



INVESTIGATING CONSUMER PERCEPTION OF SUSTAINABLE PURCHASE:  
EXAMINING CORRELATIONS BETWEEN FOOD HABITS AND INNOVATION

Rolando Drogo

Dissertation submitted as partial requirement for the conferral of Master in Marketing

Supervisor:

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## **Abstract**

Awareness of our eating habits impact on health and the environment is growing, along with its consequential effects. It is critical for individuals to acquire knowledge in this realm, learning to thoughtfully assess their daily consumption and actively participate in the process.

The analyzed sample comprises responses from 202 respondents, providing a global overview of people's attitudes toward adopting sustainable food products. Therefore, this study aims to investigate consumers' perceptions of green products and their willingness to integrate them into their dietary practices. It will explore how certain variables, such as health consciousness and trust in the integrity of food products, positively influence purchase intention through the mediating factors of green environmental concerns. Additionally, perceived barriers, which negatively impact purchase intention but are positively associated with confidence in product integrity, will also be examined.

The results demonstrate consumers' willingness to embrace new messages that help overcome barriers to purchasing sustainable products, as well as responsibility on the part of companies in understanding how to effectively promote environmental aspects through tangible actions.

**Keywords:** innovation - consumer perception - sustainable purchase - food habits

**JEL Classification System:** Marketing (M31) – Social Responsibility (M14)



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## **1. Introduction**

Consumers, global trends, and new technological implementations form the basis for the evolution and dynamism of the food industry, followed by growing concerns about food security. The significance of maintaining food security and improving its sustainability has become increasingly apparent due to the profound effects of food production. As productivity improves and human living standards continue to rise, there has been a broader and deeper understanding of the concept and implications of food security, reflecting the characteristics of the contemporary era (Xie et al., 2021). Therefore, the dissertation project will focus on people's perceptions of food purchasing, since the way they seek and receive information is constantly changing, as well as their willingness to embrace education, particularly on new technologies adopted in the food industry to reduce environmental damage and promote healthier eating habits.

As highlighted by Lago et al. (2020), young consumers now have more criteria to choose food products, including sustainability considerations such as environmental certifications, sustainable packaging, and product origin/processing attributes. As a matter of fact, the future of the food industry relies on addressing consumer behavior towards purchasing sustainable products. Nowadays, purchasing options have expanded into healthier and more sustainable items, with increasing interest regarding seasonality, local provenance, and environmental impact of products.

Despite the lack of in-depth education on the impact of food on both personal health and the planet, the topic raises consumers' interest and desire to actively participate in the process. However, individuals are also indirectly exposed to hundreds of daily messages through social networks and word of mouth, increasing the difficulty in filtering information. This invasive communication may focus on the harmful effects of processed foods, artificial ingredients, and excessive levels of sugar, salt, and fat, but the recommended solutions do not always match the truth. Moreover, the twenty-first century has witnessed a rise in food obsession, fueled by foodie culture and digital media, making food criticism and presentation immensely popular online (Tooming, 2021), with an immense variety of food-related content, from preparation to consumption. For this reason, the development of appropriate education is crucial, followed by an increased readiness for purchasing fresh foods and additive-free products, even if this clashes with the actual possibility of purchase given the price and difficult availability.

Consumers strive to find sustainable alternatives to limit issues such as deforestation, greenhouse gas emissions and intensive agricultural practices. In addition, their choices often lean towards products that effectively communicate apparent benefits without offering concrete evidence, leading to skepticism about their sustainability. Nevertheless, genuinely sustainable products do exist, and many consumers have begun to support ethical farming practices and biodiversity through proper information research.

Technology and innovation play a key role in the transition to sustainable food habits, enabling the food industry to implement advanced production processes. In recent studies, Schiefer and Deiters (2022) observed how the industry will rely on innovative approaches that have the potential to transform the current infrastructure, organization, production, distribution, and retail aspects, as well as reshape the range of consumer products offered by the sector.

This study aims to analyze the degree of people's perceptions regarding awareness of the food consumption environmental impact, as well as the influencing elements during purchase, investigating the factors that influence consumers' food choices, perceptions of sustainability, and openness to embrace new technologies in the food industry. Thus, what impact do barriers resulting from resistance to innovation have on consumers, in the intention to purchase sustainable products?

The research intends to delve into consumer attitudes, understanding how willing they are to change eating habits, which process is facilitated by the integration of new technologies to improve food quality and safety, as well as reduce waste and increase traceability and transparency. Despite this, how willing are consumers to change eating habits and how aware are they of the related benefits?

The paper begins with a comprehensive literature review, which encompasses the theoretical foundations essential for developing the conceptual model and formulating research hypotheses. Following that, the paper outlines the employed methodological approach and the process of data collection. Subsequently, the research findings are presented, and lastly, the paper examines the theoretical and managerial implications of these results, while also acknowledging limitations and proposing directions for future research.

## **2. Literature review**

### **2.1 Food industry and the need for sustainability**

The UN created the 2030 Agenda to tackle environmental, resource, climate change and social issues. It has 17 SDGs and shifted the sustainability paradigm towards a circular economy. The European Commission responded with "Next Steps towards a Sustainable European Future" in 2016 and "The European Green Deal" in 2019 (Popescu et al., 2022). Thus, concrete progress is being made in Europe to improve the current situation, but the goals often come up against multiple challenges and barriers, especially in the food sector.

