominantly affected by pollution emitted from the food production process, reduced soil fertility and reduction in biodiversity (H. L. La Trobe, Acott, Trobd, & Acotp, 2011).

The concept of 'food miles' represents the most environmentally destructive consequence of the increasingly global nature of the food system. Food miles accumulate during the journey where food is transferred from the region of origin to its destinations, then goes through the phases of packaging, processing, storing, and reaching retail channels, ultimately arriving at consumers' homes. "The obvious environmental costs of food miles are the air pollution caused by trucks and planes, as well as the increased use of nonrenewable resources" (La Trobe et al., 2011, p.311). The concentration of processes in food production, the globalization of the activity and the supply chains involved, the myriad of scandals concerning the food industry plus the rise in global environmental awareness pushed the consumer to pressure for more information and transparency on food origin (Feldmann & Hamm, 2015) and increased their interest in purchasing local products (Hu, Batte, Woods, & Ernst, 2012).

Since the last decade, many consumers have been reorienting themselves towards local products, food that went through a shorter transportation journey or that is sold straight out of the producer's hands,

as a way to contribute to minimizing their environmental footprint (Hu et al., 2012). Buying local products has been linked to sustainable consumption in a vast number or researches in the last decades (Blake, Mellor, & Crane, 2010; Gilg et al., 2005; Lyson, Gillespie, & Hilchey, 1995; La Trobe, 2001). Escalating environmental awareness and fear of consequences of climate change have boosted investigations that identifies local food consumption as one of multiple consumers' lifestyle choices with potential to mitigate individual's carbon footprint and thus preserve the environment (Blake et al., 2010). The benefits of buying local reaches far beyond the environmental sphere, thus positively affecting the economy and community by nurturing local economic development, preserving diversity and quality in produce, generating "opportunities for producers and consumers to come together to solidify bonds of local identity and solidarity" (Lyson et al., 1995, p.112).

Cowell & Parkinson (2003) identify in the sustainable development literature three key arguments that link sustainability to regionalization and localization of food production and consumption practices: "1. It reduces the environmental impacts associated with transporting long distances [...]; 2. The potential for degradation of the environment and exploitation of human labor is reduced [...]; 3. It leads to an increased sense of community by building up local networks of producers and consumers" (Cowell & Parkinson, 2003, p.223). Furthermore, past research indicates that consumers largely trust that favoring locally produced food, for example, is environmentally friendly (Tobler, Visschers, & Siegrist, 2011).

2.4 Conceptual Framework

Over the years various enlightening theories of consumer behavior have been presented. They have distinct sources, deriving from the social sciences – economics, psychology and sociology - or focusing on the effects of marketing variables and external stimuli. Most of these theories consider personal and environmental variables (Kalafatis, Pollard, East, & Tsogas, 1999). Researchers turned to social psychological research in attitude formation in order to understand buying decisions and to build a wide-ranging theory of consumer behavior. Expectancy-value models were given special interest because "they provided a theoretical link between evaluative criteria and the concept of attitude" (Kalafatis et al., 1999, p. 443). The Theory of Planned Behavior (TPB) is an evolution of the initial expectancy-value model. It is a valuable theoretical framework for understanding the consumption of local products as it presents a "clearly defined structure/model that allows the investigation of the

influence that attitudes, personal and cultural determinants and volitional control have on consumers' intentions to buy environmentally friendly products" (Kalafatis et al., 1999, p. 444). The Extended Theory of Planned Behavior (Chen & Tung, 2014; Paul, Modi, & Patel, 2016) incorporates a new variable to the original TPB in order to make it more efficient in the context of green consumption research.

2.4.1 The extended Theory of Planned Behavior

The study of psychological aspects to predict and explain consumer behavior is not new in scientific literature. Several authors have addressed and deepened issues related to the psychological component to understand the factors that lead individuals to make their purchasing decisions (Tommasetti, Singer, Troisi, & Maione, 2018). The Planned Behavior Theory (TPB) was proposed by Icek Ajzen in 1985 and was praised as the best model for predicting the intentions and behavior of certain consumer actions (Yadav & Pathak, 2016). The TPB theory is a conceptual extension of Theory of Reasoned Action (TRA), and is believed to be useful for predicting people's behavior under certain circumstances (Ajzen, 1988). It explains that an individual's behavior and decision making can be guided by three variables: attitudes (ATT), subjective norms (SN), and perceived behavior control (PBC). Together these three variables are predictors of intentions, they lead to the formation of a "behavioral intention" that influences behavior (Ajzen, 2002).

The TPB framework has been proved effective in predicting consumer intention and behavior in a broad scale of environmental studies. From hospitality to energy efficient products, the model has established itself as robust and applicable (Yadav & Pathak, 2016). Concerning particularly the study of green products, Kalafatis et al., (1999) assessed the suitability of TPB framework in predicting consumers' intention to purchase eco-friendly produce in Greece and the UK, reporting that the framework showed strength in both settings. Similarly, Chan & Lau, (2002) investigated the suitability of the framework when assessing consumers' pro-environmental purchase behavior in American and Chinese cultural perspective and concluded the universality of TPB in both cultural contexts.

In recent years a growing number of studies in psychological literature have included supplementary constructs in the TPB to increase its ability to predict behavior (Yadav & Pathak, 2016). In one instance, an extended Planned Behavior Theory (TPB) research model was developed incorporating the variable Environmental Concern (EC) with the purpose of predicting the consumer's intention to visit green hotels (Chen & Tung, 2014). A recent study seeking to validate TPB and its

extended form while predicting Indian consumers' green product purchase intention concluded that the extended framework has higher predictability than TPB and TRA in green marketing settings: "an additional construct in the new model considerably contributes to improving the understanding of green products purchase intention formation and could become a sustainable main-stream variable" (Paul et al., 2016, p.123). The additional variable EC can help achieve a comprehensive understanding of green product purchase intention and for that reason the extended TPB was found the most suitable framework to equip this study.

The strength of correlation between behavioral intention and TPB's three predictors was investigated by a broad study (T. Han & Stoel, 2017), which reviewed research on the context of socially responsible consumer behavior, such as green consumer behavior. Results show that TPB provides a reliable framework for explaining behavior of this sort. The same study also explored how much an additional predictor variable can improve the prediction of intention of the TPB, including the variable environmental consciousness. It was noted that EC displays "good predictive validity in explaining socially responsible buying behaviors" (Han & Stoel, 2017, p.99). An analogous finding was reported by (Yadav & Pathak, 2016) while investigating the purchase intention of green products in the Indian context: the addition of the EC construct has enhanced the robustness and predictive capability of the TPB.

In view of the evidence in the literature review in favor of the inclusion of additional predictors in the TPB to improve its predictive power, this study applies an extended version of the framework including the EC predictor to investigate green purchase behavior in the Portuguese context. The components of the extend TPB are now presented.

2.4.1.1 Environmental Concern

The meaning of the construct Environmental Concern has been overlooked for a long time by researchers as it can seem obvious or implicit according to Dunlap and Jones (2002). For that reason, they examined different definitions to provide the following: "Environmental Concern refers to the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution" (Dunlap & Jones, 2002, p.485). When operationalized as a variable on the TPB framework, Chen & Tung, (2014) found EC to be a general attitude concerning the protection of the natural environment that acts as significant determinant of transition to environmentally friendly behavior. A general attitude such as EC will affect

specific behavior directly and indirectly by impacting other variables that affect behavior, such as SN, PBC and ATT (Chen & Tung, 2014). Considering the relations between the mentioned variables, the following hypotheses are proposed:

H1: Environmental concern positively impacts local products purchase intention.

