

MASTER
INNOVATION AND RESEARCH FOR
SUSTAINABILITY

MASTER'S FINAL WORK
DISSERTATION

MIND THE GAP: A STUDY OF THE SUSTAINABILITY
ATTITUDE-BEHAVIOR GAP IN THE FOOD SECTOR

JÚLIA KATZ DORELLA LINHARES

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SUPERVISION:

ANÍBAL LOPEZ

MAY - 2026



Lisbon School
of Economics
& Management
Universidade de Lisboa

Declaration of AI Use

This master's thesis was developed strictly following the integrity norms and procedures of the University. For the sake of transparency, I hereby disclose that certain AI tools were used. The tools and the purposes of their use were as follows:

- ChatGPT and Gemini: Employed for language revision (improving grammar, spelling, clarity, and style) while ensuring the preservation of the original content. These tools also assisted in translating text from Portuguese to English and identifying key authors and texts. Additionally, they were used to organize and format bibliographic references. Representative prompts included:
 - “Correct grammar, spelling, and punctuation in the following text”
 - “Enhance the cohesion and fluency of this passage.”
 - “Translate this paragraph into English, maintaining the original meaning in academic English.”
 - “Who are the main authors and key texts regarding [ABG; TPB; TRA; Sustainable Consumption]?”
 - “Put this reference in APA style”
- NotebookLM: Utilized to process and synthesize the specific bibliography previously selected and uploaded by the author, to facilitate the location of specific arguments, and supported extensive reading by organizing notes for consultation. Its use did not replace the comprehensive reading of the original sources.

The use of AI was strictly limited to the linguistic and organizational tasks described above. All conceptual development, data analysis, and final conclusions were exclusively conducted by the author. I maintain full intellectual authorship and responsibility for the manuscript's integrity, ensuring that no data fabrication, plagiarism, or unauthorized content generation occurred. This work reflects an ethical approach to AI assistance, and I take full responsibility for its content.

Glossary

ABG – Attitude-Behavior Gap

FAO – Food and Agriculture Organization

GHG – Greenhouse Gas

IBM SPSS Statistics – IBM statistical analysis software

IPCC – Intergovernmental Panel on Climate Change

OECD – Organisation for Economic Co-operation and Development

PBC – Perceived Behavioral Control

PCE – Perceived Consumer Effectiveness

SDGs – Sustainable Development Goals

SFC – Sustainable Food Consumption

TBL – Triple Bottom Line

TPB – Theory of Planned Behavior

TRA – Theory of Reasoned Action

UNEP – United Nations Environment Programme

UNESCO – United Nations Educational, Scientific and Cultural Organization

WCED – World Commission on Environment and Development

Abstract

Sustainability is one of the major challenges of the 21st century. Despite growing environmental concern, consumer actions often do not align with their intentions, a phenomenon known as the Attitude-Behavior Gap (ABG).

This study investigates the individual and contextual factors influencing the translation of purchase intentions into sustainable food purchasing behavior. It examines the moderating roles of product availability, social norms, and perceived individual impact, while exploring how these dynamics can catalyze business innovation.

A quantitative research approach was employed, integrating a comprehensive literature review with a cross-sectional online survey (N=103). Data were analyzed using linear regression and the PROCESS macro to test both direct relationships and moderation effects.

The results confirm that intention is a significant antecedent of sustainable behavior, while the analyzed barriers (availability, social norms, and perceived impact) did not statistically moderate the relationship between intention and action. Notably, product availability and environmental knowledge emerged as significant direct antecedents of behavior.

This study advances the existing literature by empirically confirming that intention serves as a key antecedent of behavior in the context of sustainable food consumption. Furthermore, it provides practical insights for businesses on leveraging consumer intentions to promote sustainable practices. By reframing the Attitude–Behavior Gap as a latent market opportunity, this research highlights paths for business strategies aimed at aligning consumer values and intentions with effective purchasing behavior.

Keywords: Attitude–Behavior Gap (ABG); Sustainable Food Consumption; Consumer Behavior; Theory of Planned Behavior (TPB); Theory of Reasoned Action (TRA); Sustainability; Market opportunity

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1. Introduction

Sustainability has become a central issue of the 21st century, driven by unprecedented global environmental challenges that threaten planetary balance, human well-being, and the conditions necessary for future generations (PBScience, 2025). Several major industries, including the food sector, the built environment, mobility, and energy, contribute significantly to this crisis, demonstrating how contemporary production and consumption patterns are intrinsically linked to environmental degradation (UNEP, 2024).

The global food system alone accounts for 21–37% of greenhouse gas emissions (IPCC, 2019), uses 70% of freshwater resources (UNESCO, 2024), and contributes to deforestation, biodiversity loss, soil degradation, and food waste (FAO, 2021). Within this context, the food sector stands out as an area in which individual choices play a particularly significant role (Poore & Nemecek, 2018). Eating is a daily and universal act, making dietary decisions highly influential in shaping environmental impacts (Garnett, 2014). However, despite growing environmental awareness, behavioral change remains limited (GlobeScan, 2021).

Consumers frequently face a trade-off between personal convenience and environmental responsibility. As a result, reducing the environmental footprint of the food system requires not only systemic industrial transformations, but also substantial shifts in individual consumption patterns. Although sustainable consumption has become a major societal concern, a significant discrepancy persists between consumers' stated intentions and their actual purchasing behavior, a phenomenon widely recognized in the literature as the attitude–behavior gap (ABG) (Kollmuss & Agyeman, 2002; Peattie, 2010; Vermeir & Verbeke, 2006). For instance, while more than 60% of consumers report being willing to pay more for sustainable products, only 17% effectively adopt more sustainable consumption practices (GlobeScan, 2021).

Previous studies suggest that the ABG is influenced by multiple barriers, including contextual factors such as price and product availability, logistical constraints such as convenience and effort, psychological barriers such as low perceived individual impact and lack of trust in certifications, and socio-cultural influences such as habits and social norms (Andrade & Vieites, 2025; Enamala et al., 2025; Girisaran & Khanna, 2025; Vermeir & Verbeke, 2006). While the literature extensively discusses these barriers and the psychological dimensions of sustainable

consumption (Ajzen, 1991; Vermeir & Verbeke, 2006), fewer studies explore how understanding the ABG can generate opportunities for innovation and new market solutions within the sustainable food sector.

Accordingly, this study seeks to answer the following research question: *How do individual and contextual factors influence the translation of purchase intentions into actual sustainable food consumption behavior?*

This research is relevant from both academic and practical perspectives. From an academic standpoint, the study contributes to the integration of consumer behavior theories with the attitude–behavior gap framework within the context of sustainable food consumption (SFC), establishing a theoretical convergence between the Theory of Planned Behavior (TPB) and the ABG literature. From a practical perspective, the research aims to provide actionable insights into how organizations can better understand latent consumer demand and transform existing barriers into opportunities to foster the development of sustainable food consumption markets. In doing so, the study offers a new perspective on the ABG, viewing it not only as a limitation to sustainable consumption, but also as a potential driver of innovation and transformation within the food sector.

Understanding the attitude–behavior gap (ABG) is essential not only for advancing consumer behavior research, but also for supporting more effective strategies to promote sustainable food consumption. In this context, the study examines the relationship between purchase intention and actual purchasing behavior, considering the moderating effects of social norms, product availability, and perceived environmental impact, which were selected based on barriers commonly identified in previous studies on sustainable consumption (Enamala et al., 2025; Girisan & Khanna, 2025; Vermeir & Verbeke, 2006). By analyzing how these factors influence the attitude–behavior gap, the research seeks to contribute to the development of strategies capable of encouraging a more consistent adoption of sustainable consumption practices.

2. Literature Review

This chapter presents the concepts of the attitude–behavior gap (ABG) within sustainable food consumption (SFC), examining theoretical perspectives on consumer behavior, sustainability and sustainable consumption. It highlights behavioral intention as a key predictor of action and the barriers to adopting more responsible dietary practices, drawing on the work of reference scholars. Grounded in the Theory of Planned Behavior (TPB), purchase intention is positively related to the purchase of sustainable products, as higher levels of intention reflect greater effort and willingness to act; however, the literature highlights that this relationship is often weakened by contextual and situational barriers, contributing to the persistence of the ABG.

The literature review establishes the conceptual basis for examining the study’s research question and hypotheses.

2.1. Sustainability

The concept of sustainability emerged as a response to the growing environmental, social, and economic challenges that characterize the contemporary global context (WCED, 1987). Although it has been refined over the past decades, its initial foundations continue to serve as a central theoretical reference.

The first widely recognized definition of sustainability was presented in the Brundtland Report (WCED, 1987), prepared by the United Nations World Commission on Environment and Development (WCED). The document defined “sustainable development” as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”. This formulation sought to reconcile economic development, environmental protection, and social justice, recognizing that the prevailing growth model generated environmental crises and inequalities incompatible with long-term well-being. By stating that environment and development are not separate spheres, the report established the foundations for the systemic understanding later adopted.

The evolution of this concept gained momentum in the following years, especially with the contribution of John Elkington (1997), who introduced the Triple Bottom Line (TBL) model. This approach presents the idea that sustainability requires a simultaneous balance among three dimensions, economic, environmental, and social, reinforcing that corporate performance cannot be measured exclusively by profit, but also by socio-environmental impact.

Currently, sustainability is understood as a continuous process of structural transformation, aimed at harmonizing economic growth, social inclusion, and environmental preservation by the UN 2030 Agenda and the Sustainable Development Goals (SDGs) (United Nations, 2015). The Agenda 2030 operationalizes the concept by proposing integrated goals and targets to promote more sustainable patterns of production and consumption, reduce inequalities, and protect the planet. The Agenda 2030 is based on the recognition that global challenges are interconnected and require systemic changes across value chains, individual behaviors, and public policies (United Nations, 2015).

Thus, sustainability can be synthesized as the ability to maintain development over time, ensuring that natural, social, and economic capital is sufficient to support present and future generations. It involves balancing economic prosperity, human well-being, and environmental integrity within planetary boundaries (Richardson et al., 2023).

2.2. Sustainable consumption

Consumption is a central element of social life and economic history. In addition to satisfying basic needs such as food, housing, mobility, leisure, and recreation, the act of consuming also performs fundamental symbolic and cultural functions. It operates as a powerful mechanism for the creation of identity and social identification (Jackson, 2005). Individuals consume to meet subsistence needs, but also to reaffirm their positions, personality, and role within their social group (Jackson, 2005). Thus, consumption contributes to identity formation, the expression of status, and the construction of meaning in social interactions (Jackson, 2005). Material goods, therefore, are not only important for their functional use, but also for the symbolic meanings they carry, acting as mediators of social norms, cultural belonging, and recognition within groups (Jackson, 2005).

This symbolic dimension of consumption reveals the structuring role that the social context plays in consumer behavior. Social norms, cultural expectations, and group pressure shape what is considered desirable or acceptable to consume, influencing both intention and action. This strong influence of social context is a crucial starting point, as behavior is affected by social pressure and norms. Which provides the basis for including Social Norms as a moderating variable and for formulating H4.

However, consumers are not entirely free to choose what to consume. They often find themselves “trapped” in unsustainable consumption patterns due to structural barriers such as limited access, socioeconomic inequalities, institutional constraints, dominant business models,

and the very architecture of market incentives. They are also frequently limited by pre-existing unsustainable consumption patterns (Jackson, 2005). Among the previously mentioned barriers are the perception of higher prices, limited product availability, convenience, lack of trust in certifications, insufficient information, and perceptions of quality and the impact of individual change.

This justifies the hypothesis of the study, which aims to analyze how these barriers actually function as moderators between consumers' purchase intentions and their actual behavior.