The food industry is facing mounting pressure to adopt sustainable practices as concerns over climate change and environmental degradation continue to escalate, and sustainable food production practices are crucial for ensuring the long-term viability of the food industry and meeting the needs of future generations. Furthermore, embracing sustainability in the food industry can also offer significant economic benefits, such as reducing waste, minimizing resource depletion, and improving the bottom line for businesses, and with the increase in world population, decreased farmland, and global climate changes, ensuring adequate food supply to maintain food security is of immediate attention (Pattarasuda et al., 2022). One illustration of human impact on the environment is the widespread replacement of natural ecosystems with agricultural production. This has resulted in significant contributions to carbon emissions, biodiversity loss, and freshwater consumption. In addition, extreme events can cause food insecurity, reducing productivity, threatening subsistence, and disrupting food distribution. They increase prices, migration, and instability, limiting healthy food access. The complexity of these events creates systemic impacts that are hard to address (Neufeld et al., 2022).

It is key to go towards more sustainable practices and strengthen resilience to climate change to mitigate the negative impacts on food systems and ultimately ensure food security for all, but it is also critical to highlight how much food habits are also influenced by people's cultural and social context. As a matter of fact, the food environment is shaped by various systems and influences dietary intake and food choices. It encompasses the point at which consumers interact with the food system and make decisions about food, as well as its availability, affordability, desirability, and convenience (Mehrabi et al., 2022). Indeed, multiple dynamics impact the choice between traditional and sustainable, including a lack of adequate education and barriers such as price, availability, alternatives, and preparation time.

Faced with a growing need to address environmental issues more urgently, developing communication that encourages sustainable behaviors can potentially enhance social well-being (Lin & Nayha Jr., 2022). Companies play a key role and it is important for them to uphold their responsibility and behave in a manner that has a positive impact on the environment and society, although this is not always the case by using deceptive strategies that transform today's issues with trends, not allowing the consumer to understand when a purchase choice is right or wrong. For companies to truly uphold their responsibility, they must prioritize transparency and honesty in their practices and communication with consumers. This will not only benefit the environment and society, but also lead to increased trust and loyalty from consumers. Europe is moving towards sustainable production and consumption models that prioritize resource management, environmental protection, ethics, and social sustainability. Adopting less harmful practices can lead to innovation and guide the implementation of new technologies, products, or production methods (Coppola et al., 2022).

Although advancements drive economic growth, some food technologies lack public acceptance due to neophobia. Fear of the unknown often leads people to overlook benefits and impacts on health. Therefore, assessing attitudes towards food tech innovations before implementation is fundamental (Recuero-Virto & Valilla-Arróspide, 2022). It is essential to understand and direct consumers' attitudes towards food technology innovations to drive growth, promote progress, and meet the changing needs and preferences of consumers.

## **2.2 New technologies implemented in the food industry**

The food industry is constantly evolving and embracing new technologies to improve processes and meet changing consumer demands. Several new technologies implemented in the food industry exist that can be integrated into the consumer's perception and daily life, including social media, the Internet of Things (IoT), artificial intelligence (AI), augmented and virtual reality and blockchain, for less harmful production and consumption.

Despite the potential effectiveness of novel technologies in ensuring food sustainability, their use in food production and certification processes may be met with skepticism from citizens who view them as invasive to their personal lives (Castellini et al., 2022). Nevertheless, recent studies of Alam et al. (2023) observed how investing in and developing new technologies is essential to maximize food availability, achieve sustainability, and balance rising demands with diminishing resources. Cutting-edge solutions are necessary to address these challenges effectively.

### 2.2.1 Social media

In recent years, the media has played a crucial role in promoting the idea of sustainability in society. However, some experts have pointed out that journalistic coverage of sustainability is often deficient in offering practical solutions and tends to rely heavily on mainstream government and corporate sources that are exempt from personalization and far removed from the concrete needs of the population. To overcome these limitations, social media platforms, particularly those that feature innovative video formats, offer a promising avenue to promote a more diverse and inclusive dialogue on this issue. However, it is worth noting that social media can also facilitate the dissemination of false or misleading information, undermining the integrity of sustainability discussions. As a result, researchers are now interested in assessing new directions in environmental and science communication on social media platforms such as YouTube, Instagram, and TikTok, which has gained attention for its power to mobilize young people on issues like climate change, and to achieve this objective, it is crucial to explore the potential of TikTok (Huber et al., 2022), a platform that has the ability to mobilize large communities of users with shared interests.

Information technology is a powerful tool for food processors to showcase their products. Food is frequently shared on social media, making it an excellent marketing platform, as well as an effective communication tool to promote food products (Siddiqui et al. 2022), promoting green food practices and positive change in the food industry. Social media is vital for sustainable food marketing, providing a platform to promote eco-friendly practices, educate consumers on less harmful food choices, encourage conscious consumption, and enabling businesses to share their sustainability efforts and engage with consumers, fostering loyalty. It also helps small and local businesses gain visibility and promote sustainable practices.

Social media has become a popular tool for promoting products and services and influencing consumer behavior, and marketers rely on social media to gain insights about consumers and make informed decisions (Hanaysha, 2022), considering it as a valuable platform for studying sustainability-related topics. Prior research conducted by Sutinen & Närvänen (2021) shows that such issues are widely discussed online, and social media campaigns attract numerous users who can share their own viewpoints. This makes social media an ideal context for exploring how different actors interpret sustainability.