H2: Environmental concern positively impacts attitude towards local products.

H3: Environmental concern positively impacts subjective norms.

H4: Environmental concern positively impacts perceived behavioral control.

2.4.1.2 Attitude

Attitude (ATT) towards the behavior is explained by the outcome of behavioral beliefs and the result of the evaluations (positive or negative) of a specific behavior by an individual (I. Ajzen & Fishbein, 1980). Paul et al (2016) and Zhao et al. (2014) also used TPB in their studies and considered attitude as one of the factors that play an important role in predicting consumers' buying intentions. In the specific case of green products, previous literature has found that attitude and behavioral intention have a positive association in multiple cultures (Mostafa, 2007) and suggests that a change in attitude towards green produce implicates in a rise in purchase intention. Therefore, the following hypothesis is proposed:

H5: Attitude towards local purchase positively impacts local purchase intention.

2.4.1.3 Subjective Norm

The second variable refers to the social pressure wielded (approval or disapproval) to perform a behavior or not (Icek Ajzen, 1991). The subjective norm (SN) is believed to be a group of normative beliefs and motivation to comply. Usually, the actions or reactions of family, friends, consultants, or any professional show primary importance in self-decision making (I. Ajzen & Fishbein, 1980).

The more favorable the attitude and subjective norm and the greater the perceived control, the stronger will be the personal intention to perform the behavior. Although many empirical studies have explained individuals behavioral intent only through attitude and subjective norm (Armitage & Conner, 2001), in some cases the consideration of these two variables has not been sufficient to predict behavior. Paul et al. (2016), for example, found that the subjective norm does not influence the

intention of Indian consumers to make green choices. Nonetheless, many studies in the field of marketing and consumer behavior context have found a positive correlation between intention and subjective norm (Chen & Tung, 2014; Dowd & Burke, 2013; T. Han & Stoel, 2017; Tommasetti et al., 2018). Thus, we propose:

H6: Subjective norm positively impacts the intention to purchase local products.

2.4.1.4 Perceived Behavioral Control

Perceived Behavioral Control (PBC) is a determinant of intention based on the idea that behavior is formed by motivation (intention) and skill (control) and reflects an individual's perception of the ease or difficulty of performing a particular behavior (I. Ajzen & Fishbein, 1980), it reflects one's past experiences and anticipated complications. An action is considered achievable or not based on the result of control beliefs and perceived power (Icek Ajzen, 1991). This predictor of intention focuses on external and general factors (Paul et al., 2016). The literature review shows that multiple studies found a positive link between PBC and intention while investigating organic food, green hotels, recycling and overall green products (Paul et al., 2016). Considering these findings, the following is proposed:

H7: PBC positively impacts intention to purchase local products.

Based on the literature review abovementioned, the following research model was designed:

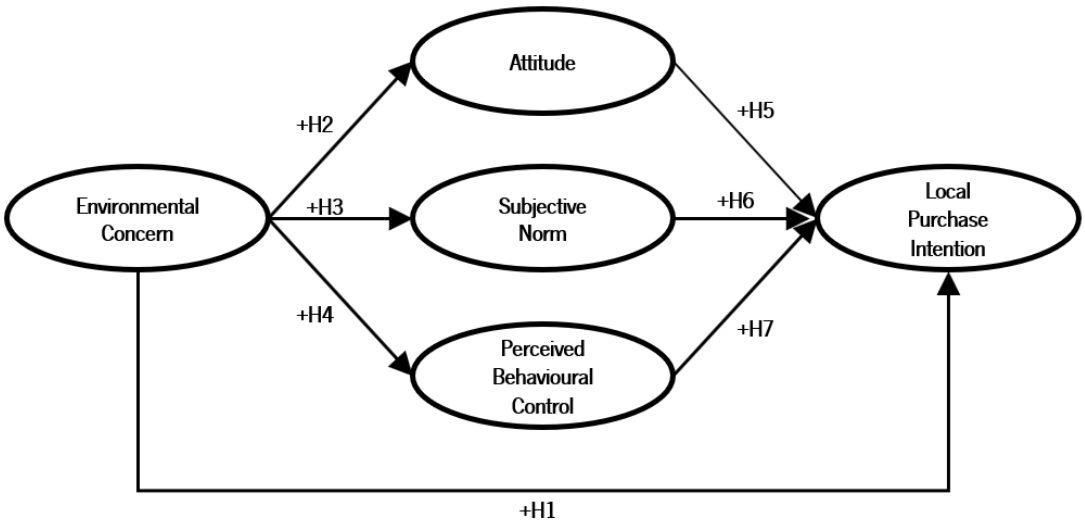


Figure 1 - Proposed research framework (adapted from Paul et al., 2016, p. 126)

3 Methodology

This chapter will present the aspects inherent to the methodology used to carry out this study: the research design and question, the type of study, target population and sample size, the instruments applied for the execution of the investigation plus the operationalization of the relevant constructs. The research hypotheses and the respective scales, validated by previous studies that applied the common relevant behavioral and psychological variables approached in this study, will also be presented. The theoretical framework resulting from the literature review was carefully assessed to enable the adequate adaptation of preexisting scales to operationalize the constructs of this research. Consequently, the measurement scales of all constructs applied in this empirical research were adapted from previous studies in order to assess and relate the variables. Moreover, this chapter will present the methods used for collecting and processing of data.

3.1 Research design

The nature of the problem approached by this investigation and the research objectives determine the use of a quantitative research, designed to describe the phenomena and to test hypotheses, based on empirical data. Given that "an empirical investigation is an investigation in which observations are made to better understand the phenomenon to be studied" (Hill & Hill, 2012, p.19), this study uses these observations to formulate conjectures that will prove the hypotheses raised. This research method, through which hypotheses and theories are formulated and subsequently verified, was developed by Karl Popper and it is called "hypothetical-deductive".