It is important to emphasize that this study does not intend to demonize consumption. Consumption is an inherent part of modern societies and can generate well-being, economic development, and cultural expression. The problem is not consumption itself, but the current patterns of production and consumption, whose material and energy intensity exceed planetary limits and therefore cannot be sustained (UNEP, 2024). The need to rethink these patterns leads to the concept of sustainable consumption.

Although there is still no absolute consensus on its definition, it is widely accepted that sustainable consumption is based on multiple dimensions, including environmental sustainability, focused on the ecological impacts of the product life cycle; social sustainability, related to working conditions, social justice, and community impact; and economic sustainability, aimed at ensuring resilience and continuity of business activities (Šajn, 2020).

The widely used definition in international reports is “the use of goods and services that respond to basic needs and provide a better quality of life, while minimizing the use of natural resources, toxic materials, and emissions of pollutants over the life cycle, so as not to jeopardize the needs of future generations” (UNEP, 2010).

UNEP complements this view, adding that sustainable consumption and production means doing more and better with less, by decoupling economic growth from environmental degradation, increasing resource efficiency, and promoting sustainable lifestyles. In this sense, sustainable consumption is defined as the use of products or services to meet consumer demand and improve quality of life while reducing the use of non-renewable resources, hazardous substances, and waste generated during consumption (Kristia et al., 2023).

In summary, understanding consumption as a social practice influenced by symbolic, cultural, and structural factors makes it clear that the adoption of sustainable consumption does not depend exclusively on individual will, but rather on a set of social, economic, and institutional

conditions that shape and limit consumer choices. From this perspective, it becomes clear that the challenges associated with sustainable consumption arise not only from individual barriers but also from the existing production and distribution systems, revealing the need to transform both attitudes and structures. The concept of sustainable consumption offers a comprehensive perspective that articulates environmental, social, and economic dimensions, establishing the conceptual foundations for the discussions in this research.

2.2.1. Sustainable food consumption (SFC)

The definition of sustainable consumption has been applied to sectors, such as energy, household use, tourism and the food sector. In this study, the focus is on the food system, which makes it essential to clarify the concept of Sustainable Food Consumption (SFC), given that it represents a central objective in global sustainability agendas, as evidenced by SDGs 12.3 and 2.4 (Kristia et al., 2023). For example, SDG target 2.4 aims to ensure sustainable food production systems, while SDG target 12.3 focuses on reducing food waste, demonstrating the need for transformations in both production and consumption patterns.

Although sustainable consumption is important in different domains, the food system stands out due to its high contribution to environmental and social impacts. As presented in the Introduction, the production and consumption of food account for a significant share of GHG emissions, intensive water use, and biodiversity loss, making food choices a critical point of intervention (FAO, 2021; IPCC, 2019).

SFC should not be understood as an isolated act, but rather as a process that involves meeting consumers' food needs while considering the entire production chain, from acquisition to disposal, and seeking to minimize environmental impacts (Kristia et al., 2023). In this sense, consumers who attempt to adopt more sustainable practices begin to consider various aspects: the type of diet they follow (with emphasis on plant-based diets, recommended to reduce climate impacts), food production methods, raw materials used, disposal practices, and waste prevention (Kristia et al., 2023). In practice, SFC covers behaviors such as consuming organic foods, reducing meat consumption and prioritizing plant-based diets, purchasing local and seasonal foods, and adopting practices that minimize waste (Kristia et al., 2023).

The consolidated concept was presented at the International Scientific Symposium named "Biodiversity and Sustainable Diets: United Against Hunger," held by the Food and Agriculture

Organization (FAO) and Bioversity International in 2010, where the first official definition of sustainable diets was established. The event took place in a context of food crises, biodiversity loss, and increasing diet-related diseases, showing that current food systems were unsustainable: while 1 billion people faced hunger, others suffered from obesity and chronic illnesses (Burlingame & Dernini, 2012).

The definition, as documented by Burlingame and Dernini (2012), states:

“Sustainable diets are those with low environmental impacts which contribute to food and nutrition security and to a healthy life for present and future generations; they protect and respect biodiversity and ecosystems; are culturally acceptable, accessible, economically fair; nutritionally adequate, safe and healthy; while optimizing natural and human resources”

This definition sets out the principles that guide the concept of SFC and indicates the need for profound transformations in food systems, oriented towards efficiency and equity, promoting foods with lower carbon and water footprints and encouraging the use of food biodiversity, including traditional and local foods.

SFC, therefore, refers to eating patterns that reconcile human health, food security and low environmental impact, while respecting cultural, social, and economic aspects (Burlingame & Dernini, 2012). The concept encompasses both the type of food consumed and associated behaviors, such as avoiding waste and prioritizing ethical and sustainable products.

However, adopting SFC presents significant challenges. Food choices are deeply personal and embedded in cultural, social, and emotional routines. In addition to the common barriers to sustainable consumption, many of them already mentioned in this study, (such as perceptions of higher prices, limited product availability, convenience, lack of trust in certifications, insufficient information, and doubts about individual impact), within the food context these barriers are compounded by more personal and immediate factors that often outweigh sustainability concerns. Such factors include food taste, the search for pleasure (hedonism), and personal health as a primary decision factor (Vermeir and Verbeke, 2006).

The need to balance often conflicting demands, (taste, price, health, and sustainability), makes SFC one of the most challenging fields for behavioral change. Understanding how these barriers operate is therefore essential for analyzing the ABG, which is the focus of the next chapter.

2.1. Consumer behavior

To understand consumer behavior and the factors that influence the translation of intention into action in sustainable consumption contexts, it is important to examine how theories explain the formation of attitudes, intentions and the adoption of behaviors. The Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) adopts a cognitivist perspective, assuming that individuals make decisions rationally and that their behaviors result from beliefs, attitudes, and intentions.

Ajzen (1991) extended this model through the Theory of Planned Behavior (TPB) by introducing perceived behavioral control (PBC), recognizing that behavior can be constrained by barriers, resources, or conditions perceived by the individual despite favorable intentions. The theory increases the explanatory capacity of the relationship between intention and behavior, although it still assumes a cognitive and intentional process.

The debate on sustainable consumption highlights a recurring phenomenon: the attitude–behavior gap (ABG), defined as the discrepancy between positive environmental attitudes and actual sustainable behavior (Vermeir & Verbeke, 2006). Although not a formal theory, the ABG is widely discussed in the literature (e.g., Kollmuss & Agyeman, 2002; Peattie, 2010; Vermeir & Verbeke, 2006), revealing the limitations of approaches based exclusively on intention to explain behavior. While not derived from the TPB, the ABG engages with it by demonstrating that contextual, structural, and social factors may constrain sustainable behavior.

These concepts constitute the conceptual basis for this study and support the analysis of the factors that influence the transformation of intentions into sustainable behaviors.

2.1.1. Theory of Reasoned Action

The TRA (Fishbein & Ajzen, 1975) is one of the most influential theoretical approaches for understanding and predicting intentional human behavior. It provides a systematic model to explain the psychological processes through which individuals make decisions and translate them into action (Fishbein & Ajzen, 1975).

The TRA assumes that individuals are rational actors who process information to form intentions, the primary determinant of behavior (Fishbein & Ajzen, 1975). According to Fishbein and Ajzen (1975), intention is shaped by two core elements: attitude toward the behavior, the individual's positive or negative evaluation of a behavior based on its expected consequences and

beliefs about those consequences (behavioral beliefs), and subjective norms, representing the social pressure to perform or not perform the behavior, derived from normative beliefs (what significant others consider appropriate) (Fishbein & Ajzen, 1975). See Appendix D.

The TRA therefore organizes decision-making as a rational and sequential process in which beliefs shape attitudes and subjective norms, which determine behavioral intention and, consequently, behavior (Fishbein & Ajzen, 1975). Intention represents the individual's motivation and subjective probability of acting and serves as the immediate antecedent of observable behavior, being considered the primary, consistent predictor of behavior (Fishbein & Ajzen, 1975).

However, its accuracy depends on specific behavioral definitions and applies only to actions under volitional control. Thus, intention alone is insufficient unless supported by stable attitudes and norms (Fishbein & Ajzen, 1975).

The theory also explains that part of the observed gap results from attempts to predict specific actions based on general attitudes (Fishbein & Ajzen, 1975). While general attitudes predict broad behavior patterns, individual actions require equally specific intentions (Fishbein & Ajzen, 1975).

Thus, despite its seminal contribution, the application of the TRA in complex contexts has revealed important limitations, especially because many behaviors are not entirely under volitional control (Ajzen, 1991).

Recognizing these limitations, Ajzen (1991) expanded the theory and developed the TPB, introducing the construct of PBC, which allows the incorporation of external barriers to action execution (Ajzen, 1991). The TRA is therefore used here as the historical and conceptual foundation for understanding the limitations that motivated the development of the subsequent model.

2.1.2. Theory of Planned Behavior

The TPB was developed by Ajzen (1991) as an extension of the TRA, originally formulated by Fishbein and Ajzen (1975). The new theory sought to overcome limitations of the original one, particularly regarding behaviors over which individuals do not have complete volitional control, while still assuming that intention to perform a behavior is the primary determinant of its execution (Ajzen, 1991).

A key contribution of the TPB is the inclusion of perceived behavioral control (PBC), which acknowledges that behavior is shaped not only by intention but also by the individual's perceived control over the factors required for its execution (Ajzen, 1991). Within this framework, intention results from the combined influence of three antecedents: attitude toward the behavior, subjective norms, and perceived behavioral control. Consequently, the more favorable the attitude and subjective norm and higher perceived control, the stronger the intention to act (Ajzen, 1991).

Ajzen (1991) further emphasizes that intention only converts to behavior when under actual control, requiring non-motivational factors such as time, money, and resources. Therefore, strong intention combined with the necessary opportunities and resources tends to result in successful behavior performance.

Based on these two theories, it is considered relevant to investigate, as the first hypothesis, whether purchase intention directly influences the purchasing behavior of sustainable products. From this principle, the first hypothesis of this study emerges:

H1: *Purchase intention is positively related to sustainable food purchase, assuming that higher levels of intention indicate greater effort toward performing the behavior.*

PBC is central to understanding the relationship between intention and behavior, as it influences both intention formation and the effort invested in action and may function as a substitute for actual control when perception is sufficiently accurate (Ajzen, 1991). The theory uses three determinants of action: attitude, subjective norms, and PBC (Ajzen, 1991).

In summary, PBC explains why intention alone does not always lead to behavior, as it can inhibit intention formation, weaken perseverance during action, or create psychological barriers when perceived control is inaccurate, even in the absence of real constraints (Ajzen, 1991).

Although the TPB explains how attitudes, norms, and PBC shape intention, empirical research in sustainable consumption reveals a persistent gap between intentions and actual behavior (Carrington, Neville & Whitwell, 2010). This gap, known as the ABG, highlights the limitations of purely intention-based models and is essential for understanding why favorable consumer attitudes toward sustainability do not always translate into concrete action, as discussed in the next section (Carrington, Neville & Whitwell, 2010).

2.1.3. Attitude–Behavior Gap

The Attitude–Behavior Gap (ABG) is the discrepancy between favorable intentions and actual behavior, occurring when consumers hold sustainable convictions but fail to act on them during decision-making (Carrington et al., 2010). This gap helps explain why transitions toward responsible consumption progress more slowly than expected, despite growing awareness and stated intent (GlobeScan, 2021).

The discussion of the ABG emerges from the limitations of the TRA (Fishbein & Ajzen, 1975) and the TPB (Ajzen, 1991). Although these theories recognize that attitudes and intentions are important antecedents of behavior, empirical literature shows they frequently fail to translate into action.

This gap raises the question of why consumers, despite having intentions to consume more sustainably and access to information, frequently revert to conventional patterns (GlobeScan, 2021).