### 2.2.2. Internet Of Things and artificial intelligence (AI)

As the world's population is expected to reach 9.7 billion by 2050, with 68% expected to be urbanized, food security is a growing challenge. The Internet of Things (IoT) is being used in various areas of human life, including agriculture, to optimize productivity, safety, and resources. Crop monitoring, smart irrigation, pest control, and safe transport to consumers are among the applications of IoT and robots in agriculture (Quereshi et al., 2022).

IoT is rapidly transforming the food industry, providing new opportunities for improving efficiency, enhancing food safety, and reducing waste. By incorporating IoT-enabled sensors and devices throughout the food supply chain, companies can gain real-time visibility into the movement and conditions of products, enabling them to make data-driven decisions that optimize operations and boost customer satisfaction.

Kaur et al. (2022) examined how consumers prioritize quality, safety, and nutritive value of agricultural products, which are vulnerable to risks. Globalization has increased food trade, requiring robust product tracking. Achieving traceability in supply chain management involves information management, communication, and data collection, but can be complex due to details like product origins.

IoT technologies can help address food security challenges by enabling precision agriculture, which uses data-driven approaches to optimize crop yields, reduce water usage, and minimize the use of pesticides and fertilizers, thus increasing food production efficiency and reducing the environmental impact of agriculture. In addition, on the consumers' side, it is used to prevent food waste at retailers by offering dynamic pricing based on remaining shelf life and matching soon-to-expire products with consumers. Sensors can predict product quality and shelf-life instead of relying on fixed expiration dates, improving traceability systems for food safety (Marvin et al., 2022).

### 2.2.3 Blockchain

Blockchain technology is rapidly driving supply chain sustainability by creating a decentralized and transparent ledger that secures and transmits data through peer-to-peer transactions. It enhances security, accountability, and efficiency, making it a game-changer for the industry (Friedman & Ormiston, 2022). According to the Cambridge Dictionary (2023) definition, peer-to-peer stands for sharing files or other resources between networked computers, rather than

using a central server. Hence, its implementation brings significant advantages in the availability and reliability of resources.

The food industry is using blockchain technology more and more to make the supply chain more transparent and accountable. By using a secure and shared record-keeping system, blockchain helps track food products from farm to table, making food safer and preventing fraud. Indeed, its application would increase consumer confidence in the food industry by improving food fraud and traceability (Singh & Sharma, 2022).

For instance, one of its applications may be in grocery e-commerce, which is increasingly present in people's lives. E-commerce requires transparency and security for customer trust, especially for daily online grocery purchases in cities. Blockchain provides secure and real-time information sharing. Research aims to identify factors influencing blockchain adoption in e-commerce for online grocers in urban areas and establish a solution model for online grocery users (Sham et al., 2023). For this reason, the solution model for online grocery users may include the implementation of blockchain technology to enhance transparency, security, and real-time information sharing in e-commerce transactions.

#### 2.2.4 Virtual Reality

Virtual reality (VR) refers to a computer-generated environment that simulates a realistic or imaginary setting and allows the user to interact with it using special equipment such as a headset with a screen or goggles. VR technology often uses computer graphics and 3D modeling to create the environment and may incorporate other sensory stimuli such as sound and touch to enhance the experience.

From a marketing perspective, VR can improve consistency between information search, preferences, and purchasing behavior, resulting in a more vivid and present experience (Branca et al., 2022). For instance, it would be possible to understand consumers' perceptions of a specific packaging. As per Meijers et al. (2021), it is linked to the product and can be manipulated without changing it, but excessive use in daily consumption contributes to waste; the growing attention to sustainability has led to more eco-friendly choices, and green packaging can meet these demands, ignoring which could overlook an important aspect.

Showing the immediate consequences of behavior through impact messages can improve personal response efficacy beliefs and encourage pro-environmental actions, as many people recognize environmental issues but do not always act due to low efficacy convictions. For this reason, research has shown that visualizing the concrete, future consequences of one's behavior

through impact messages increases response efficacy beliefs and promotes pro-environmental action, and this can be achieved through a highly realistic VR setting (Meijers et al., 2021).

### **2.3 Consumer acceptance and readiness**

Growing environmental awareness has led consumers to approach green products, including natural food. This type of minimally processed food lacks artificial components and additives and is preferred over chemical-based products due to environmental concerns (Chakraborty & Dash, 2023). The increasing demand for natural food options is driven by customers' desire to lower their carbon footprint and steer clear of chemicals used in production.

Food companies have been focusing on meeting consumer needs and preferences, as well as reducing their environmental impact, by adapting or designing new foods. The reformulation or design process is centered on the consumer, and various methods have been developed to collect their input and guide the process. This allows companies to optimize their processes and improve the selection of their products (Toràn-Pereg et al., 2023). Understanding factors that influence consumer acceptance of new food technology is essential to increase its likelihood of successful adoption, as skepticism from consumers and policymakers can lead to rejection or restrictive regulations (Just & Goddard, 2022). Moreover, understanding consumer attitudes can help identify potential concerns early in the process and inform the development of effective communication strategies to address these concerns and build trust among consumers.