The following flowchart illustrates the research design:

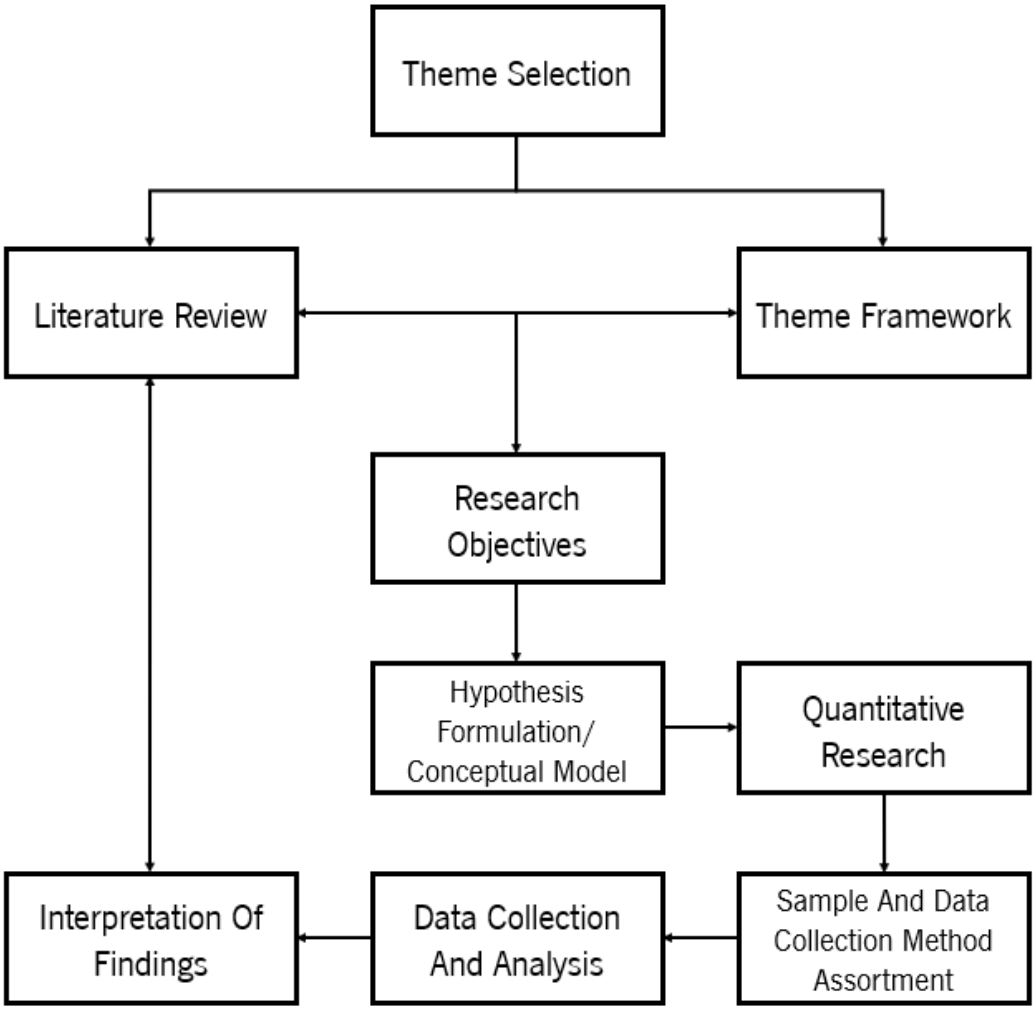


Figure 2 - Research Design
Source: (Anjos, 2016)

3.2 Research question

This study seeks to investigate the antecedents that affect green consumption behavior, specifically "local purchasing behavior". The research question was developed based on empirical observations of purchasing behavior habits and subsequent reviewing of the literature on green consumption behavior. This question is summarized as: what are the factors that influence local purchasing behavior?

The following are the specific objectives that guide this study's investigation of local purchasing behavior:

- To understand whether environmental concern affects local purchasing behavior;
- To understand whether subjective norms affect local purchasing behavior;

- To determine potential significant correlations between sociodemographic variables and local purchasing behavior;
- To identify which demographic segments that are prone to buying local.

3.3 Questionnaire

The questionnaire utilized in this research was modified from a research by Paul, Modi, and Patel, (2016) which targeted green purchase behavior (the original version is at appendix I). The structure of the 24-item inquiry was preserved to ensure reliability. It was used the 5-point Likert type scale to measure the five constructs: attitude, subjective norm, perceived behavior control, environmental concern and intention. This study preserves Paul et al. (2016) application of the following previously validated scales: a 3-item type scale to measure attitude towards local buying, a 4-item scale to measure subjective norm, a 7-item scale to measure perceived behavior control, a 5-item scale to measure environmental concern and lastly, a 5-item scale to measure purchase intention for local buying. The questionnaire was translated to Portuguese from its original English version and proofed through back-translation method (Brislin, 1970) by an English native speaker.

Considering the significant role played by the action "buying local" for consumers and for main research in sustainable development, this behavior was chosen as the green behavior to be focused on in this study in order to better understand green buying behavior in Portugal. Thus, this research conducts the investigation of consumers' behavior regarding purchase of local products and converts the results into insights to help comprehend overall green consumption behavior. The choice to single out one specific behavior grants the quantitative results greater accuracy as it renders a straightforward questionnaire, consequently reducing possible misinterpretations by respondents. The questionnaire utilized in this research can be found in appendix II.

3.4 Variables' Operationalization

This study adopted the scale from the questionnaire implemented by Paul et al., 2016 research. The 24-item inquiry contemplated the 5 constructs presented in the conceptual model previously shared. The original study established a relation between these constructs and green product consumption. For this study, the items were adapted to focus on one green behavior: local purchase, maintaining the overall structure of the scale to preserve reliability.

The following Table 1 presents the questionnaire's items and their respective construct:

Table 1 - Variables' Operationalization

Construct	Items
Attitude Towards Local Purchase	1. I like the idea of purchasing local products.
	2. Purchasing local products is a good idea.
	3. I have a favorable attitude toward purchasing local products.
Subjective Norm	1. Most people who are important to me think I should prefer to purchase at local shops.
	2. Most people who are important to me would like me to purchase local products.
	3. People whose opinions I value prefer that I purchase local products.
	4. My friend's positive opinion influences me to purchase local product.
Perceived Behavioral Control	1. I believe I have the ability to purchase local products.
	2. I see myself as capable of buying local products in the future.
	3. I have resources, time and willingness to purchase local products.
	4. Local products are generally available in the shops where I usually do my shopping.
	5. I feel that local products are usually more expensive.
	6. There are plenty of opportunities for me to purchase local products.
	7. I feel that local products purchase does not depend totally on me.
Environmental Concern	1. I am very concerned about the environment.
	2. I would be willing to reduce my consumption to help protect the environment.
	3. Major political change is necessary to protect the natural environment.
	4. Major social changes are necessary to protect the natural environment.
	5. Anti-pollution laws should be enforced more strongly.
Purchase intention for local products	1. I will consider buying local products because they are less polluting.
	2. I will consider switching brands in favor of local producers for ecological reasons.
	3. I plan on spending more on local products than in

	products that were produced in distant regions.
	4. I expect to purchase local products in the future because of their positive environmental contribution.
	5. I definitely want to purchase local products in the near future.

3.5 Sampling method and target population

The sampling method used in this study was non-probabilistic. Specifically, the respondents were sampled by convenience. The convenience sample is formed by subjects who are easily accessible and are present in a specific place, at a precise moment (Fortin, 2009). The questionnaire was posted on 18 popular Facebook groups that target buyers and sellers of new and used products in different regions of Portugal as well as forwarded by email to the academic community of the Universities of Minho and Porto. This kind of sampling presents limitations as respondents might not be representative of the population and the data collected can contain bias, however it is considered acceptable in this study given the time and resource restrictions presented by the academic context of the investigation.

For this study, we targeted adults (age 18 or above) because of the complex nature of its subject. According to a recent report by Portugal's National Institute of Statistics, 80,9% of the Portuguese population had access to the internet and 76,2% had been active users by 2019 (INE, 2019). Considering these high percentages and the area of Portugal, the online survey method has been considered an appropriate form or collecting data.