Several barriers contribute to the ABG. Among the most recurrent barriers identified in the literature reviewed (Enamala et al., 2025; Girisaran & Khanna, 2025; Andrade & Vieites, 2025; Vermeir & Verbeke, 2006) are higher price perceptions, limited product availability, convenience, low trust in certifications, insufficient information, quality perceptions, low perceived impact of individual behavior change, social context and social norms, as well as deeply embedded cultural habits. These factors hinder the translation of pro-environmental intentions into effective sustainable consumption behaviors.

The ABG is particularly evident in sustainable consumption: while consumers increasingly value and intend to purchase sustainable products, actual conversion remains low (Vermeir & Verbeke, 2006). Even those with strong ethical commitments frequently revert to conventional patterns when faced with concrete purchasing decisions (GlobeScan, 2021).

The ABG constitutes a central phenomenon for understanding why sustainable behaviors do not progress at the desired pace, despite the expressive rise in intention and environmental awareness, and it demonstrates that traditional cognitive models are insufficient to explain complex behaviors, especially those that depend on contextual, emotional, and structural factors. In this sense, it becomes increasingly clear that intention is necessary but not sufficient, and that sustainable behaviors depend on additional conditions that extend beyond individual rationality (Kollmuss & Agyeman, 2002).

2.1.3.1. Barriers to sustainable consumption

As previously discussed, several barriers contribute to the ABG. The literature indicates that in sustainable consumption, the ABG results from factors that act as barriers to translating intentions into concrete behavior (Vermeir & Verbeke, 2006). For the context of this study, three main barriers were selected for in-depth analysis, serving as core variables of the proposed model, which will be detailed in the chapter.

Situational factors such as price (Enamala et al., 2025; Girisan & Khanna, 2025; Andrade & Vieites, 2025), convenience (Enamala et al., 2025), the gap between perceived and actual control (Vermeir & Verbeke, 2006), and product availability (Enamala et al., 2025; Girisan & Khanna, 2025; Vermeir & Verbeke, 2006) stand out.

Given its consistent identification as a key barrier in several studies (Enamala et al., 2025; Girisan & Khanna, 2025; Vermeir & Verbeke, 2006) and its role in limiting consumers' ability to act on their sustainable intentions, Product Availability was selected as a moderating variable in this study, leading to the formulation of the second hypothesis:

H2: *Product availability moderates the positive relationship between purchase intention and sustainable food purchase, and this relationship is stronger for consumers with lower sensitivity to availability and convenience.*

Psychological factors, such as personal involvement (Vermeir & Verbeke, 2006) and trust in sustainability claims, often undermined by greenwashing concerns, significantly constrain informed decision-making (Andrade & Vieites, 2025; Enamala et al., 2025; Girisan & Khanna, 2025). Perceived Consumer Effectiveness (PCE) or Perceived Individual Impact emerges as a key driver; consumers who believe their individual actions matter show greater consistency between intention and behavior (Vermeir & Verbeke, 2006). Considering that this factor has been identified as a barrier in several studies on the ABG in sustainable consumption, it was deemed an important aspect to be analyzed in greater depth in this study. Therefore, Perceived Individual Impact was selected as one of the study's moderating variables, leading to the third hypothesis:

H3: *Perceived Individual Impact positively moderates the relationship between purchase intention and sustainable food purchase. .*

Cultural habits (Vermeir & Verbeke, 2006; Girisan & Khanna, 2025), perceptions of product quality favoring conventional alternatives (Andrade & Vieites, 2025), and social norms variables (Andrade & Vieites, 2025; Vermeir & Verbeke, 2006) further reinforce resistance to

behavioral change. Social norms play a critical role in shaping consumption behavior, as they may either inhibit or encourage sustainable choices and can even induce sustainable behavior among consumers with initially weak pro-environmental attitudes. Based on this rationale, Social Norms (Andrade & Vieites, 2025; Vermeir & Verbeke, 2006) was included as moderating in this study, giving rise to the following hypothesis:

H4: *Social norms moderate the positive relationship between purchase intention and sustainable food purchase, such that this relationship weakens when consumers are exposed to social norms that discourage sustainable behaviors.*

Furthermore, as also discussed in the literature, there are some specific barriers in the context of SFC, as barriers are intensified by more personal and immediate factors that often outweigh sustainability concerns. These include food taste, the search for pleasure (hedonism), and personal health as a primary decision criterion, as highlighted by Vermeir and Verbeke (2006).

The criteria adopted for selecting the barriers as model variables were, first, the frequency with which the concepts appear in the analyzed literature, particularly in the case of availability (Enamala et al., 2025; Girisan & Khanna, 2025; Vermeir & Verbeke, 2006). In the case of social norms, their recurrent presence in classical and foundational studies on the ABG, especially the work of Vermeir and Verbeke (2006), was also taken into account.

Regarding perception of individual impact, also referred to in the literature as PCE, defined as the belief that individual actions can meaningfully contribute to environmental outcomes, in addition to its relevance in the seminal ABG literature (Vermeir & Verbeke, 2006), this study builds on the understanding that belief in the effectiveness of individual actions directly affects consumers' ability to translate pro-environmental intentions into effective behavior, thus acting as a central mechanism of the ABG and justifying its inclusion in the proposed analytical model. Additionally, price was included as a control variable, given its assumed relevance across different consumption contexts.

Despite the multiplicity of factors contributing to the gap, this study focuses on a specific set of barriers that act as moderating variables in the relationship between intention and purchasing behavior.

2.4. The proposed conceptual model

The proposed conceptual model, presented in Appendix E, emerges as a synthesis of the concepts and hypotheses discussed in the literature review and aims to provide an integrated visual representation of the relationships examined in this study. The model structure is intended to facilitate understanding of the interactions between intention, behavior, and the factors that influence the translation of intentions into effective actions within the context of sustainable consumption.

As widely discussed in the consumer behavior literature, intention is considered one of the primary predictors of behavior. Classical authors within the TRA and the TPB argue that behavioral intention represents the most immediate antecedent of observed behavior (Fishbein & Ajzen, 1975; Ajzen, 1991). In the proposed model, intention is operationalized as purchase intention (Variable 01: Independent variable), while behavior is operationalized as sustainable purchase behavior (Variable 02: Dependent variable).

However, as highlighted in the literature on the ABG, the presence of a favorable intention does not necessarily guarantee the adoption of consistent behavior (Vermeir & Verbeke, 2006). Both the definition of the ABG and extensions of the TPB acknowledge that internal and external factors may act as barriers, hindering or preventing the translation of intention into action (Vermeir & Verbeke, 2006; Ajzen, 1991). These factors operate as moderators of the intention–behavior relationship, helping to explain why individuals with pro-environmental attitudes and intentions often maintain conventional consumption patterns.

Accordingly, the conceptual model proposed in this study examines the influence of specific barriers as moderators of the relationship between purchase intention and sustainable purchase behavior. The selected barriers, previously discussed in the literature review and treated as moderating variables in the model, are Availability (Variable 03), Perception of Individual Impact (Variable 04), and Social Norms (Variable 05). In addition, price is included as a control variable (Control variable 01), given its transversal relevance across different consumption contexts and its frequent influence on purchasing decisions.

Furthermore, the model considers that certain factors primarily influence the formation of intention and are therefore included as control variables. These include Consumer Awareness (Control Variable 02), defined as knowledge of what sustainable products are and how to consume sustainably, and Environmental Knowledge (Control Variable 03), understood as the level of

understanding of environmental issues. The inclusion of these control variables is based on the assumption that, in the absence of knowledge about environmental problems, an intention to consume more sustainably is unlikely to emerge. Similarly, if individuals are unable to identify sustainable products or understand how to consume sustainably within the context of SFC, the adoption of such behaviors becomes impracticable.

The proposed conceptual model seeks to comprehensively capture the main theoretical mechanisms discussed in the literature, enabling the analysis not only of the direct relationship between intention and behavior but also of the moderating role of the selected barriers and the influence of relevant control variables on the formation of sustainable consumption intentions. See Appendix B for reference.

3. Research Methodology

3.1. Type of research

The present study adopts a quantitative methodology, whose primary focus is the testing of objective theories through the analysis of relationships between measurable variables, enabling the statistical treatment of numerical data (Creswell, 2014). This approach is particularly suitable for investigating causal relationships between constructs and for evaluating theoretical models within the field of consumer behavior.

The study is grounded in the post-positivist paradigm, which is based on a deterministic philosophical stance, assuming that causes, represented by the variables in the model, are likely to determine observable effects, in this case, purchase behavior. Within this framework, the research seeks to empirically measure the phenomena under investigation by reducing abstract concepts to a discrete set of variables suitable for statistical testing (Creswell, 2014).

A central aspect of this investigation is the use of variables, defined as characteristics or attributes of individuals or organizations that can be measured or observed and that vary across the subjects studied (Creswell, 2014). In this research, the variables refer to consumers' perceptions, intentions, and behaviors.

Sustainable food purchase behavior constitutes the dependent variable of the study and is understood as the outcome or effect to be explained by the proposed model. Purchase intention of sustainable food products is considered the independent variable, acting as the direct determinant

of purchase behavior, as stated in Hypothesis H1.

Additionally, product availability, social norms, and perceived individual impact are incorporated into the model as moderating variables. These variables function as contextual intervening factors that influence the strength and direction of the relationship between purchase intention and purchase behavior, as proposed in Hypotheses H2, H3, and H4. In this way, the model seeks to understand not only whether intention leads to behavior, but also under which conditions this conversion is facilitated or hindered.

Thus, the methodological objective of the study is the formal and statistical testing of the proposed relationships, aiming to understand to what extent and in what ways contextual barriers influence the conversion of intention into behavior within the context of SFC.

3.2. Methodological strategy

The research adopts a sequential design, combining a literature review and a quantitative cross-sectional survey. These two methods are complementary and were employed at different stages of the research to ensure both theoretical robustness and empirical validation of the proposed model.

First, a literature review was conducted to establish the theoretical foundation of the study and to support the development of the conceptual framework and research hypotheses. The review was carried out using academic databases such as Scopus, Research Gate, and Google Scholar, as well as institutional reports published by international organizations including the FAO, UNEP, UNESCO, IPCC, and OECD. The literature review focused on key themes related to sustainability fundamentals, SFC, behavioral theories, particularly the TPB and the ABG, as well as barriers and drivers of sustainable consumption. The insights derived from this review informed the selection of variables, the formulation of hypotheses, and the design of the survey instrument.

Second, the empirical stage of the research consisted of a cross-sectional survey, designed to test the proposed theoretical relationships. This design is appropriate for obtaining a quantitative description of attitudes, trends, and opinions within a population by analyzing a sample of that population, with the aim of generalizing the results within the limits of the adopted method (Creswell, 2014).

A structured online questionnaire was developed to assess consumers' environmental awareness, perceptions, intentions, and self-reported behaviors related to SFC. The questionnaire

was composed of Likert-scale items, ranging from 1 (strongly disagree) to 5 (strongly agree), and was adapted from validated measurement scales used in prior studies (e.g., Thøgersen, 2010; Bazhan et al., 2023; Mishra et al., 2023).

The questionnaire was organized into nine thematic sections, aligned with the variables of the proposed conceptual model. These sections included: (i) demographic profile; (ii) environmental knowledge (Mishra et al., 2023); (iii) consumer awareness of sustainable food products (National Cleaner Production Centre, Sri Lanka [NCPCSL], 2018); (iv) purchase intention (Thøgersen et al., 2010); (v) purchase behavior (Pearson et al., 2013); (vi) perceived availability (Bazhan et al., 2023); (vii) social norms (Bazhan et al., 2023); (viii) perceived impact (NCPCSL, 2018); and (ix) price perception (Bazhan et al., 2023).