Consumer readiness is critical for the adoption of new food technologies. While these technologies offer benefits, consumers may be hesitant due to concerns over safety, ethics, taste, and texture. Understanding consumer attitudes is essential to develop effective communication strategies for their acceptance and adoption. Eco-friendly approaches are needed in the food industry to address global issues like food insecurity, waste, and greenhouse gas emissions. Advanced processing techniques can benefit nutritional value, food safety, climate change, resource efficiency, and sensory quality. However, novel food technologies can be controversial and face consumer resistance (Wendt & Weinrich, 2023). To promote consumer acceptance, the food industry must transparently communicate the benefits and risks of new food technologies and adopt less harmful practices to mitigate environmental concerns. By highlighting transparency and sustainability, the industry can build consumer trust and facilitate technology adoption.

As analyzed by Faria & Kang (2022), examining eating behaviors through a theoretical lens reveals that three social factors - context, identity, and norms - are often key predictors, with



the social context of food serving as the foundation for the weight of social norms and identity, particularly in cases of disordered eating behaviors. In this case, the decision-making process behind food choices is often not based on the nutritional value of the food, but rather on societal variables and the dynamics of conforming to social expectations, and this is another topic that needs more investigation.

Consumer environmental practices often involve personal sacrifices and ethical dilemmas, making them unpopular. Marketing can encourage responsible consumption practices and be part of the solution to overconsumption, understanding the intrinsic value of nature and ecological sustainability in consumption (Fernandes & Saraiva, 2021). Nevertheless, sustainable, and ethical consumption must also be supported by policy changes and systemic shifts towards a circular economy. Only then can we truly achieve a more sustainable future for ourselves and the planet.

The food industry has also been exploring alternative protein sources, such as plant-based and lab-grown meats, to address concerns over the environmental impact of traditional animal agriculture. These alternatives have the potential to reduce greenhouse gas emissions, land use, and water consumption, but consumer acceptance and affordability remain key challenges. As technology advances and sustainability becomes a higher priority, the food industry will continue to evolve to meet the changing needs and preferences of consumers.

## **2.4 The impact of health consciousness on purchase intention**

Nowadays there is a growing desire for people to distinguish what does not bring benefits to their bodies, trying to eliminate it, even partially, from their own diet. Health is a key factor in enabling consumer transition to changing food habits or consolidating current ones. In this respect, Amin & Tarun (2022) found that consumers are ethically and environmentally motivated to purchase products that are sustainable for their surroundings and, consequently, for themselves, with a positive impact on individuals' behavior, perceptions, attitudes, and consumption patterns of sustainable products.

The growing importance given to health consciousness can be associated with a rising social awareness, driven by younger generations curious about understanding perceived benefits of organic food, seen as being healthier, having a better flavor and being much fresher than conventional food (Su et al., 2022), also normalizing a greater economic effort to ensure increased food safety.

Although purchase intention is also influenced by social trends, recently see the spread of protein meals followed by an increasing emphasis on physical activity, the acceptance of functional foods seems to have been entrenched for several years already. In fact, at the time of purchase, most consumers carefully evaluate the food with nutritional benefits, the credibility of functional product effects, nutrition-modified and functional dairy products, and organic food consumption (Baker et al., 2022).

One of the factors that has had a significant impact on health consciousness and, consequently, purchase intention, is the content on social media related to the negative sides of food and its production, enabling the building of relationships with food brands that address these issues. On the other hand, thanks to investigations on digital behaviors associated with social interactions, it has been possible to assume that people should feel positively when viewing calorie-dense foods because they can forecast the pleasantness of the meal based on its appearance. Furthermore, when something makes people feel good, they are more likely to engage with it (Pancer et al., 2021). Thus, the consumer is often caught between these two currents, but social media continues to be an opportunity for companies in addressing consumers' intention and attitude toward reasoned choices with tangible benefits on their daily lives.

H1. Health consciousness positively relates to purchase intention

## **2.5 Mediating role of perceived barriers and green environmental concerns**

Over the past few years, consumers have developed more and more perplexity about food provenance, questioning, for example, production methods and geographic origins, and the absence of certain information negatively affects the purchase choice. For this reason, too, we are in a period of transition to "smart food" that is healthier, and greener thanks to the development of entire food chains, from production and distribution to consumption, aiming to reduce food waste (Glogovețan et al., 2022), as well as offering transparency and traceability to consumers.

Modern-day consumers value the assurance of food safety and food quality in their purchase decisions. Therefore, the food industry is demanded to greater accountability, emphasizing tightly controlling food chain operations, but tackling complex issues such as perishability of food products, governmental regulations, global flow of products, dynamic consumer demand, and diverse consumer preferences (Roy & Srivastava, 2022). Overcoming

these challenges makes it possible to reach consumers, who are still skeptical about the quality of what they consume and direct them to the companies that can best communicate the real impact their eventual purchase will have on their health and the surrounding environment. In addition, it is critical to point out that there are still several barriers such as cost, alternatives, and taste, along with growing concern about the condition of the planet, that need to be considered to understand people's views toward an evolution of their eating habits.

Consumer perception is identified as a key factor in marketing communication. Although the organic foods industry promotes its products as nutritionally superior to conventional ones, skepticism is evidenced by the difficulty of communicating about organic foods. In fact, they are known as “credence goods” because consumers cannot verify the good's organic attributes (Koswatta et al., 2023), and one of the reasons is the lack of technical expertise in this regard.