The questionnaire was carried out and administered online using the Google Forms platform, and its completion was anonymous and confidential. Between May 25th and July 21st of 2020 the questionnaire was posted to 18 popular Facebook groups that target buyers and sellers of new and used products in different regions of Portugal as well as forwarded by email to the academic communities of the Universities of Minho and Porto, reaching a total of 484 valid responses. The sample size required for this study followed the same guidelines from Hair, Black, Babin, & Anderson, (2010) adopted by Paul et al., (2016), which recommended a desired level of 15-20 observations per studied variable. The sum of all items (variables) included in the five constructs approached by this study is 24, which makes the ideal sample size equal to 480 (24x20) respondents. The total of respondents reached was slightly above the ideal sample size (484).

3.6 Data analysis

This research uses the Structural Equation Modeling (SEM) technique to answer its objectives and test the multiple relationships represented in Figure 1. SEM is a multivariate analysis technique, a method that analyzes multiple measures of the study object, this way increasing the research's explanatory power, hence expanding the comprehension of more complex and interdependent study objects (Hair et al., 2010).

SEM has been broadly used in scientific research and specifically within marketing research. According to Hair et al. (2010), SEM is the most adequate multivariate method to test and validate the relationships established among concepts composed of multiple observable items. This technique allows for a more precise evaluation of the strength of the relationships since the SEM adjusts the relationship according to the measurement error (Hair et al., 2010).

In addition, in line with our last research objective (To identify which demographic segments are prone to buying local), we checked for the impact of demographic variables using t-test, a method that compares the means between two independent groups.

4 DATA ANALYSIS

In this chapter, the data collected through the online questionnaire will be analyzed. The purpose is to draw conclusions, respond to the research question and objectives by testing the hypotheses presented earlier based on the data analysis. The software IBM SPSS Statistics (version 25) and Lavaan (Rosseel, 2012) used to treat the data collected.

Firstly, the sample was characterized and after that the Kolmogorov-Smirnov test was performed to assess normality and adequately select the statistical tests to implement. The data analysis comprehended a Confirmatory Factor Analysis, where an evaluation of the scale's internal consistency was employed and lastly a Structural Equation Modeling (SEM) method was implemented to check the hypothesis.

4.1 Sample characterization

The investigation was carried out using a sample consisting of a total of 484 respondents. The sample showed an asymmetry in the distribution of genders, with a predominance of female respondents, with 331 elements (68.4%), and 147 male respondents, (30.4). Such asymmetry of responses is in line with Schlesinger, Mitchell, & Elbel's (2002) finding that suggests women tend to be more participative and better express themselves than men. Six (1.2%) respondents preferred not to choose between male and female gender (Table 2).

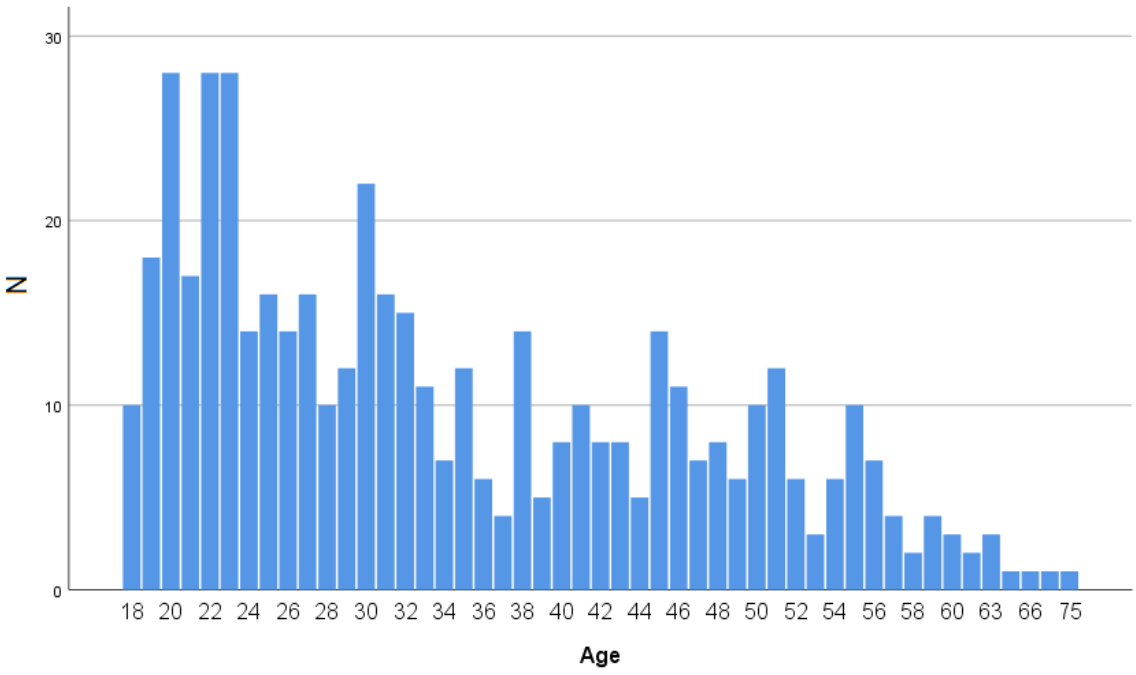
As depicted in Graph 1, the sample's ages range between 18 and 75 years, with the average age being around 34 years old. 39% of the sample is constituted by respondents between 18 and 27 years old, 29.3% ranges between 29 and 40 years old, 29,8% are between 41 and 60, which reflects a sample whose age frequency is higher within a younger cohort, but with a significant reach between adult respondents as well.

As for the educational background of the sample, it is possible to conclude that most respondents hold a type of university degree, which makes for a highly educated sample. 69 individuals (14.3%) have secondary education, 124 (25.6%) have a bachelors' degree, 49 (10.1%) have a post-grad course, 147 (30.4%) have a master's degree and 94 (19.4%) hold a doctor's degree.

The sample occupational profile is composed by mostly active workers (54.3%) and a significant share of students. 208 (43%) individuals are students, 17 (3.5%) work within the services sector, 22 (4.5%) are independent workers, 168 (34.7%) are public servers, 56 (11.6%) work for the private sector and 13 (2.7%) are unemployed.

Table 2 - Socio-demographic characteristics

		N	%
Gender	*Feminine*	331	68.4
	Masculine	147	30.4
	Not disclosed	6	1.2
Education	*Secondary Education*	69	14.3
	Bachelor's	124	25.6
	Post-grad course	49	10.1
	Master's	147	30.4
	Doctor's	94	19.4
Occupation	*Student*	208	43
	Services provider	17	3.5
	Independent worker	22	4.5
	Public server	168	34.7
	Privately employed	56	11.6
	Unemployed	13	2.7



Graph 1 - Age distribution

4.2. Normality Test

According to Hill & Hill (2012), the Kolmogorov-Smirnov test and the Shapiro-Wilk test are the most popular statistical tests to assess the normality of a sample. These tests compare the sample's scores to a set of normally distributed scores with the same mean and standard deviation. If the test is not significant ($p > 0.05$), that means that the sample distribution is not significantly different from a normal distribution, hence it is likely a normal sample. If the test is significant ($p < 0.05$), that means the distribution is not normal (Field, 2013). Based on the values obtained (Table 3), we can consider all items follow a non-normal distribution, hence the data follows a non-normal distribution, what requires the use of non-parametric statistics.