This structure enabled a comprehensive assessment of both individual-level factors (such as knowledge, awareness, and intentions) and contextual factors (such as availability, social influence, perceived impact, and price), thereby supporting a robust analysis of the determinants of SFC in line with the objectives of the study.

3.3. Data collection procedures

The questionnaire was administered in a digital (online) format using the Qualtrics platform. The instrument was translated and adapted into American English and Brazilian Portuguese, ensuring semantic and cultural equivalence between versions through a back-translation process.

The survey link was distributed via digital channels, including social media platforms (LinkedIn and Instagram) and consumer groups in Portugal and Brazil, between November and December 2025. Prior to starting the questionnaire, participants were informed about the objectives of the study, the voluntary nature of their participation, and the assurance of confidentiality, through the acceptance of an Informed Consent Form.

3.3.1. Target Population

The target population of this study consists of adult consumers (18 years or older) who are responsible for food purchasing for their households and who reside predominantly in Portugal and Brazil. The study aims to understand the behavior of these consumers regarding sustainable food purchases, analyzing the Attitude–Behavior Gap (ABG) and the factors that may influence their purchasing decisions.

3.3.2. Sampling and Sample Size

A non-probabilistic convenience sampling method was adopted, complemented by a snowball sampling technique, through the online dissemination of the questionnaire via social media platforms and specific consumer groups.

Although this technique does not ensure the statistical representativeness of the population, it is widely used and accepted in Marketing and Consumer Behavior research for the validation of theoretical models and the testing of causal relationships, particularly in exploratory studies (Hair et al., 2019).

Data collection was conducted in two countries, allowing the inclusion of respondents from different national contexts. However, the data were analyzed in an aggregated manner, and no comparative or multigroup analyses between countries were performed. As such, respondents' geographic origin served a descriptive purpose, contributing to sample diversity without constituting an analytical variable in the model.

3.4. Data analysis

Data analysis was conducted using IBM SPSS Statistics (Statistical Package for the Social Sciences), together with the PROCESS Macro version 4.3 (Hayes, 2022). Initially, the internal consistency of the measurement scales was assessed using Cronbach's alpha, in order to evaluate the reliability of the items composing each construct.

After confirming scale reliability, the items for each variable were aggregated by calculating their arithmetic mean, generating representative scores for each construct. Subsequently, the research hypotheses were tested using linear regression analyses. Direct relationships were examined through simple linear regressions, while moderating effects were assessed by including interaction terms in the regression models.

4. Results

This chapter presents the empirical results of the study, based on the statistical analyses conducted to test the proposed hypotheses and examine the relationships between the variables included in the conceptual model. The analyses were performed using IBM SPSS Statistics, complemented by the PROCESS Macro (version 4.3) to assess direct effects and moderation relationships.

The results are reported in a descriptive and objective manner, focusing primarily on statistical significance and on whether the relationships between variables are positive or negative, without advancing theoretical interpretations.

The chapter begins with a description of the sample characteristics, followed by an assessment of the measurement scales and the results of the regression analyses conducted to test the study's hypotheses.

This study is grounded in a behavioral framework in which purchase behavior represents the dependent variable, purchase intention is the primary independent variable, and availability, social norms, and perception of impact (PCE) operate as moderating variables. In addition, consumer awareness, environmental knowledge, and price sensitivity were included as control variables.

To ensure the adequacy of the measurement instruments, the internal consistency of all constructs was assessed using Cronbach's alpha. The following subsections describe each variable according to its role in the conceptual model.

4.1. Data Analysis

This chapter presents the findings of the quantitative study, integrating the insights obtained from the questionnaire data. It begins with an assessment of the internal consistency of the measurement scales, which was evaluated using Cronbach's alpha to examine the reliability of the items composing each construct. All analyses were conducted using IBM SPSS Statistics.

After confirming the reliability of the measurement scales, the proposed hypotheses were tested. The results of these hypothesis tests are presented and discussed in the subsequent sections of this chapter.

Cronbach's alpha values equal to or greater than 0.70 were considered acceptable, in line with commonly adopted thresholds in exploratory research.

As the dependent variable in the model, purchase behavior refers to actual consumption practices related to sustainable food products, including both purchase frequency and the continuity of sustainable purchasing habits over time. This construct captures the realization of stated intentions into observable behavior.

Purchase behavior was measured using two items assessing how frequently respondents purchase products they consider sustainable and for how long they have engaged in such behavior. The scale yielded a Cronbach's alpha of 0.69, indicating an acceptable level of internal consistency for a behavioral construct composed of a limited number of items. This result supports the adequacy of the scale in capturing actual sustainable purchasing behavior.

Purchase intention represents consumers' predisposition and motivation to purchase sustainable food products, reflecting their willingness, planning, and effort to engage in such behavior, even when the purchase has not yet occurred. This construct constitutes the primary independent variable of the study.

Purchase intention was measured using three items capturing future-oriented behavioral intentions, including intentions to purchase, plan, and actively seek sustainable food products. The scale demonstrated excellent internal consistency, with a Cronbach's alpha of 0.959, indicating a high level of reliability and strong coherence among the items. This suggests that the scale effectively captures the underlying construct of intention to purchase sustainable food products.

The study includes three moderating variables aimed at capturing contextual and perceptual factors that may influence the strength of the relationship between purchase intention and purchase behavior.

Availability reflects the degree of accessibility of sustainable food products within consumers' habitual purchasing environments and whether limited accessibility constitutes a barrier to actual consumption. In the conceptual model, availability is treated as a moderating variable, influencing the strength of the relationship between purchase intention and purchasing behavior.

This construct was operationalized using four items related to product presence, ease of access, and the consideration of purchasing sustainable food when available. The scale yielded a Cronbach's alpha of 0.534, indicating relatively low internal consistency. Although this suggests some heterogeneity among the items, the scale was retained due to its conceptual relevance and its considerable statistical significance, as will be demonstrated in the subsequent analysis.

Social norms refer to the perceived influence of significant others and social expectations on consumers' purchasing decisions. As a moderating variable, this construct examines whether social pressure or social discouragement affects the translation of purchase intention into actual behavior.

The construct was measured using two items addressing perceived expectations and preferences of important reference groups. The scale achieved a Cronbach's alpha of 0.702, indicating acceptable reliability and supporting its use in subsequent analyses.

Perception of impact, or PCE, reflects the extent to which consumers believe that their individual actions can generate meaningful environmental outcomes. This construct was included as a moderating variable, assessing whether stronger perceptions of individual impact enhance the likelihood of converting intention into behavior.

The scale consisted of two items related to personal responsibility and perceived environmental consequences of consumption choices. The construct demonstrated good internal consistency, with a Cronbach's alpha of 0.770, indicating that the items reliably capture consumers' perceived effectiveness.

The list of measurement items used in this study, including the constructs, the number of items per scale, the corresponding questions, and the Cronbach's alpha values, can be found in Appendix C.

Three control variables were included in the analysis, as they are considered factors that may potentially influence the relationship between the independent and dependent variables.

Consumer awareness reflects respondents' perceived understanding of the environmental impact of their daily consumption practices. This construct was measured using six items in which participants were asked to indicate which of the following activities they believe have a negative impact on the environment. The scale demonstrated good internal consistency, with a Cronbach's alpha of 0.795.

Environmental Knowledge captures consumers' awareness of the environmental impacts associated with food production and consumption. The seven-item scale demonstrated high reliability, with a Cronbach's alpha of 0.871, indicating strong internal coherence.

Price reflects the role of cost sensitivity in sustainable food purchasing decisions and whether price acts as a barrier to actual behavior. The five-item scale presented good internal consistency, with a Cronbach's alpha of 0.806.

Overall, the reliability analysis indicates that most constructs exhibit satisfactory internal consistency, supporting their inclusion in subsequent regression and moderation analyses. The clear distinction between dependent, independent, moderating, and control variables provides a coherent structure for testing the proposed hypotheses and examining the mechanisms underlying the ABG in SFC.

4.2. Sample Description

The final sample consisted of 154 respondents, of which 103 were valid cases used in the statistical analyses, after the exclusion of 51 incomplete or missing responses. The following section presents the demographic and socioeconomic characteristics of the valid sample.

The age distribution of the respondents indicates a predominance of young adults, with the majority of participants aged 25–34 years ($n = 62$; 60.2%). Smaller proportions were observed in the age groups 18–24 years ($n = 8$; 7.8%), 35–44 years ($n = 10$; 9.7%), 45–54 years ($n = 6$; 3.9%), 55–64 years ($n = 13$; 12.6%), and 65 years or older ($n = 4$; 3.9%). This distribution suggests that the sample is largely composed of individuals in economically active stages of life.

Regarding gender, the sample was predominantly female ($n = 60$; 58.3%), followed by male respondents ($n = 41$; 39.8%). A small proportion of participants identified as other ($n = 1$; 1.0%) or preferred not to disclose their gender ($n = 1$; 1.0%).

Regarding country of residence, the majority of respondents resided in Brazil ($n = 72$; 69.9%), followed by Portugal ($n = 23$; 22.3%), while 7.8% ($n = 8$) reported residing in other countries. Although the sample includes participants from different national contexts, the data were analyzed in an aggregated manner, and country of residence was used solely for descriptive purposes.

Most respondents lived in urban areas ($n = 89$; 86.4%), with smaller proportions residing in suburban areas (outskirts of the city) ($n = 9$; 8.7%) and rural areas (countryside) ($n = 5$; 4.9%). This urban predominance may influence perceptions of product availability and access to sustainable food options, given the potentially greater availability of sustainable products, alternative markets, and diverse points of sale in urban settings.

The educational profile of the sample reveals a high level of educational attainment. Most respondents had completed higher education ($n = 62$; 60.2%), and a substantial proportion held a postgraduate degree (Master's or PhD) ($n = 35$; 34.0%). Only a small percentage reported

incomplete higher education (n = 5; 4.9%) or completed high school as their highest level of education (n = 1; 1.0%). This highly educated sample may be associated with higher levels of environmental knowledge and awareness, which is relevant to the study's focus on sustainable consumption.

Regarding occupational status, the majority of respondents were employed full-time (n = 47; 45.6%) or self-employed/entrepreneurs (n = 30; 29.1%). Smaller proportions were employed part-time (n = 6; 5.8%), students (n = 8; 7.8%), retired (n = 5; 4.9%), unemployed (n = 3; 2.9%), or reported other occupational situations (n = 4; 3.9%). This distribution indicates that most participants are economically active and likely involved in regular household purchasing decisions.

With respect to dietary habits, most respondents identified as omnivores (consume all types of food) (n = 58; 56.3%), followed by those who reported not following any specific dietary pattern (n = 21; 20.4%). A considerable proportion reported following alternative dietary patterns, including flexitarian (mostly vegetarian with occasional meat or fish) (n = 10; 9.7%), vegetarian (excludes meat, poultry, and fish) (n = 9; 8.7%), vegan (excludes all animal products) (n = 2; 1.9%), and pescatarian (excludes meat and poultry but includes fish) (n = 1; 1.0%). Additionally, 1.9% of respondents (n = 2) selected other dietary categories. This diversity in dietary practices is relevant for understanding variations in attitudes and behaviors related to SFC.

A detailed sociodemographic analysis is presented in Appendix A.

4.3. Hypotheses Testing

The constructs of the study were measured using multiple questionnaire items, with at least two indicators per construct. The items were initially entered into SPSS and aggregated by calculating the mean, resulting in the construction of the model variables. Subsequently, the variables were classified as independent, dependent, or moderating and used for hypothesis testing and analysis of the proposed relationships.