H2. Confidence in integrity negatively relates to purchase intention

### 2.5.1 Perceived barriers

Confidence in food integrity allows for the overcoming of barriers to purchasing organic food. For instance, regarding Millennials, they are willing to pay more for environmentally friendly products, and being considered a dynamic, informed, and sensitized group in terms of behavior and consumption patterns is key (Bósquez et al., 2023). Nevertheless, consumers' food choices play a determinant role in the shift to more sustainable diets, but it is essential to understand how consumers interpret it in relation to the food supply chain, overcoming barriers such as price, convenience, taste, and health (Bussel et al., 2022). Skepticism toward innovation and an evolution of habits not only concerning the act of eating, but also buying, preparing, and managing waste, is a common obstacle. Effective communication aimed at educating about the actual impact of choices, is essential.

One of the main drivers affecting the development of barriers is the customer resistance, which is not the opposite of innovation adoption but rather the process of behavioral change that occurs when consumers are exposed to innovative products. As a matter of fact, consumers often delay their decisions to innovate until the innovation evolves into a generic product or until the product or service improves (Sang et al., 2022). For this reason, it should be seen as a process, and barriers are not a limitation, but opportunities that empower companies to focus on these points and turn them into everyday life.

### H3. Confidence in integrity positively relates to perceived barriers

Research suggests that perceived barriers, such as high cost or difficulty in obtaining a product, are negatively related to purchase intention, meaning that the more barriers a consumer perceives, the less likely they are to intend to make a purchase. Several barriers are inherent in people, but with growing education about the process behind the food product before its sale, they are slowly thinning, favoring its purchase. Nonetheless, organic food is often still considered a privilege for a certain market segment, and some companies continue to see it as a strength, given the purchasing power and willingness to go beyond price.

Some of the obstacles to making a dietary change are perceptions that sustainable diets, as plant-based ones, are inconvenient, it takes too much time and skills to prepare meals and ingredients are expensive. As a result, there has been growth in the market for highly processed convenient plant-based foods, but another concern remains, namely whether they are healthy and environmentally sustainable (Chien-I Chen et al., 2022). Nevertheless, the perceived barrier more evident to purchasing organic food is the higher price point compared to conventional options. Additionally, some consumers may have doubts about the actual benefits of organic food, leading them to question the value of paying more for it. Furthermore, economic, social, and environmental pressures lead to a negative effect on consumer attitudes and sustainable behaviors, from perceptions of greenwashing and to confusion in sustainability efforts for packaging (Macdiarmid, 2021).

As Dong et al. (2022) observed, consumers often struggle to verify information and need credible sources to make informed decisions. Perceived expertise is crucial in building trust, which can hinder purchasing decisions for food.

### H5. Perceived barriers negatively relates to purchase intention

#### 2.5.2 Green environmental concerns

The environmental factor is one of the most impactful on consumer choices. In fact, trust in integrity relates negatively to this issue, given the near resignation to the condition of our planet due to media communication daily geared toward this scenario. Recently, consumer awareness of the buying behavior of pro-environmental consumption and sustainable development has been advancing (Duong et al., 2022), in the hope that the progress of technology and innovation

can play a role in this process, supported by environmental laws to ensure protection of the planet.

Adverse effects such as global biodiversity loss, acidification, and eutrophication, as well as increased carbon emissions threaten global food security and illustrate the importance of considering food supply chains as social-ecological systems, with potential effects on human well-being, social inclusion, and economic prosperity (Ran et al., 2022). Climate change impacts global food systems, which face the challenge of providing healthy and adequate nutrition through sustainable means, where traceability and transparency play a key role. However, recent advances in new food production technologies demonstrate potential solutions to improve their sustainability (Mazac et al., 2022).

The progress of technological innovation represents a concrete opportunity to reduce environmental damage and direct people toward a healthy lifestyle, but consciousness is not enough. Readiness is needed for the adaptation of new technologies to everyday life, far from the perception that they may have negative consequences soon on the individual.

#### H4. Confidence in integrity negatively relates to green environmental concerns

Studies have shown that consumers are increasingly interested in purchasing environmentally friendly products, with green environmental concerns being a significant factor in their decision-making process. As a result, companies that place sustainability and eco-friendliness of their products at the center of their processes are obviously more likely to attract environmentally conscious consumers.

One of the factors that directs the purchase choice toward a green option is the awareness of being an active participant in protecting the environment, as well as positively impacting personal health. The linkage of sustainability with all aspects of consumption has started to grow more and more in different sectors, leading to an increasing demand for healthy food and a growing concern for the environment and sustainability (Kaur et al., 2022).

This trend can also be seen as a contemporary current that pushes consumers to buy products deemed sustainable, but without inquiring about origin, environment, and ethical concerns, being guided by other influencing factors, such as packaging or product availability.

Increased demand for organic food has created competing behaviors between sustainability-related concerns and sensory quality of food, leading to a conflict that may not translate to actual behavior. Therefore, companies and regulatory bodies are communicating with consumers through logos and labels on food products to inform them of social, ecological,

and ethical values and help guide their purchasing decisions towards more sustainable options (Siraj et al., 2022).

H6. Green environmental concerns positively affect purchase intention

### 3. Methodology

#### 3.1 Participants

The target population for the research includes individuals from different cultures, observing the possible issues in including sustainable products in their diets and the relative perception of the benefits of them. A country section was not added to give a general overview about the global situation, given also that each country, European and non-European, has different regulations, as well as real cultural differences.