Table 3 - Normality Tests

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	**N**	P	Statistic	N	P
ATT1	0,349	484	0,000	0,688	484	0,000
ATT2	0,376	484	0,000	0,630	484	0,000
ATT3	0,306	484	0,000	0,718	484	0,000
SN1	0,259	484	0,000	0,859	484	0,000
SN2	0,279	484	0,000	0,848	484	0,000
SN3	0,246	484	0,000	0,862	484	0,000
SN4	0,198	484	0,000	0,893	484	0,000
PBC1	0,265	484	0,000	0,775	484	0,000
PBC2	0,279	484	0,000	0,699	484	0,000
PBC3	0,263	484	0,000	0,856	484	0,000
PBC4	0,200	484	0,000	0,901	484	0,000
PBC5	0,295	484	0,000	0,850	484	0,000
PBC6	0,275	484	0,000	0,846	484	0,000
PBC7	0,355	484	0,000	0,803	484	0,000
EC1	0,267	484	0,000	0,733	484	0,000
EC2	0,269	484	0,000	0,738	484	0,000
EC3	0,369	484	0,000	0,642	484	0,000
EC4	0,406	484	0,000	0,574	484	0,000
EC5	0,361	484	0,000	0,657	484	0,000
IN1	0,249	484	0,000	0,837	484	0,000
IN2	0,256	484	0,000	0,809	484	0,000
IN3	0,277	484	0,000	0,857	484	0,000

IN4	0,278	484	0,000	0,766	484	0,000
IN5	0,255	484	0,000	0,749	484	0,000
AG	0,118	484	0,000	0,927	484	0,000
ED	0,230	484	0,000	0,880	484	0,000
a. Lilliefors Significance Correction						

4.3 Structural Equation Modeling

Structural Equation Modeling (SEM) is a data analysis technique that combines features of factor analysis and multiple regression. SEM allows researchers to simultaneously investigate multiple correlated dependence relationships between the measured variables and latent constructs as well as among several latent constructs (Hair et al., 2010, p. 546). A Confirmatory Factor Analysis (CFA) is a confirmatory technique under the umbrella of SEM methods that assesses the contribution of each item in a scale and incorporates how well the scale measures the concepts. CFA enables researchers to test how accurately the measured variables in a model represent the constructs (Hair et al., 2010, p. 600).

After running the data collected through a first round of CFA, each item of the scale had its factor loading (λ) analyzed. Factor loading is a value that shows the degree of correlation between the original variables and the factors, and it is a fundamental metric to comprehend the nature of a particular factor (Hair et al., 2010, p. 90). “Loadings indicate the degree of correspondence between the variable and the factor, with higher loadings making the variable representative of the factor”, states Hair et al. (2010, p. 110). When analyzing the results of the first round of CFA, it was identified a need to eliminate five items that showed a low standardized factor loading ($\lambda < 0.5$), according to Hair et al. (2010, p.116): EC2, PBC4, PBC5, PBC6, PBC7. This group of items that registered a factor loading value below the desired threshold compromised two important indicators of the measurement model: Cronbach’s alpha and Average Variance Extracted (AVE), what required their removal from the data poll. This process was carefully carried out to identify and apply the necessary adjustments to maintain the model’s originality.

4.3.1 Scale Reliability

The reliability of a measure defines its degree of consistency (Hill & Hill, 2012). Cronbach's alpha was used as a measure of internal consistency to test the reliability of the scale. According to Hair et al. (2010), an acceptable indicator of the value of alpha Cronbach is one that is greater than 0.70.

Nunnally (1979) criteria for the different degrees of consistency classifications for each range of Cronbach's alpha value is presented on table 4:

Table 4 - Classification of Cronbach's Alfa Coefficient

Classifications	Cronbach's α
Excellent	α> 0.9
Very good	α between 0.80 and 0.90
Good	α between 0.70 and 0.80
Acceptable	α between 0.65 and 0.70
Weak	α between 0.60 and 0.65
Poor	α <0.60

Source: Nunnally (1979)

After excluding the five items that showed a low standardized factor loading, a new round of CFA was run and its results can be seen in Table 5. The results show that all latent constructs classify as very good regarding the Cronbach's scale of consistency, except for Attitude, which is classified as excellent. Item SN4 also presented a low standardized factor loading, but its removal did not significantly affect the construct's Cronbach Alpha value, hence the choice to keep it within the data poll was made.

Table 5 - Reliability of Scales

Variable	Item	λ	Cronbach's α	AVE	Composite Reliability
Attitude	ATT1	0,936			
	ATT2	0,888	0,921	0,800	0,923
	ATT3	0,860			
Subjective Norm	SN1	0,926			
	SN2	0,953			
	SN3	0,835	0,867	0,640	0,873
	SN4	0,480			
Perceived Behavioral Control	PBC1	0,802			
	PBC2	0,783			
	PBC3	0,748			
	PBC4[a]	-	0,813	0,598	0,816
	PBC5[a]	-			
	PBC6[a]	-			
	PBC7[a]	-			
Purchase Intention	PI1	0,772			
	PI2	0,836			
	PI3	0,700			
	PI4	0,886	0,896	0,633	0,896
	PI5	0,818			
Environmental Concern	EC1	0,653			
	EC2[a]	-			
	EC3	0,775			
	EC4	0,814	0,829	0,561	0,835
	EC5	0,747			

Note 1: Att = attitude; SN = 0073ubjective norm; PBC = perceived behavioral control; PI = purchase intention; EC = environmental concern.

[a] Deleted due to low standardized factor loadings.

4.3.2 Assessment of the measurement model

Following SEM methodologies, the measurement model validity for the Extended TPB framework utilized in this research was achieved by two processes: (1) finding specific evidence of construct validity and (2) establishing acceptable levels of goodness-of-fit (GOF) for the measurement model (Hair et al., 2010, p. 576).

In the first process, construct validity was confirmed by demonstrating reliability (via Cronbach's alfa as previously detailed in 4.2.2.1), convergent validity and discriminant validity utilizing the indicators obtained in the second round of CFA (after removing the 5 observed variables with low factor loading). Construct validity expresses "the extent to which a set of measured variables actually represents the theoretical latent construct those variables are designed to measure" (Hair et al., 2010, p. 601). Convergent validity estimates the relative amount of shared variance or convergence between indicators of a specific construct (Hair et al., 2010, p. 618).

Convergent validity was established via two distinct approaches that utilize three different CFA indicators that are depicted in Table 5: (1) all items factors loadings were higher than 0.5, most achieving an ideal value above 0.7; (2) each Average Variance Extracted (AVE) value was higher than 0.5 and composite reliabilities values were higher than 0.7 (Hair et al., 2010, p. 605). Such finding suggests the convergent validity among items measured is strong for each latent variable of the model.

Other than reliability and convergent validity, the third measure that defines construct validity is discriminant validity. That indicator expresses the extent to which a construct is truly distinct from other constructs by comparing the AVE estimates for each factor with the squared interconstruct correlations associated with that factor (Hair et al., 2010, p. 633). The discriminant validity of a construct is obtained by comparing the square roots of the AVE values with the Pearson correlations between all constructs. Fornell and Larcker (1981) established that the AVE square roots must be higher than the correlation value of the constructs, which was confirmed in this investigation as depicted in Table 6.