The hypothesis testing was conducted in two stages. In the first stage, regression analyses were performed in SPSS to estimate the B coefficients and assess the statistical significance of the relationships proposed in the theoretical model, analyzing the direct effects of the variables on the dependent variable. In this stage, the relationship between the dependent variable (purchase behavior) and the other variables in the model, including the independent variable as well as the

moderating and control variables, was examined. The sign and magnitude of the B coefficient indicated whether the relationships were positive or negative, while the significance value (Sig., or p-value) allowed for the assessment of whether these relationships were statistically significant, providing a preliminary evaluation of the hypotheses. It is important to note that even if a moderating variable shows a significant direct effect in the linear regression, this does not necessarily imply that it has a moderating effect on the relationship between purchase intention and behavior.

In the second stage, the results were validated using the PROCESS Macro (version 4.3), developed by Hayes (2018). Its use allowed for the formal testing of the proposed moderation effects, verifying whether the interactions between the variables were statistically significant. Relationships with p-values below 0.05 were considered statistically significant and supported, while relationships with p-values above 0.05 were considered not supported.

The results of these analyses provide empirical support for some of the proposed hypotheses, while others were not confirmed, offering important insights into the dynamics of the ABG in SFC.

A comprehensive summary of all findings is presented in Appendix B.

4.3.1. Main Relationship Analysis (Purchase Intention – Behavior)

To test hypothesis H1, which proposed that purchase intention is positively related to the purchase of sustainable products, a linear regression analysis was performed as previously described. The results indicate a positive and statistically significant relationship between purchase intention (independent variable) and purchase behavior (dependent variable) ($B = 0.590$; $SE = 0.100$; $t = 5.931$; $p < 0.001$). Therefore, H1 is supported.

4.3.2. Moderation Analysis

The remaining hypotheses of the study (H2, H3, and H4) investigate the moderating effects of the variables availability, social norms, and perceived impact on individual behavior, acting as moderators between purchase intention and purchase behavior.

It is important to highlight that even if a moderating variable shows a significant direct effect in the linear regression, this does not necessarily indicate that it moderates the relationship between intention and behavior. The PROCESS Macro (version 4.3) was used to formally test these moderation effects.

Hypothesis H4, which proposed that social norms moderate the relationship between purchase intention and purchase behavior, weakening this relationship when norms discourage sustainable behavior, was not supported. In the initial linear regression analysis, although social norms showed a positive coefficient ($B = 0.099$; $SE = 0.098$; $t = 1.002$; $p = 0.318$), this effect was not statistically significant. Moreover, the validation using the PROCESS Macro yielded $p = 0.808$, considerably higher than the threshold for hypothesis support ($p < 0.05$), confirming that H4 was not supported by the data.

Similarly, hypothesis H2, which proposed that availability moderates the relationship between purchase intention and purchase behavior, was also not supported. Although availability showed a positive and statistically significant direct effect ($B = 0.416$; $SE = 0.126$; $t = 3.291$; $p = 0.001$), the PROCESS analysis revealed $p = 0.8741$ for the moderation effect, confirming that the hypothesis is not supported.

Finally, hypothesis H3, which suggested that perceived individual impact strengthens the relationship between purchase intention and purchase behavior, was not supported. The coefficient for perceived impact was negative and statistically insignificant ($B = -0.241$; $SE = 0.167$; $t = -1.438$; $p = 0.153$), and the PROCESS analysis yielded $p = 0.5141$, also failing to support the hypothesis.

4.3.3. Control Variables Analysis

In addition to the hypothesis testing, three control variables were examined to better understand the determinants of sustainable food purchasing behavior. The results obtained through linear regression indicate that environmental knowledge had a positive and statistically significant effect ($B = 0.407$; $SE = 0.139$; $t = 2.932$; $p = 0.004$), suggesting that higher environmental knowledge is associated with increased sustainable purchasing behavior. Consumer awareness showed a positive but not statistically significant effect ($B = 0.144$; $SE = 0.155$; $t = 0.929$; $p = 0.355$), while price exhibited a negative and statistically insignificant effect ($B = -0.084$; $SE = 0.115$; $t = -0.731$; $p = 0.467$), indicating that price does not significantly influence sustainable food purchasing in this sample. Overall, among the control variables, only environmental knowledge demonstrated a significant impact on sustainable purchasing behavior.

5. Discussion of Results

5.1 Summary of results

The present study aimed to understand how consumers' intention to consume more sustainable products in the food sector translates into actual sustainable consumption behavior, by analyzing whether higher levels of intention are associated with higher levels of sustainable behavior. In addition, the study sought to investigate whether barriers previously identified in the literature, such as product availability, social norms, and perceived personal impact, act as moderating factors, strengthening or weakening the relationship between intention and behavior (Vermeir & Verbeke, 2006; Ajzen, 1991).

The results confirmed that intention does indeed play a significant role as an antecedent of behavior, corroborating prior evidence in the literature (Fishbein & Ajzen, 1975; Ajzen, 1991). However, the hypotheses proposing that the aforementioned barriers would act as moderating variables in this relationship were not supported in the context of this study. Nevertheless, product availability and the control variable of prior environmental knowledge showed a positive and statistically significant relationship with sustainable purchasing behavior.

Overall, the findings indicate that factors such as easier access to sustainable products and consumers' level of environmental knowledge play a relevant role in the conversion of intention into actual behavior. These results suggest that, although intention is a central element, contextual and cognitive conditions may be relevant for the occurrence of concrete actions.

The following sections of this chapter develop a critical analysis of the results, exploring possible explanations for the lack of support for the moderation hypotheses, as well as discussing the confirmation of H1, in light of the existing literature and the empirical context of the study.

Hypothesis H1 (Purchase intention is positively related to the purchase of sustainable products, assuming that higher levels of intention indicate greater effort toward performing the behavior) was supported by the results of the study. This finding confirms the core assumptions of the theoretical frameworks underpinning this research, namely the TRA (Fishbein & Ajzen, 1975) and the TPB (Ajzen, 1991) and are aligned with extant research on consumer behavior

According to the TRA, individuals are considered rational agents who systematically process relevant information to form intentions, which represent the primary determinant of behavior. The results of this study support this assumption by demonstrating that higher levels of

purchase intention are associated with a greater likelihood of actually engaging in the purchase of sustainable products.

The TPB extends this model by acknowledging that, although intention is the most immediate antecedent of behavior, other factors also influence its execution, namely: (1) attitude toward the behavior, (2) subjective norms, and (3) perceived behavioral control (Ajzen, 1991). Although these specific factors were not directly examined in this study, the findings reinforce the central role of intention as a key element in explaining behavior.

While the positive relationship between intention and behavior is widely documented in the literature, its confirmation in the context of SFC is not trivial, given that this type of consumption is associated with routine and habitual decisions, often influenced by practical and contextual constraints.

This finding is particularly relevant, as it reinforces the applicability of classical behavioral theories in a domain characterized by low social visibility and high repetition of choices, where behavior is not always the result of fully deliberative decisions. Thus, the results suggest that even in this context, individuals with stronger intentions to engage in sustainable behavior are more likely to effectively adopt such behavior.

In sum, the findings confirm that when individuals hold the intention to perform a given behavior, they are more likely to effectively carry it out, even in contexts marked by potential barriers or limitations. This result reinforces the relevance of intention as a central variable for understanding sustainable consumption in the food sector and provides empirical support for the theoretical model adopted in this study.

Although the proposed model received partial empirical support, Hypotheses H2, H3 and H4 were not supported, indicating that not all contextual and psychological factors exert a significant moderating effect on the relationship between purchase intention and sustainable food purchasing behavior. These results provide relevant insights into the complexity of the ABG and highlight the context-dependent nature of behavioral drivers.

Hypothesis H2 (Product availability moderates the positive relationship between purchase intention and the purchase of sustainable products, and this relationship is stronger for consumers with lower sensitivity to availability and convenience.) proposed that product availability would moderate the positive relationship between purchase intention and the purchase of sustainable products, strengthening this relationship, particularly for consumers with lower sensitivity to

availability and convenience. This hypothesis was based on the assumption that the easy and convenient availability of sustainable products would act as a facilitating factor in the transformation of intention into behavior.

However, the results of the analysis did not support this hypothesis, as product availability did not exhibit a statistically significant moderating effect on the relationship between intention and behavior. Nevertheless, it is important to highlight that product availability showed a positive and statistically significant direct effect on the purchase of sustainable products ($B = 0.416$; $p = 0.001$), indicating that higher levels of perceived availability are associated with a greater likelihood of purchasing sustainable products.

This finding suggests that product availability directly influences purchasing behavior, but does not necessarily function as a factor that strengthens or weakens the relationship between intention and behavior. In this sense, availability appears to reduce structural barriers to sustainable consumption, facilitating consumer action independently of the level of intention previously formed.

Moreover, the context of the study may have limited the variability in participants' perceptions of product availability. In contexts where sustainable products are already relatively accessible, availability tends to cease functioning as a differentiating factor capable of strengthening or weakening the intention–behavior relationship (Guagnano et al., 1995).

Taken together, these results indicate that, although product availability is a relevant factor in increasing sustainable purchasing behavior, its role is better understood as a direct antecedent of behavior, rather than as a moderator of the intention–behavior relationship, as originally proposed in Hypothesis H2.

Hypothesis H3 (Perceived impact positively moderates the relationship between purchase intention and the purchase of sustainable products) assumed that perceived impact would strengthen the relationship between purchase intention and sustainable purchasing behavior, such that consumers who believe their individual actions have a meaningful impact would be more likely to act on their intentions. However, the results of the analysis did not support this assumption.

The lack of support for this hypothesis may be derived from the notion of perceived inefficacy at the individual level, which is widely discussed in the sustainability and ABG literature. Even when consumers recognize the importance of sustainability, they may simultaneously believe that their individual actions are insufficient to generate meaningful

systemic change. This perception can weaken the motivational role of perceived impact, limiting its effectiveness in facilitating behavioral execution. In other words, individuals who act on their intention to consume more sustainably may do so despite a limited sense of individual impact, rather than because they believe their actions will produce significant change.

Furthermore, the non-significant effect of perceived impact suggests that moral or cognitive awareness alone may be insufficient to overcome practical constraints. This is particularly relevant in the context of food consumption, where additional factors, such as taste, the pursuit of pleasure (hedonism), and personal health as a primary motivation, may further influence purchasing decisions (Vermeir & Verbeke, 2006).

Together, these findings suggest that perceived impact is not effective in moderating the translation of purchase intention into actual sustainable food purchasing behavior.

Hypothesis H4 (Social norms and social context moderate the positive relationship between purchase intention and the purchase of sustainable products, such that this relationship weakens when consumers are exposed to social norms that discourage sustainable behaviors), proposed that discouraging social norms would weaken the relationship between purchase intention and actual purchasing behavior. However, the results indicate that social norms did not exert a statistically significant moderating effect on this relationship.

One possible explanation for this finding lies in the private and habitual nature of food purchasing decisions. As discussed by Griskevicius et al. (2010), sustainable consumption is often driven by motives related to visibility, social signaling, and status, which tend to be stronger in publicly observable consumption contexts. When consumption occurs in public settings, choosing sustainable products can serve as a signal of social status or moral identity. However, in more private environments, such as online grocery shopping conducted individually at home, these status-confirming motivations may weaken. In such contexts, consumers may be less inclined to prioritize sustainable options and instead favor the personal comfort, familiarity, or perceived quality associated with conventional products. Moreover, because food purchases are typically embedded in routine consumption patterns are less subject to direct social observation or explicit social pressure, consumers are more likely to rely on personal values, established habits, and practical considerations rather than on perceived social expectations when making food-related decisions.

Additionally, the sample is characterized by relatively high levels of education and environmental knowledge, which may reduce individuals' susceptibility to social influence (Vermeir & Verbeke, 2006). Consumers with higher awareness and more strongly internalized values (Griskevicius et al., 2010) may be less likely to adjust their behavior in response to external social norms.