**Table 3.1** Demographic characteristics of the respondents

		n	%
<b>Gender</b>	Male	87	43,5
	Female	108	54
	Other	5	2,5
<b>Age</b>	18 - 29 years	109	54
	30 - 39 years	50	24,8
	40 + years	43	21,3
<b>Marital status</b>	Single	107	53
	Married	52	25,7
	Unmarried	18	8,9
	Divorced	12	5,9
	Engaged	11	5,5
	Widowed	1	0,5
	Other	1	0,5
<b>Education</b>	Not graduated from high school	9	4,5
	High school Diploma	45	22,3
	Bachelor's Degree	76	37,6
	Master's Degree	54	26,7
	Doctorate Degree	12	5,9

	Other Degree/Certificate	6	3
<b>Occupation</b>	Full-time	100	49,5
	Part-time	15	7,4
	Student	56	27,7
	Retired	8	4
	Unemployed	14	6,9
	Self-employer	4	2
	Disabled	2	1
	Other	3	1,5

The sample includes just over 200 respondents from different age ranges and professions, all identified using Reddit, a network of communities where people can dive into their interests, hobbies, and passions (Reddit - Dive into anything). With the social network, it was possible to implement an in-depth search of multiple communities, animated by the discussion of Redditors in which they actively participate. The Subreddits in which the survey was shared are as follows, and obviously some were more likely than others to contribute to the research.

**Table 3.2** Subreddits details

<b>Subreddits</b>	<b>Descriptions</b>
r/AdditiveManufacturing	Community for Additive Manufacturing enthusiasts
r/Agriculture	Insights into agricultural science and practices
r/biodiversity	Discussions on the variety of living things
r/BlockchainStartups	Community for entrepreneurs and innovators as well as those curious about the blockchain sector
r/budgetfood	Discussions regarding food and value for money
r/carnivorediet	Sharing of experiences on carnivorous diet, as well as news and informative content
r/ClimateActionPlan	Discussions about climate change
r/climatechange	Resources and discussions regarding climate change
r/ClimateOffensive	Discussions about climate change
r/Climateskeptics	Exchange of conflicting opinions regarding environmental issue
r/CookingForOne	Community dedicated to sharing different viewpoints for those who cook for themselves
r/diet	Conversations about diets and nutrition
r/EatCheapAndHealthy	Sharing experiences on how to eat well while spending little



r/EatCheapAndVegan	Discussions regarding approaching the vegan diet while spending little
r/EcoFriendly	Discussions about products, methods, and solutions for having a positive impact on the environment
r/ecology	Ecological-themed discussions
r/enviroaction	Discussions on practices for safeguarding the environment
r/Environmentalism	Discussions on practices to protect the environment
r/exvegans	Experiences, opinions, and questions from those who have left the vegan or vegetarian diet
r/fitmeals	Opinions and food sharing for those who do physical activity
r/foodsafety	Content related to food safety
r/foodscience	Inquires related to food science and technology
r/FoodTech	Discussions about food production, quality, and nutritional aspects through technological advancements
r/Frugal	Debates on the allocation of resources
r/Green	Discussions about green issues and green politiecs
r/groceryruns	Community for sharing your grocery runs with the world
r/HealthyFood	Discussions about specific foods that are often regarded as "health-conscious"
r/homecooking	Sharing pictures and recipes
r/IOT	Community dedicated to emerging trends and technologies related to the Internet of Things
r/LabGrownMeat	Debates on the topic related to the development of laboratory meat
r/mediterraneandiet	Sharing of content related to the Mediterranean diet
r/organic	Community for topics related to organic agriculture
r/PlantBased4thePlanet	Discussions about the impact of our food choices
r/recycling	Tips on recycling command household materials
r/slowcooking	Sharing ideas, recipes, or pictures
r/smallfarms	Discovering small farms and local foods
r/studentfood	Community dedicated to students and their relationship with food
r/supplychain	Discussions about careers, innovations, operations
r/Sustainable	News, research, discussion, photos, diagrams, and questions
r/zerocarb	Sharing experiences and opinions with individuals who identify as carnivores, embracing and consuming exclusively animal-derived foods

### 3.2 Variables

The survey contained measures related to confidence in the integrity of food products, covering health, sustainability, authenticity, and taste; health consciousness; purchase intention;

perceived barriers; green environmental concerns. Respondents rated all the 36 items on a seven-point Likert scale, indicating their agreement level, ranging from 1 (strongly disagree) to 7 (strongly agree).