Table 6 - Discriminant Validity and Pearson's Correlation Matrix

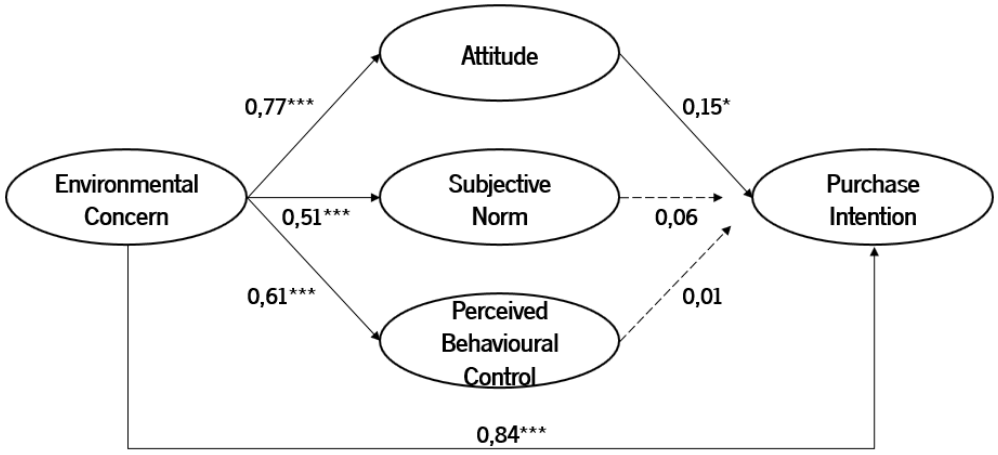
Constructs	ATT	SN	PBC	EC	PI
Attitude (ATT)	**0,894**				
Subjective Norm (SN)	0,508	**0,800**			
Perceived Behavioral Control	0,622	0,476	**0,773**		
(PBC)	0,601	0,346	0,392	**0,749**	
Environmental Concern (EC)	0,712	0,402	0,481	0,721	**0,795**
Purchase Intention (PI)					
Mean	4,485	3,516	4,147	4,484	4,077
Standard Deviation	0,657	0,780	0,736	0,599	0,729

Note: In diagonal are the AVE's square roots of each construct. All correlations are significant at 1%

Following SEM methodologies, the measurement model validity for the Extended TPB model utilized in this research established acceptable levels of goodness-of-fit (GOF) for the measurement model (Hair et al., 2010, p. 576). GOF are measures that indicate how well a specific model reproduces the covariance matrix among the indicator variables (Hair et al., 2010, p. 576). To assess goodness-of-fit, six indicators were utilised: x^2 (chi-square), x^2/df (chi-square to degree of freedom ratio), CFI (comparative fit index), GFI (goodness-of-fit index), TLI (Tucker–Lewis index), and RMSEA (root mean square error of approximation). A model fit is considered good when indices ≥ 0.90, values of x^2/df are between 2 and 5 and the value of RMSEAs ≤ 0.08, as states Hair et al. (2010, p. 578). After performing Confirmatory Factor Analysis, it was found that the GOF statistics were very approximate to the threshold for good-fit: x^2=543.101; df=144; p<0.001; $x2/df$= 3.77; TLI=0.926; CFI=0.937; RMSEA=0.076; GFI = 0,893.

4.3.3 Structural Model Validation (Hypothesis test)

The validity of the measurement model was assessed using a SEM technique that checked causal correlations between latent variables and test the hypothesis. The results of the standardized coefficient estimate for each construct of the extended TPB model are structurally represented by Figure 3. Table 7 depicts the relevant SEM indicators and summarizes hypothesis results. As shown, out of the seven proposed hypotheses, two were not supported by the data.



Note: *** p < 0.05, *** p < 0.001**
Figure 3 - Structural Extended TPB Model

Table 7 - SEM results of extended TPB model

	Hypothesis	Coefficients β	z-value	P value	Supported
1	**EC → PI**	0,840	5,431	0,000	YES
2	**EC → ATT**	0,767	11,321	0,000	YES
3	**EC → SN**	0,511	9,423	0,000	YES
4	**EC → PBC**	0.613	9,717	0,000	YES
5	**ATT → PI**	0.155	2,197	0,028	YES
6	**SN → PI**	0.063	-1,461	0,144	NO
7	**PBC → PI**	0.099	-1,784	0,074	NO

4.4 Impact of Demographic Variables

AS previously stated, this research also aimed to identify which demographic segments are prone to buying local. Hence, to investigate how the demographic variables gender, age and occupation affect purchase intention, t-test were run to compares the means between two independent groups.

4.4.1 Gender t-test

The independent t-test (table 8) that compared the purchase intention mean between female and male respondents showed a significant difference on intensity of purchase intention among the two groups (t(482) = -4.249; p<0,05). The average purchase intention of female respondents is significantly higher (+7.75%) than the average purchase intention of male respondents, given that INT_{MALE} (M=3.873;

SD=0.832; N=153) and INT_{FEMALE} (M=4.171; SD=0.657; N=331). Table 9 presents the mean for purchase intention by gender.

Table 8 - t-test

t	df	P
-4,249	482	0,000

Table 9 - Group statistics

	Gender	N	Mean	Std. Deviation
INTENTION	M	153	3.8732	0.832
	F	331	4.1710	0.657

4.4.2 Occupation t-test

To evaluate how purchase intention varies according to respondents' occupation, two distinct groups were stablished: students and workers. The independent t-test (table 10) that compared the purchase intention mean between students and workers showed no significant difference on levels of purchase intention among the two groups (t(482) = -0.577; p>0,05). The average purchase intention of students is not significantly different from the average purchase intention of workers, given that $INT_{STUDENTS}$ (M=4.055; SD=0.691; N=208) and $INT_{WORKERS}$ (M=4.093; SD=0.758; N=276). Table 11 presents the mean for purchase intention by occupation.

Table 10 - t-test

t	df	P
-0.577	482	0,564

Table 11 - Group statistics

	Occupation	N	Mean	Std. Deviation
INTENTION	Students	208	4.055	0.691
	Workers	276	4.093	0.758

4.4.3 Age t-test

To evaluate how respondents' purchase intention varies according to age, three distinct groups were stablished: 1. Young adult (18-24), 2. Adult (25-44) and 3. Mature adult (>44). The independent t-test (Table 12) that compared the purchase intention mean between the three age groups showed no significant difference on levels of purchase intention: ($t_{1\text{-}2}(360) = -1.124$; $p>0,05$), ($t_{2\text{-}3}(339) = 0.491$; $p>0,05$) and ($t_{1\text{-}3}(263) = -0.515$; $p>0,05$). The average purchase intention between the three age cohorts is not significantly different, given that INT_{YOUNG} (M=4.027; SD=0.621; N=143), INT_{ADULT} (M=4.113; SD=0.774; N=219) and INT_{MATURE} (M=4.070; SD=0.767; N=122). Table 13 presents the mean for purchase intention by age group.