From an ABG perspective, this finding suggests that social norms may not represent a primary barrier to the translation of sustainable intentions into actual food purchasing behavior, particularly in contexts where consumers already exhibit relatively high levels of awareness and autonomy in decision-making.

In addition to the theoretical explanations discussed above, the lack of empirical support for some of the proposed hypotheses may also be attributed to characteristics of the sample and the scope of the selected barriers.

First, the sample size and composition may have influenced the observed results. The final valid sample consisted of 103 respondents, predominantly urban, highly educated, and with moderate to high income levels, and concentrated mainly in Brazil and Portugal. While this profile is appropriate for exploratory research, it may limit the variability required to detect moderating effects related to social norms and perceived impact. Consumers with higher socioeconomic status and education may exhibit more stable values and greater autonomy in decision-making, reducing the influence of external social pressures and moral perceptions on behavior, thereby minimizing the role of subjective norms as a decisive factor (Vermeir & Verbeke, 2006).

Second, the geographic concentration and purchasing context of the sample may have affected the relevance of certain barriers. Differences in market structure, retail formats, and the availability of sustainable food products across regions may shape which factors are more salient in influencing behavior. As such, the contextual importance of social norms and perceived impact may vary across consumption environments.

Moreover, the selection of moderating variables was informed by studies on the ABG in sustainable consumption more broadly (Andrade & Vieites, 2025; Enamala et al., 2025; Girisaran & Khanna, 2025), rather than being exclusively derived from research focused on SFC.

While these barriers are well established in the general ABG literature, they may not fully capture the most relevant constraints operating within the specific domain of food-related decisions. SFC involves particular characteristics, such as food taste, the search for pleasure

(hedonism), and personal health as a primary (Vermeir & Verbeke, 2006), that may reduce the explanatory power of certain psychological or social barriers identified in other sustainability contexts.

From this perspective, the non-validation of some hypotheses does not necessarily indicate the absence of these effects, but rather suggests that their relevance may be context-specific. Future research could therefore benefit from testing additional or alternative barriers, such as habit strength, trust in food labels, taste expectations, or perceived quality (Vermeir & Verbeke, 2006; Girisan & Khanna, 2025), which may play a more prominent role in the SFC context.

Overall, these findings reinforce the argument that the ABG is a multifaceted phenomenon and that its drivers and barriers may vary significantly across consumption domains, highlighting the importance of context-sensitive approaches in sustainability research.

However, it is important to note that this study relies on self-reported data, which may not fully reflect individuals' actual behavior. Respondents' statements indicating that they would perform a given action despite the presence of barriers reflect the existence of intention, but not necessarily the effective execution of the behavior in real-life contexts (Carrington, Neville & Whitwell, 2010). Therefore, the responses may capture declared intentions more strongly than observed behavior.

5.2. Theoretical Implications

This study corroborates the TPB, originally proposed by Ajzen (1991), by applying it to a still underexplored domain: SFC. While the classical literature often analyses consumer behavior in a broad and aggregated manner, this research focuses on a specific niche within sustainable consumption, offering a more in-depth examination of sustainable food purchasing behavior.

Additionally, this study establishes a theoretical convergence between the TPB and the concept of the ABG. Whereas the TPB posits intention as the immediate and central antecedent of behavior, shaped by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991), the literature on the ABG in sustainable consumption contexts suggests that this relationship is not linear, as it is influenced by a complex set of situational barriers (Carrington et al., 2010).

By integrating both frameworks, this empirical investigation validates Ajzen's (1991) core assumption by confirming purchase intention as a statistically significant predictor of behavior in the context of SFC. However, the study extends the original model by treating key ABG-related

factors, specifically product availability, social norms, and perceived individual impact, not merely as external variables or “noise,” but as moderating variables operating in the transition from intention to actual purchasing behavior.

In line with the TPB, the findings confirm that purchase intention is a central and significant predictor of sustainable purchasing behavior, reinforcing the importance of intentionality in consumer decision-making processes. This result supports prior research that recognizes intention as a necessary, though not always sufficient, condition for behavioral change in sustainability-related contexts.

Beyond confirming established theoretical assumptions, this study demonstrates that the ABG is strongly dependent on the consumption context, offering new insights specifically within the domain of SFC. While product availability emerged as a significant factor influencing sustainable purchasing behavior, other barriers frequently highlighted in the ABG literature, namely social norms and perceived individual impact, did not exhibit significant moderating effects. These findings corroborate the argument of Joshi and Rahman (2015) that ABG-related barriers are highly context-dependent. It is therefore suggested that the utilitarian and everyday nature of food consumption renders purchasing behavior more sensitive to immediate logistical constraints than to normative pressures or altruistic motivations, distinguishing this domain from other sectors of sustainable consumption.

5.3. Practical Implications

The following section presents the practical implications of the research findings and proposes actionable strategies for entrepreneurs, startups, and companies in the sustainable food sector.

While the ABG is a complex and systemic challenge, this study adopts a business-oriented perspective, framing the gap as a market opportunity. In this context, the ABG is understood not only as a behavioral limitation but also as a space for innovation, where companies can design solutions that effectively translate consumer intentions into actual purchasing behavior.

The supported hypothesis confirms that purchase intention is positively associated with sustainable purchasing behavior. Consumers who have already developed the intention to consume more sustainably are more likely to translate it into action, highlighting the relevance of initiatives that strengthen purchase intention. According to Vermeir and Verbeke (2006), this can be achieved

by reducing perceived effort and low product availability, for example through communication channels that allow consumers to verify points of sale, thereby demonstrating accessibility and reinforcing intention.

The results indicate that product availability directly influences purchase behavior, even without moderating the relationship between intention and action, highlighting the importance of structural and contextual factors in enabling sustainable choices. For producers and retailers, strategies that increase accessibility and reduce perceived effort can be effective. These include expanding the physical and digital presence of sustainable products in conventional retail environments through partnerships with traditional retailers, and ensuring consistent placement in familiar shopping locations rather than limiting products to niche stores.

Visibility can be further enhanced through strategic placement and display, placing products in convenient, easily noticeable locations accompanied by clear signage and eco-labels, which reduce cognitive effort and support choices aligned with consumer intentions (Joshi & Rahman, 2015). Offering a variety of products also serves as an additional incentive, catering to different preferences and personal needs, thereby increasing the likelihood of purchase (Joshi & Rahman, 2015).

Moreover, Griskevicius et al. (2010) suggest that the consumption of sustainable products is also driven by status, depending on the visibility of the behavior. Therefore, making sustainable consumption visible, through labels, certifications, or at the point of sale, is an effective strategy to activate this status motivation.

Innovation in products and business models can further increase perceived availability and purchase intention. Developing convenient products integrated into daily routines, alongside distribution models such as subscriptions, meal kits, or default sustainable options on delivery platforms, can reduce contextual barriers and support habitual sustainable consumption.

Additionally, the significant effect of environmental knowledge indicates that consumers benefit from clear, actionable, and comprehensible information about the environmental impacts of their food choices, particularly when linked to available alternatives. Strategies based on prioritizing data and information in a verbal rather than numerical format, providing clear, transparent, and detailed information, using promotions and point-of-sale materials to foster education, or presenting comparisons between the impacts of conventional and sustainable

products are therefore essential (Gleim et al., 2013). Since knowledge precedes intention, investing in consumer education constitutes a crucial strategy for promoting sustainable behavior.

In contrast, the non-significant effects of social norms and PCE suggest that strategies relying primarily on social pressure or moral appeals may have limited impact in the food consumption context.

Overall, the findings indicate that promoting SFC requires structural interventions focused on accessibility and knowledge, capable of facilitating effective behavior, whether through convenience and habit or by translating positive intentions into concrete actions.

5.4. Limitations and Future Research

Despite its contributions, this study has some limitations that should be acknowledged and that also suggest directions for future research.

First, the sample was relatively small and somewhat homogeneous, which may have limited the statistical power of the analyses, particularly regarding the detection of moderation effects. The majority of respondents had higher education levels, relatively high incomes, were employed or ran their own business, and lived in urban areas with greater access to products. While geographically diverse (69.9% Brazil, 22.3% Portugal, 7.8% other), future studies could benefit from larger and more diverse samples to enable more robust testing of the proposed concepts and relationships.

Furthermore, the reliance on non-probabilistic convenience sampling limits the generalizability of the findings. Although commonly employed in exploratory consumer behavior research, results should be interpreted with caution. Future research could employ probabilistic sampling techniques or focus on more representative populations.

The cross-sectional design of the study also poses a limitation, as it captures a single point in time and does not allow for the analysis of behavioral changes. Since sustainable consumption is a dynamic process, it is not possible to determine whether increases in environmental awareness lead to higher purchase intentions or whether these intentions consistently translate into actual sustainable purchasing behavior. Longitudinal studies could track participants over time to better capture the translation of intentions into real actions.

Additionally, the selection of moderating variables was primarily guided by the general literature on the ABG in sustainable consumption, rather than studies specifically focused on

sustainable food. Future research could explore alternative or additional barriers, such as food taste, the pursuit of pleasure (hedonism), and personal health considerations (Vermeir & Verbeke, 2006), which may be particularly relevant in food-related contexts.

It is also important to note that the reliance on self-reported data may introduce social desirability bias, as respondents may overstate their sustainable behaviors or intentions. The lack of studies that measure actual purchasing behavior, rather than stated intentions or self-reported actions, represents a significant methodological limitation in the literature (Carrington, Neville & Whitwell, 2010), which also applies to this study. Future research could complement survey data with observational methods, purchase records, or experimental designs to strengthen the validity of the findings.

6. Conclusions

This study aimed to investigate the ABG in the context of SFC, with the goal of understanding how purchase intention translates into actual purchasing behavior and identifying the factors that facilitate or impede this process. Additionally, this study explores how these insights can be translated into business opportunities. Drawing on the TPB and the broader literature on sustainable consumption, the research empirically examined the role of both contextual and individual variables in explaining the persistence of the ABG.

The results confirmed that purchase intention is a strong predictor of actual purchasing behavior, reinforcing its central role in consumer decision-making. In addition, the availability of sustainable products emerged as an important facilitator of behavior, operating independently of purchase intention. In contrast, other commonly cited barriers, such as social norms and perceived individual impact, did not show a significant influence in this context. The study also demonstrated that environmental knowledge is an influential factor in sustainable behavior, indicating that access to information remains a differentiating factor and can shape individuals' attitudes and actions.

By focusing specifically on the food sector, the study provides a more nuanced understanding of the ABG, suggesting that the relevance of certain barriers may differ across consumption domains. These findings highlight the importance of conducting sector-specific analyses and underscore the need for context-sensitive approaches in both academic research and practical interventions, moving beyond generalized assumptions about sustainable consumer behavior.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*.
- Andrade, E. B., & Vieites, Y. (2025). Obstacles and opportunities for sustainable consumption: A comprehensive conceptual model, literature review, and research agenda. *Journal of Consumer Psychology*, 00, 1–26. <https://doi.org/10.1002/jcpy.70003>
- Bazhan, M., Shafiei Sabet, F., & Borumandnia, N. (2023). Development and validation of a questionnaire to examine determinants of consumer intentions to purchase organic food. *BMC Nutrition*, 9, 74. <https://doi.org/10.1186/s40795-023-00731-y>
- Benton, T. G., Bieg, C., Harwatt, H., Pudasaini, R., & Wellesley, L. (2021). Food system impacts on biodiversity loss: Three levers for food system transformation in support of nature. London: Chatham House.
- Burlingame, B., & Dernini, S. (2012). Sustainable diets and biodiversity: Directions and solutions for policy, research and action. FAO.
- Carrington, M. J., Neville, B. A., & Whitwell, G. J. (2010a). Why ethical consumers don't walk their talk: Towards a framework for understanding the gap between the ethical purchase intentions and actual buying behaviour of ethically minded consumers. *Journal of Business Ethics*, 97, 139–158.
- Carrington, M. J., Neville, B. A., & Whitwell, G. J. (2010b). Why we don't always do what we say: The role of social context in the attitude–behaviour gap.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- De, T., Singh, N., Ibrahim, B. S. M. K., Dikkatwar, R., & Chaudhary, M. K. (2025). Mindful, responsible, and sustainable consumption: A hybrid review of evolving research trends. *Discover Sustainability*, 6, 512. <https://doi.org/10.1007/s43621-025-01343-1>

Dong, X., Jiang, B., Kassoh, F. S., & Chen, F. (2025). Predicting consumer switching decisions: The trust paradox and its impact on the efficiency of sustainability-label and food chain brands. *Sustainable Futures*, 10, 101086.