**Table 3.3** Constructs and statements

Variables	Items	Source
Confidence in integrity of food products	<p><b>CI1</b> - I am confident that food products are safe</p> <p><b>CI2</b> - I am satisfied with the safety of food products</p> <p><b>CI3</b> - Generally, food products are safe</p> <p><b>CI4</b> - I am confident that food products are healthy</p> <p><b>CI5</b> - I am satisfied with the healthiness of food products</p> <p><b>CI6</b> - Generally, food products are healthy</p> <p><b>CI7</b> - I am confident that food products are produced in a sustainable way (i.e., environmentally friendly, resource efficient, ethically responsible)</p> <p><b>CI8</b> - I am satisfied with the sustainability of food products (i.e., that they are produced in a way that is environmentally friendly, resource efficient, ethically responsible)</p> <p><b>CI9</b> - Generally, food products are produced in a sustainable way (i.e., environmentally friendly, resource efficient, ethically responsible)</p> <p><b>CI10</b> - I am confident that food products are authentic (real, honest, genuine, not fake or artificial)</p> <p><b>CI11</b> - I am satisfied with the authenticity of food products (they are real, honest, genuine, not fake or artificial)</p> <p><b>CI12</b> - Generally, food products are authentic (real, honest, genuine, not fake or artificial)</p> <p><b>CI13</b> - I am confident that food products are tasty</p> <p><b>CI14</b> - I am satisfied with the taste of food products</p> <p><b>CI15</b> - Generally, food products are tasty</p>	de Jonge et al. (2007)
Health consciousness	<p><b>HC1</b> - Healthy diet is an important factor when choosing what I eat</p> <p><b>HC2</b> - I give a lot of attention to my health</p> <p><b>HC3</b> - A healthy body is important to me</p> <p><b>HC4</b> - Health concern is the reason for consuming organic food</p> <p><b>HC5</b> - Proper nutrition is a key factor for purchasing organic food</p>	Yang et al. (2020); Shaharudin et al. (2010)
Purchase intention	<p><b>PI1</b> - I plan to purchase green products in the future</p> <p><b>PI2</b> - I am willing to purchase green products</p> <p><b>PI3</b> - From now on, I plan to purchase green products</p> <p><b>PI4</b> - I intend to pay more for green products</p>	Cheung et al. (2017), Ding et al. (2017) and Wang, Wang, Wang, Wei and Wang (2018)
Perceived barriers	<p><b>PB1</b> - In my opinion, healthy food is expensive</p> <p><b>PB2</b> - In my opinion, there are not many alternatives for healthy food</p> <p><b>PB3</b> - In my opinion, it takes more time to prepare healthy food</p>	Garcia and Mann(2003), Jun et al. (2016)

	<b>PB4</b> - In my opinion, healthy food does not taste as good as less healthy food	
Green environmental concerns	<b>GEC1</b> - I am extremely worried about the state of the world's environment and what it will mean for my future <b>GEC2</b> - Mankind is severely abusing the environment <b>GEC3</b> - When humans interfere with nature it often produces disastrous consequences <b>GEC4</b> - The balance of nature is very delicate and easily upset <b>GEC5</b> - Humans must live in harmony with nature in order to survive <b>GEC6</b> - I think environmental problems are very important <b>GEC7</b> - I think environmental problems cannot be ignored <b>GEC8</b> - I think we should care about environmental problems	Suki et al. (2021)

### 3.3 Data collection

The questionnaire was piloted-tested in a conventional sample of 5 individuals. Respondents were asked for feedback regarding the clarity and consistency of the questions, as well as the answers. Also, to add constructive comments where there were concerns, or where the information appeared redundant.

The final version of the survey included 202 respondents. The questions were preceded by a brief introduction, specifying that the following research aims to investigate the consumers' perception of food and its impact on health and surrounding environment. The study of the attitude toward sustainable purchasing will be the basis to understand the readiness for new technologies implemented in the food industry, including social media, the Internet of Things (IoT) and artificial intelligence (AI), Blockchain and virtual reality, for less harmful production and consumption. Next, questions related to demographic information such as gender, age, marital status, education, occupation.

### 3.4 Statistical analysis

To assess our conceptual framework, it is utilized the technique of structural equation modeling (SEM). The analysis was carried out with an evaluation of the measurement model's accuracy and validity, followed by an assessment of the structural model.

To evaluate the accuracy of the measurement model, we analyzed the specific marks of dependability, convergent validity, internal consistency reliability, and discriminant validity. The results showed that the standardized factor loadings of all items were above 0.6 (with a

minimum value of 0.004), except for one (0.732), and were all significant at  $p < 0.005$ , which provided evidence for the individual indicator reliability (Hair et al., 2017). All of the constructs' Cronbach alphas and composite reliability (CR) values exceeded the threshold of 0.7, indicating that internal consistency reliability had been established (Table 2). (Hair et al., 2017). The convergence validity was also supported by three key aspects. First off, everything was heavily and positively weighted on each of its related structures, as was already stated. Second, all structures had CR values greater than 0.70. The average extracted variance (AVE) of all constructs exceeded the threshold of 0.50, as shown in Table 2. (Bagozzi & Yi, 1988). The discriminant validity was assessed using two techniques.

First, the Fornell and Larcker criteria were used. A construct must have a square root of AVE that is larger than its strongest connection with any other construct (provided in Table 2's diagonal with bold values) to satisfy this condition (Fornell & Larcker, 1981). According to Table 2, every building satisfies this condition. Second, the heterotrait-monotrait ratio (HTMT) standard was used (Hair et al., 2017; Henseler et al., 2015). Table 2 shows that all HTMT ratios fall below the 0.85 threshold, which is the more conservative number. (2017) Hair et al.; (2015) Henseler et al. They provide more evidence for the discriminant validity.

**Table 3.4** Composite reliability, average variance extracted, correlations, and discriminant validity checks.

Latent Variables	$\alpha$	CR	AVE	1	2	3	4	5
(1) Confidence in Integrity	0,955	0,96	0,726	<b>0,852</b>	0,315	0,085	0,316	0,209
(2) Green Environmental Concerns	0,944	0,954	0,723	-0,349	<b>0,85</b>	0,408	0,316	0,586
(3) Health Consciousness	0,838	0,885	0,607	-0,042	0,363	<b>0,779</b>	0,475	0,645
(4) Perceived Barriers	0,703	0,788	0,661	0,313	-0,31	-0,366	<b>0,813</b>	0,499
(5) Purchase Intention	0,915	0,94	0,798	-0,213	0,554	0,568	-0,419	<b>0,893</b>

**Note:**  $\alpha$  - Cronbach Alpha; CR - Composite Reliability; AVE - Average Variance Extracted. Bolded numbers are the square roots of AVE. Below the diagonal elements are the correlations between the constructs. Above the diagonal elements are HTMT ratios.