Table 12 - t-test

Age groups	t	df	P
1-2	-1.124	360	0.262
2-3	0.491	339	0.624
1-3	-0.515	263	0.607

Table 13 - Group statistics

	Occupation	N	Mean	Std. Deviation
INTENTION	1	143	4.027	0.621
	2	219	4.113	0.774
	3	122	4.070	0.767

5 Discussion and Conclusion

This chapter discusses the main research results, presents its theoretical-practical contribution, limitations and recommendations for future studies.

5.1 Discussion

This research meant to answer the question: what are the factors that influence local purchasing behavior? SEM results presented in section 4.2.3 show the impact that environmental concern, attitude, subjective norm and perceived behavior control have on local purchasing behavior. The present study contributes to consumer behavior research by furthering understanding of the respective relevance of factors that determine local purchasing behavior.

Results show that 5 out of the 7 proposed hypotheses were supported. Standardized coefficient estimates suggest a significant and strong positive correlation between environmental concern and purchase intention (β=0.84; z=5,431; p<0.01). That result supports hypothesis 1, which proposes that environmental concern has a positive impact on local products purchase intention. Such finding on the influence of environmental concern on sustainable behavior was also registered by T. I. Han and Stoel (2017) and Chen and Tung (2014) when investigating the influence of the TPB components on socially responsible consumer behavior and on consumers intention to visit green hotels.

Concerning the relationship between environmental concern and attitude (β=0.77; z=11,321; p<0.01), the standardized coefficient estimates also suggest a significant and strong positive effect of environmental concern on attitude. That result supports hypothesis 2, which proposes environmental concern is positively related to attitude. In general, this result is in line with previous studies. Specifically, Han and Stoel (2017) and Vermeir and Verbeke (2008) have also found that environmental concern has a positive effect on attitude when investigating the influence of the TPB components on socially responsible consumer behavior and sustainable food consumption, respectively.

For the relationship between environmental concern and subjective norm (β=0.51; z=9,423; p<0.01), the standardized coefficient estimates suggest a significant and strong positive correlation. That result supports hypothesis 3, which proposes environmental concern is positively related to

subjective norm. Similar results were found by Chen and Tung (2014) and Paul et al. (2016) when investigating sustainable behavior.

Regarding the relationship between environmental concern and perceived behavioral control, the standardized coefficient estimates (β=0.61; z=9,717; p<0.01) one more time suggests a significant and strong positive correlation. That result supports hypothesis 4, which proposes environmental concern is positively related to perceived behavioral control. Chen and Tung (2014) and Paul et al. (2016) found a similar correlation on their research in sustainable behavior.

When it comes to the relationship between attitude and purchase intention (β=0.15; z=2,197; 0.01p<0.05), the standardized coefficient estimates suggest a weak positive correlation. That result supports hypothesis 5, according to which attitude is positively related to purchase intention. Similar results were found by Chen and Tung, (2014) and Paul et al. (2016) when investigating sustainable behavior.

Concerning the relationship between subjective norm and local purchasing intention (β=0.06; z=-1,461; p>0.05), the standardized coefficient estimates suggest a non-significant correlation (p>0.05). That result does not support hypothesis 6, which proposes subjective norm is positively related to purchase intention. This result is similar to Paul et al. (2016). Having found that subjective norms do not exert a significant influence on local purchasing behavior, it is reasonable to suggest that respondents act mostly as individual decision makers when it comes to buying local products, as they are not influenced by subjective norms but mainly guided by personal environmental concern and attitude. Vermeir & Verbeke (2008) and Paul et al. (2016) arrived at the same conclusion regarding subjective norms when investigating the role of the TPB factors on sustainable food consumption and on sustainable consumption behavior.

Finally, regarding the relationship between perceived behavioral control and purchase intention (β=0.01; z=-1,784; p>0.05), the standardized coefficient estimates suggest also a non-significant correlation (p>0.05). That result does not support hypothesis 7, which proposes perceived behavioral control is positively related to purchase intention. This is the only hypothesis result that differs from Paul et al. (2016), which actually found a positive correlation between perceived behavior control and sustainable purchase intention, a result that is also found in multiple research studies that utilize the TPB to measure the impact between perceived behavior control and sustainable behavior (Chen & Tung, 2014; Paul et al., 2016; Vermeir & Verbeke, 2008; Wang, Fan, Zhao, Yang, & Fu, 2016; Yadav &

Pathak, 2016). This difference may be due to the nature of the specific green buying behavior that was chosen to be the focus of this research (local purchasing). Consumers' capability to purchase local products varies depending on multiple factors: price, availability, knowledge of local suppliers, convenience etc. It is reasonable to assume that the perceived difficulty to purchase local products varies greatly among respondents, which might explain why hypothesis 7 was not supported.

Concerning the results regarding the influence of demographic variables on local purchasing intention, findings show that neither occupation nor age significantly affect intention. Different genders, on the other hand, showed a significant discrepancy regarding local purchasing intention, signalizing that women are 7.75% more likely to buy local products than men. This result resonates with several studies that analyzed the role of gender on sustainable consumption. In general, prior research suggests that women are more likely than men to engage in sustainable consumption behaviors (Lazaric et al., 2020).

5.2 Implications for management

Based on the present results, a few suggestions can be made to help marketeers within corporate, governmental and non-profit institutions in building successful strategies to incentivize the purchase of local products:

1) Environmental concern is the factor that most influences consumers intention to buy local products. Campaigns should focus on communicating the potentially reduced environmental impact caused by locally produced goods and how its purchase is crucial to help with climate change mitigation and the overall wellbeing of the planet.
2) The most effective path towards increasing local products purchase intention is by imbedding both elements that reinforce positive attitude towards local products and environmental concern. Given that attitude also showed a significant positive correlation towards local purchasing behavior, reinforcing consumer's positive beliefs regarding buying local goods in combination with suggestion number 1 can possibility generate an efficient marketing strategy to encourage local purchasing behavior. We consider this to be a relevant action since individual consumer's choices have a relevant impact in mitigating the effects of climate change (Poore & Nemecek, 2018), however the link between environmentally friendly behavior

and local purchasing is not clear to all consumers. Initiatives such as "Green Friday", a movement born in Canada in the 90's that is now gaining popularity among countries in Europe, and "Meat free Monday", a growing international movement, are try to bring awareness to the environmental impact of consumption choices and incentivize sustainable behavior. Such movements and initiatives are crucial to help educate and change consumer's buying behavior towards environmentally friendly behavior. A combination of community, governmental and institutional efforts is necessary to bring awareness to consumers on their power to help reduce the impacts of climate change.

4. As subjective norm does not seem to be a defining factor for local purchasing behavior, as in Paul et al. (2016), campaigns to encourage local purchasing behavior should attempt to address the individuality of consumers, given that environmental concern can be a defining trace of personality and local purchasing a personal choice.
5. As women show a higher predilection to purchasing local goods, campaigns oriented to the feminine public will likely have good results.
6. To reduce the gap between male and female local purchase intention, male-dedicated campaigns could be effective. Highlight the importance of the male role in reducing environmental impact can be an effective message to incentivize male local purchasing intention.
7. Given that age and occupation were not found to be a relevant factor to differentiate local purchasing intention target groups, marketing professionals should take into consideration this type of segmentation is not needed when elaborating a campaign to incentivize local purchasing behavior.

5.3 Study limitations and recommendations for future studies

The first limitation presented by this research lies on its sampling approach: non-probabilistic by convenience. Such technique does not allow for results that represent the whole population which restricts generalization.