EAT Forum, & GlobeScan. (2022). Grains of truth 2: A consumer report on healthy & sustainable food systems.

Enamala, J., Raghuramapatruni, R., et al. (2025). Consumer behavior and sustainable consumption: Understanding the factors influencing eco-friendly purchasing decisions in the age of climate change. *Pacific Business Review (International)*, 17(12), 103–115.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research.

Food and Agriculture Organization of the United Nations. (2021). COP26: Agricultural expansion drives almost 90 percent of global deforestation. *FAO News*, 6 November.

Food and Agriculture Organization of the United Nations. (2022). Assessment of agricultural plastics and their sustainability: A call for action. Rome: FAO.

Food and Agriculture Organization of the United Nations. (2023). Pathways towards lower emissions – A global assessment of the greenhouse gas emissions and mitigation options from livestock agrifood systems. Rome: FAO.

Garnett, T. (2014). What is a sustainable healthy diet? A discussion paper. Food Climate Research Network, University of Oxford.

Girisaran, K. S., & Khanna, P. (2025). The green consumer revolution: A study on sustainable product preferences. In Chapter 9. IGI Global Scientific Publishing.

GlobeScan. (2023). Healthy & sustainable living report 2023.

Griskevicius, V., Tybur, J. M., & Van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology*, 98(3), 392.

- Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences on attitude-behavior relationships: A natural experiment with curbside recycling. *Environment and Behavior*, 27(5), 699–718.
- Hair, J., & Sabol, M. A. (2023). An overview of multivariate data analysis.
- Heinrich-Böll-Stiftung, Friends of the Earth Europe, & Bund für Umwelt und Naturschutz Deutschland. (2021). Meat atlas 2021: Facts and figures about the animals we eat. Berlin & Brussels: Heinrich-Böll-Stiftung / Friends of the Earth Europe / BUND.
- Ingka Group, & GlobeScan. (2025). People & planet: Consumer insights & trends 2025.
- Intergovernmental Panel on Climate Change. (2019). Climate change and land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. Geneva: IPCC.
- International Finance Corporation. (2023). Strengthening sustainability in the textile industry. Washington, D.C.: IFC (World Bank Group).
- International Labour Organization. (2024). Child labour in agriculture. Geneva: ILO.
- Jackson, T. (2005). Motivating sustainable consumption: A review of evidence on consumer behaviour and behavioural change (Report to the Sustainable Development Research Network). Centre for Environmental Strategy, University of Surrey.
- Jaramillo, P., Kahn Ribeiro, S., Newman, P., Dhar, S., Diemuodeke, O. E., Kajino, T., Lee, D. S., Nugroho, S. B., Ou, X., Hammer Strømman, A., & Whitehead, J. (2022). Transport. In P. R. Shukla et al. (Eds.), *Climate change 2022: Mitigation of climate change* (pp. ...). Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781009157926.012>
- Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic Management Review*, 3(1–2), 128–143.
- Kaiser, F. G., & Brüggemann, M. (2025). Uncovering the relevance of reasons for behavior: The attitude-behavior gap revisited. *Journal of Environmental Psychology*. <https://doi.org/10.1016/j.jenvp.2025.102762>

Katherine Richardson, Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., ... Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9, eadh2458.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?

Kristia, K., Kovács, S., Bács, Z., & Rabbi, M. F. (2023). A bibliometric analysis of sustainable food consumption: Historical evolution, dominant topics and trends. *Sustainability*, 15(11), 8998.

Leim, M. R., Smith, J. S., Andrews, D. E., & Cronin Jr., J. J. (2013). Against the green: A multi-method examination of the barriers to green consumption. *Journal of Retailing*, 89(1), 44–61.

Mishra, M., Kushwaha, R., Gupta, N., Sinha, A., & Dwivedi, H. (2023). Survey data to evaluate consumer behaviour and consumption pattern of sustainable apparel: A study on consumer awareness level [Data set]. *Data in Brief*, 49, 109350.
<https://doi.org/10.1016/j.dib.2023.109350>

National Cleaner Production Centre, Sri Lanka (NCPCSL). (2018, February). Consumer awareness survey on sustainable consumption – 2018: Sri Lanka: Survey report: Findings and annexures. National Cleaner Production Centre, Sri Lanka.

Pearson, D., Henryks, J., Sultan, P., & Anisimova, T. (2013). Organic food: Exploring purchase frequency to explain consumer behaviour. *Journal of Organic Systems*, 8(1), 50–63.

Planetary Boundaries Science (PBScience). (2025). Planetary Health Check 2025 (N. H. Kitzmann, L. Caesar, B. Sakschewski, & J. Rockström, Eds.). Potsdam Institute for Climate Impact Research (PIK).

Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987–992.

Ritchie, H. (2019, December 11). 50% of all land in the world is used to produce food. World Economic Forum.

Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing*, 44(11/12), 1787–1810.

United Nations Educational, Scientific and Cultural Organization. (2024). *The United Nations world water development report 2024: Water for prosperity and peace*. Paris: UNESCO.

United Nations Environment Programme. (2024). *Global Resources Outlook 2024: Bend the Trend – Pathways to a liveable planet as resource use spikes*. International Resource Panel.

United Nations Environment Programme. (2024a). *Food waste index report 2024: Think eat save – Tracking progress to halve global food waste*. Nairobi: UNEP.

United Nations Environment Programme. (2024b). *Global status report for buildings and construction: Beyond foundations – Mainstreaming sustainable solutions to cut emissions from the buildings sector*. Nairobi: UNEP. <https://doi.org/10.59117/20.500.11822/45095>

Varzakas, T., & Smaoui, S. (2024). Global food security and sustainability issues: The road to 2030 from nutrition and sustainable healthy diets to food systems change. *Foods*, 13(2), 306. <https://doi.org/10.3390/foods13020306>

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer “attitude–behavioral intention” gap. *Journal of Agricultural and Environmental Ethics*, 19(2), 169–194.

Appendix A

Sociodemographic analysis of the sample

Variable	Response Options	Frequency	Valid Percentage
Age	18–24 years old	8	7,8
	25–34 years old	62	60,2
	35–44 years old	10	9,7
	45–54 years old	6	5,8
	55–64 years old	13	12,6
	65 years old or more	4	3,9
Gender	Female	60	58,3
	Male	41	39,8
	Other	1	1
	Prefer not to say	1	1
Country of residence	Brazil	72	69,9
	Portugal	23	22,3
	Other	8	7,8
Area of Residence	Urban area (city)	89	86,4
	Suburban area (outskirts of the city)	9	8,7
	Rural area (countryside)	5	4,9
Household Size	I live alone	17	16,5
	2 people	45	43,7
	3 people	22	21,4
	4 people	17	16,5
	5 or more people	2	1,9
Education Level	Completed high school	1	1
	Incomplete higher education	5	4,9
	Completed higher education	62	60,2
	Postgraduate (Master's/PhD)	35	34
Current Occupational Status	Student	8	7,8
	Employed (full-time)	47	45,6
	Employed (part-time)	6	5,8
	Unemployed	3	2,9
	Self-employed / Entrepreneur	30	29,1
	Retired	5	4,9
	Other	4	3,9
Dietary Pattern	Omnivore	58	56,3
	Flexitarian	10	9,7
	Vegetarian	9	8,7
	Vegan	2	1,9
	Pescatarian	1	1
	None of the above / No specific pattern	21	20,4
Average Monthly Household Income	Other	2	1,9
	Up to 1,500 units	7	6,8
	1,501 to 3,000 units	18	17,5
	3,001 to 6,000 units	11	10,7
	6,001 to 10,000 units	21	20,4
	Above 10,000 units	40	38,8
	Prefer not to say	6	5,8

Appendix B

Summary of Hypotheses Testing Results

Hypothesis	Results
H1: Purchase intention is positively related to the purchase of sustainable products.	Supported
H2: Product availability moderates the positive relationship between purchase intention and the purchase of sustainable products, and this relationship is stronger for consumers with lower sensitivity to availability and convenience.	Not supported
H3: Perceived Individual Impact positively moderates the relationship between purchase intention and the purchase of sustainable products.	Not supported
H4: Social norms and social context moderate the positive relationship between purchase intention and the purchase of sustainable products, such that this relationship weakens when consumers are exposed to social norms that discourage sustainable behaviors.	Not supported

Appendix C

Survey measurement items

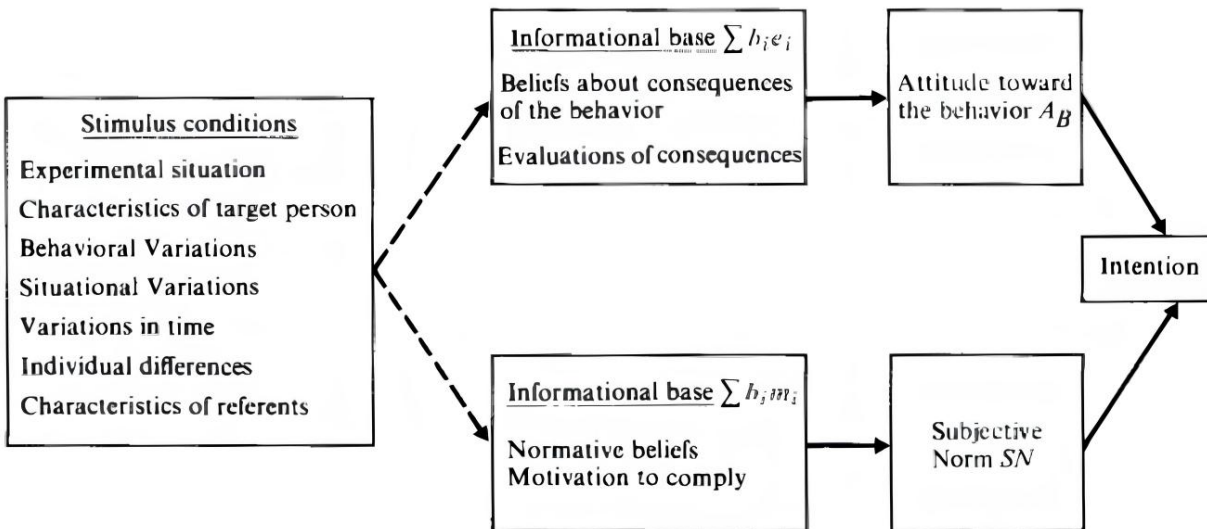
Variable	Number of Items	Questions of the Scale	Cronbach's alpha
Purchase behaviour	2	How frequently do you purchase products that you consider sustainable? For how long have you been purchasing products that you consider sustainable?	0.69
Purchase intention	3	In future, I intend to purchase environmentally sustainable food products. In future, I will try to buy sustainable food products In future, I will plan my shopping so that I get to buy sustainable food products	0.959
Availability	4	Sustainable foods are available in sufficient quantities in the stores where I do my shopping. It is hard to find sustainable foods in the stores where I go shopping. If there are sustainable foods available in the stores where I go shopping, I consider buying them. I can easily find sustainable foods in my neighborhood.	0.534
Social norms	2	Many people who are important to me in life think that I should buy sustainable food. The people whose opinions I value prefer not to buy sustainable food.	0.702
Perception of impact	2	I think that, as an individual, I am responsible for protecting the environment. I believe that individuals should be careful when purchasing products, because buying certain products can have more harmful impacts on the environment.	0.770
Consumer awareness	6	Please indicate which of the following daily consumption activities and practices you believe have a NEGATIVE impact on the environment: _ Food waste. _ A diet high in beef consumption (more than three times per week). _ Buying imported fruits and vegetables instead of locally produced ones. _ Consuming out-of-season (non-seasonal) foods. _ Purchasing foods with excessive single-use plastic packaging. _ Buying food from companies known for environmentally irresponsible practices.	0.795
Environmental Knowledge	7	I understand how my food choices affect climate change. I am aware that food production is responsible for a significant amount of water use I am aware that food production is responsible for a significant amount of land use, contributing to deforestation, land degradation and biodiversity loss I am aware that certain agricultural practices and food production methods can cause negative environmental impacts I am aware that greenhouse gas emissions are generated throughout the food production and distribution process I am aware that the use of fertilizer and pesticides are bad for the environment and for my health I am aware that the amount of food produced globally is enough to feed the entire population, but a large share is diverted to feed livestock	0.871
Price	5	The price of sustainable foods is very important to me. I often refuse to buy sustainable foods because I think they are expensive. It is important to me that the price of sustainable foods is similar to that of conventional foods. I always try to find affordable food options when shopping. I intend to buy sustainable foods, provided they are sold at a lower price.	0.806

Appendix D

Schematic representation of effects of stimulus variables on intentions.

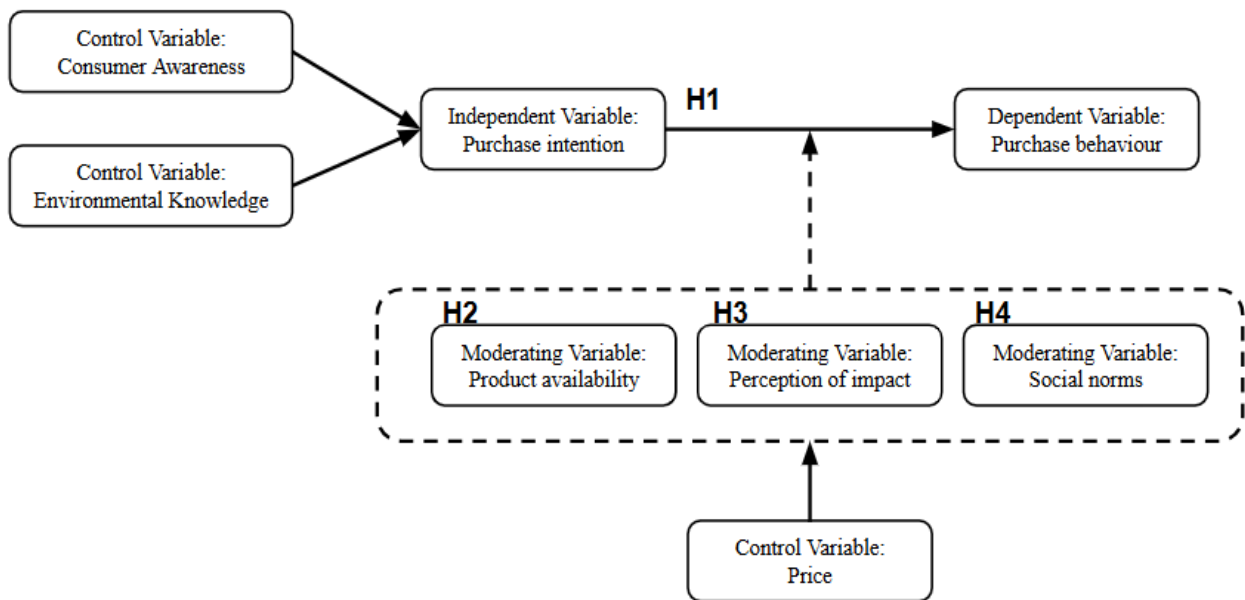
Source: “Belief, attitude, intention and behavior: An introduction to theory and research”

(Fishbein & Ajzen, 1975, p.334)



Appendix E

Proposed conceptual model



Appendix F

Survey

18/01/2020, 19:01

Qualtrics Survey Software

English

Master's Degree student in Innovation and Research for Sustainability ISEG – Lisbon
School of Economics & Management
Contact: julia.katzd@aln.iseg.ulisboa.pt

Introduction

Hello,

This questionnaire is part of an academic study for the Master's program in Innovation and Research for Sustainability at ISEG – Lisbon School of Economics & Management. The study aims to investigate consumer behavior, perceptions, and habits related to the purchase and consumption of environmentally sustainable food products.

The study seeks to understand factors such as:

- awareness of the environmental impact of food,
- values and attitudes toward sustainability,
- frequency and intention to purchase sustainable products,
- food habits and perception of environmental impact.

The results of this research will contribute to a better understanding of the motivations and barriers associated with sustainable consumption. Please answer honestly; there are no right or wrong answers.

This survey is confidential. Your email will be collected only for the purpose of sending a follow-up questionnaire next week. Your email will not be linked to your answers, will not be used for any other purpose, and will not be shared. All data will be analyzed in aggregate form and used exclusively for academic purposes.

By proceeding and submitting your responses, you confirm that:

- you understand the purpose of the study,
- you are participating voluntarily,
- you consent to the use of your data exclusively for academic research,
- you are at least 18 years old.

If you do not agree, you may exit the questionnaire.

Estimated time to complete the survey: 5–7 minutes.

Thank you very much for your participation!

Julia Katz

Environmental Knowledge

I understand how my food choices affect climate change.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I am aware that food production is responsible for a significant amount of water use

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I am aware that food production is responsible for a significant amount of land use, contributing to deforestation, land degradation and biodiversity loss

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree

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Qualtrics Survey Software

☐ Strongly agree

I am aware that certain agricultural practices and food production methods can cause negative environmental impacts

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I am aware that greenhouse gas emissions are generated throughout the food production and distribution process

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I am aware that the use of fertilizer and pesticides are bad for the environment and for my health

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

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18/01/2026, 19:01

Qualtrics Survey Software

Please indicate to what extent you believe each of the following daily consumption activities and practices has a negative impact on the environment.

	Extremely negative	somewhat negative	Neither positive nor negative	somewhat positive	Extremely positive
Food waste	☐	☐	☐	☐	☐
A diet high in beef consumption (more than three times per week).	☐	☐	☐	☐	☐
Buying imported fruits and vegetables instead of locally produced ones.	☐	☐	☐	☐	☐
Consuming out-of-season (non-seasonal) foods.	☐	☐	☐	☐	☐
Purchasing foods with excessive single-use plastic packaging	☐	☐	☐	☐	☐
Buying food from companies known for environmentally irresponsible practices.	☐	☐	☐	☐	☐

Purchase Intention

In future, I intend to purchase environmentally sustainable food products.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

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18/01/2026, 19:01

Qualtrics Survey Software

I am aware that the amount of food produced globally is enough to feed the entire population, but a large share is diverted to feed livestock

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

Consumer Awareness

How familiar are you with the term "sustainable products" / "green products"?

- ☐ I know nothing about it
☐ I know a little
☐ I have a moderate understanding
☐ I know quite a lot
☐ I know very well about it

In general, how much do you know about the environmental impact of the products you buy or use?

- ☐ I know nothing about it
☐ I know a little
☐ I have a moderate understanding
☐ I know quite a lot
☐ I know very well about it

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18/01/2026, 19:01

Qualtrics Survey Software

In future, I will try to buy sustainable food products

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

In future, I will plan my shopping so that I get to buy sustainable food products

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

Purchase behaviour

How frequently do you purchase products that you consider sustainable?

- ☐ Never
☐ Rarely
☐ Sometimes
☐ Often
☐ Always

For how long have you been purchasing products that you consider sustainable?

- ☐ Less than 6 months

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- 18/01/2026, 19:01
- Qualtrics Survey Software
- ☐ 6 months – 1 year
- ☐ 1–3 years
- ☐ 3–5 years
- ☐ More than 5 years

Perception of Availability

Sustainable foods are available in sufficient quantities in the stores where I do my shopping.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

It is hard to find sustainable foods in the stores where I go shopping.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

If there are sustainable foods available in the stores where I go shopping, I consider buying them.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree

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- 18/01/2026, 19:01
- Qualtrics Survey Software
- ☐ Agree
- ☐ Strongly agree

I can easily find sustainable foods in my neighborhood.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

I intend to buy sustainable foods, provided they are more accessible in the market.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

Social norms

Many people who are important to me in life think that I should buy sustainable food.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

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The people whose opinions I value prefer to buy sustainable food.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

It would help me make sustainable food consumption choices if my friends and family also consumed sustainable food.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

Perception of Impact

I believe that my food choices have no impact on the environment.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

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- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I often refuse to buy sustainable foods because I think they are expensive.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

It is important to me that the price of sustainable foods is similar to that of conventional foods.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I always try to find affordable food options when shopping.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

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I think that, as an individual, I am responsible for protecting the environment.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

I believe that individuals should be careful when purchasing products, because buying certain products can have more harmful impacts on the environment.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

Perception of price

I believe sustainable food products are worth paying more for.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

The price of sustainable foods is very important to me.

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I intend to buy sustainable foods, provided they are sold at a lower price.

- ☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

Profile

What is your age?

- ☐ () 18-24 years old
☐ () 25-34 years old
☐ () 35-44 years old
☐ () 45-54 years old
☐ () 55-64 years old
☐ () 65 years old or more

Which gender do you identify with?

- ☐ Female
☐ Male
☐ Other
☐ Prefer not to say

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In which country do you currently reside?

- ☐ Brazil
☐ Portugal
☐ Other (please specify)

Which of the following best describes the area where you live?

- ☐ Urban area (city)
☐ Suburban area (outskirts of the city)
☐ Rural area (countryside)

How many people, including yourself, currently live in your household?

- ☐ 1 live alone
☐ 2 people
☐ 3 people
☐ 4 people
☐ 5 or more people

What is your highest level of education completed?

- ☐ Incomplete high school
☐ Completed high school
☐ Incomplete higher education
☐ Completed higher education
☐ Postgraduate (Master's/PhD)

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What is your primary field of study or professional area? (Please specify, e.g., 'Engineering', 'Healthcare', 'Marketing', 'Education', 'Arts', 'Science', 'Business', etc.)

What is your current occupational status?

- ☐ Student
☐ Employed (full-time)
☐ Employed (part-time)
☐ Unemployed
☐ Self-employed / Entrepreneur
☐ Retired
☐ Homemaker / Stay-at-home parent
☐ Other: ...

What is the average monthly income of your household (summing the incomes of all people living with you)? (Please select the option that best represents your household income in your local currency. You may convert to a common currency if preferred, but local currency is acceptable.)

- ☐ Up to 1,500 units of local currency (e.g., BRL, EUR)
☐ From 1,501 to 3,000 units of local currency
☐ From 3,001 to 6,000 units of local currency
☐ From 6,001 to 10,000 units of local currency
☐ Above 10,000 units of local currency
☐ Prefer not to say

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Do you follow a specific diet?

- ☐ Omnivore (eats all types of food)
☐ Flexitarian (mostly vegetarian with occasional meat/fish)
☐ Vegetarian (excludes meat, poultry, and fish)
☐ Vegan (excludes all animal products)
☐ Pescatarian (excludes meat and poultry, but includes fish)
☐ None of the above / No specific dietary pattern*
☐ Other (please specify):

Please provide your email