Another limitation is the fact that the questionnaire was mostly shared via university platforms such as academic groups and email, which reduces the diversity of the sample.

The present research is limited also by the questionnaire in two aspects: the scale was adapted from the original version and translated from English to Portuguese. Both processes could have affected the outcome of this study.

In what concerns future studies, there are a number of possible research avenues. First of all, this study's limitation provides some directions for further research. As this study uses a non-probabilistic sample, it would be beneficial if future studies would utilize a sampling method that would allow for generalization to a wider context.

Qualitative research to help uncover other factors that are relevant to understand green consumption behavior in general and buy local intention in particular is also a promising route. Factors such as self-concept and identity, for example, may be useful to understand what factors trigger environmental concerns and related behaviors (Sharma, Saha, Sreedharan, & Paul, 2020).

It would also be valuable that future studies could explore factors that influence other types of sustainable consumption behavior such as reducing meat and dairy consumption and air travel.

In what concerns identifying which segments are more prone to adopt green and sustainable behavior, further research to understand what are the factors that influence male and female local purchasing behavior could also add valuable knowledge to the current literature on sustainable consumption.

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7 Appendix

Appendix 1 **– Questionnaire scale by Paul et al. (2016, p. 131)**

Attitude towards purchasing green products
1. I like the idea of purchasing green.
2. Purchasing green is a good idea.
3. I have a favourable attitude toward purchasing green version of a product.
Subjective norm
1. Most people who are important to me think I should purchase green products when going for purchasing.
2. Most people who are important to me would want me to purchase green products when going for purchasing.
3. People whose opinions I value would prefer that I purchase green products.
4. My friend's positive opinion influences me to purchase green product.
Perceived behavioural control
1. I believe I have the ability to purchase green products.
2. If it were entirely up to me, I am confident that I will purchase green products.
3. I see myself as capable of purchasing green products in future.
4. I have resources, time and willingness to purchase green products.
5. Green products are generally available in the shops where I usually do my shopping.
6. There are likely to be plenty of opportunities for me to purchase green products.
7. I feel that purchasing green products is not totally within my control.
Environmental concern
1. I am very concerned about the environment.
2. I would be willing to reduce my consumption to help protect the environment.
3. Major political change is necessary to protect the natural environment.
4. Major social changes are necessary to protect the natural environment.
5. Anti-pollution laws should be enforced more strongly.
Purchase intention for green products
1. I will consider buying products because they are less polluting in coming times.
2. I will consider switching to environmental friendly brands for ecological reasons.
3. I plan to spend more on environmental friendly product rather than conventional product.
4. I expect to purchase product in the future because of its positive environmental contribution.
5. I definitely want to purchase green products in near future.

Appendix II – Questionnaire

Consumo de produtos locais

Este questionário está inserido numa investigação no âmbito do Mestrado em Marketing e Estratégia da Universidade do Minho cujo objetivo é compreender o comportamento de compra do consumidor de produtos locais. Os dados fornecidos são confidenciais e anônimos.

A sua participação é uma valiosa contribuição para este estudo e leva apenas 5 minutos. Obrigada!

* Required

Para fins da pesquisa acadêmica, considere: produto local é um produto produzido em sua área de residência (concelho ou território nacional).

1 Em rela ã às afirmações abaixo, selecione a resposta com a qual se identifica usando a seguinte escala: de “1. discordo totalmente” a “5. concordo totalmente” *

Mark only one oval per row.

	1. Discordo totalmente	2. Discordo	3. Indiferente	4. Concordo	5. Concordo totalmente
Eu gosto da ideia de comprar produtos locais.	◯	◯	◯	◯	◯
Comprar produtos locais é uma boa ideia.	◯	◯	◯	◯	◯
Tenho uma atitude favorável em relação à compra de produtos locais.	◯	◯	◯	◯	◯
A maioria das pessoas importantes para mim acha que devo dar preferência à compra de produtos locais.	◯	◯	◯	◯	◯
A maioria das pessoas importantes para mim gostaria que eu comprasse produtos locais.	◯	◯	◯	◯	◯
Pessoas cujas opiniões eu valorizo preferem que eu compre produtos locais.	◯	◯	◯	◯	◯
A opinião positiva dos meus amigos me influencia a comprar produtos locais.	◯	◯	◯	◯	◯
Acredito que tenho a capacidade de comprar produtos locais.	◯	◯	◯	◯	◯
Eu me vejo capaz de	◯	◯	◯	◯	◯

comprar produtos locais no futuro.					
Tenho recursos, tempo e vontade de comprar produtos locais.	⬭	⬭	⬭	⬭	⬭
Geralmente, produtos locais estão disponíveis nos pontos de venda onde costumo fazer minhas compras.	⬭	⬭	⬭	⬭	⬭
Sinto que produtos locais muitas vezes são mais caros.	⬭	⬭	⬭	⬭	⬭

2 Em rela ã às afirmações abaixo, selecione a resposta com a qual se identifica usando a seguinte escala: de “1. discordo totalmente” a “5. concordo totalmente” *

Mark only one oval per row.

	1. Discordo totalmente	2. Discordo	3. Indiferente	4. Concordo	5. Concordo totalmente
Há muitas oportunidades para eu comprar produtos locais.	◯	◯	◯	◯	◯
Sinto que a compra de produtos locais não depende totalmente de mim.	◯	◯	◯	◯	◯
Estou muito preocupado com o meio ambiente.	◯	◯	◯	◯	◯
Eu estaria disposto a reduzir meu consumo para ajudar a proteger o meio ambiente.	◯	◯	◯	◯	◯
São necessárias grandes mudanças políticas para proteger o meio ambiente natural.	◯	◯	◯	◯	◯
São necessárias grandes mudanças sociais para proteger o ambiente natural.	◯	◯	◯	◯	◯
As leis antipoluição devem ser aplicadas com mais força.	◯	◯	◯	◯	◯
Considerarei comprar produtos locais porque eles são menos poluentes.	◯	◯	◯	◯	◯
Considerarei mudar de marcas para favorecer	◯	◯	◯	◯	◯

produtores locais por razões ecológicas.					
Eu pretendo gastar mais em produtos locais do que em produtos produzidos em regiões afastadas.	◯	◯	◯	◯	◯
Espero comprar produtos locais no futuro por causa de sua contribuição ambiental positiva.	◯	◯	◯	◯	◯
Eu definitivamente quero comprar produtos locais em um futuro próximo.	◯	◯	◯	◯	◯

3. Gênero: *

Mark only one oval.

◯ Feminino
◯ Masculino
◯ Prefiro não dizer

4. Idade *

5 Ocupa ã : *

Mark only one oval.

- ◯ Estudante
- ◯ Prestador(a) de serviços
- ◯ Trabalhador(a) por conta própria
- ◯ Trabalhador(a) por conta de outrem no setor público
- ◯ Trabalhador(a) por conta de outrem no setor privado
- ◯ Reformado/a
- ◯ Desempregado/a

6. Nível de escolaridade: *

Mark only one oval.

- ◯ Sem estudos
- ◯ Ensino básico
- ◯ Ensino secundário
- ◯ Licenciatura
- ◯ Pós graduação
- ◯ Mestrado
- ◯ Doutoramento