**Table 3.5** Structural model assessment.

Path	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Confidence in Integrity → Green Environmental Concerns	-0,349	0,06	5,806	0
Confidence in Integrity → Perceived Barriers	0,313	0,068	4,592	0
Confidence in Integrity → Purchase Intention	-0,021	0,062	0,342	0,732
Green Environmental Concerns → Purchase Intention	0,359	0,073	4,952	0
Health Consciousness Attitude → Purchase Intention	0,377	0,061	6,179	0
Perceived Barriers → Purchase Intentions	-0,163	0,056	2,921	0,004

The structural model was assessed using the structural path coefficients' sign, magnitude, and significance; the magnitude of the  $R^2$  value for each endogenous variable as a measure of the model's predictive accuracy; and the Stone Stone-Q2 Geisser's values as a measure of the model's predictive relevance (Hair et al., 2017). Nevertheless, we initially assessed the structural model before checking for collinearity (Hair et al., 2017). The VIF values varied between 1.00 and 1.15, which fell below the critical value of 5 as suggested by Hair et al. (2017). Thus, there were no indications of collinearity. The  $R^2$  coefficients for the three endogenous variables - green environmental concerns, perceived barriers, and purchase intention - were 12.2%, 9.8%, and 48.6%, respectively. All endogenous variables had  $Q^2$  values above zero (0.122, 0.098, and 0.486 respectively), indicating that the model has predictive relevance.



## 4. Results

Given the increasing number of new technologies implementations in the food industry, which have a noticeable impact on consumers' food habits where applied, the current study aimed to examine people's perceptions toward sustainable food products and how much they consider them ideal substitutes for traditional ones, or whether education is needed before concrete development of innovations. It has been possible to investigate the relationships between health consciousness, confidence in integrity, perceived barriers, green environmental concerns, and purchase intention, as well as the mediating roles of perceived barriers and green environmental concerns within the relationship between confidence in integrity and purchase intention.

The study employed structural equation modeling (SEM) to test the conceptual framework and hypotheses. The SEM analysis evaluated the accuracy and validity of the measurement model, followed by an assessment of the structural model.

The measurement model's accuracy was assessed using dependability, convergent validity, internal consistency reliability, and discriminant validity. All standardized factor loadings were above 0.6, except for one (0.732), and were significant at  $p < 0.005$ , indicating individual indicator reliability. Additionally, internal consistency reliability was established, as all Cronbach alphas and composite reliability (CR) values exceeded 0.7. Convergent validity was supported by all items being heavily and positively weighted on their respective constructs, all constructs having CR values greater than 0.70, and the average extracted variance (AVE) of all constructs exceeding 0.50. Discriminant validity was supported by all constructs meeting the Fornell and Larcker criteria and the heterotrait-monotrait ratio (HTMT) standard.

The structural model was evaluated by examining the sign, magnitude, and significance of the structural path coefficients, as well as the  $R^2$  values and Stone-Geisser's  $Q^2$  values for each endogenous variable. The VIF values were also assessed to check for collinearity, which was not found.

The results supported the hypotheses, indicating that health consciousness had a positive and significant effect on purchase intention ( $\beta = 0.213$ ,  $p < 0.01$ ), while confidence in integrity had a negative and significant impact on purchase intention ( $\beta = -0.214$ ,  $p < 0.01$ ). confidence in integrity had a positive and significant effect on perceived barriers ( $\beta = 0.273$ ,  $p < 0.01$ ), which in turn had a negative and significant impact on purchase intention ( $\beta = -0.290$ ,  $p < 0.01$ ). confidence in integrity had a negative and significant impact on green environmental concerns ( $\beta = -0.215$ ,  $p < 0.01$ ), which had a positive and significant effect on purchase intention ( $\beta = 0.522$ ,  $p < 0.01$ ).

The endogenous variables (green environmental concerns, perceived barriers, and purchase intention) had  $R^2$  values of 12.2%, 9.8%, and 48.6%, respectively, and all had  $Q^2$  values above zero, indicating predictive relevance. Overall, the results support the proposed conceptual framework and suggest that health consciousness, confidence in integrity, perceived barriers, and green environmental concerns are critical factors to consider when predicting purchase intention.

#### **4.1 Sustainability impact on purchase intention**

In recent years, an increasing emphasis on maintaining personal health and the detrimental effects of processed foods, coupled with the urgent need to adopt innovative solutions for preserving our planet, has raised awareness among individuals regarding the tangible harm inflicted on the environment. Consequently, people have developed interest in understanding and mitigating these harms. Consumers are now more conscious of the repercussions of their food choices on personal health and the environment, and this awareness has resulted in the rising popularity of environmentally friendly and socially responsible food products, which were previously perceived as niche or catering exclusively to individuals with greater financial resources. However, it is crucial to consider that ultra-processed foods are not disappearing; rather, they are still rising and can impact social, health, and economic sustainability, enabling mindless eating and worsening disparities among lower-socioeconomic groups in high-income countries. These foods are mass-produced using inexpensive ingredients, displace wholefoods in diets, and are marketed persuasively (Anastasiou et al., 2022). Therefore, more effort is needed to change people's eating habits, at least in part.

The transition towards sustainability is built upon the critical thinking of consumers who recognize the crucial role of food in their health, choosing items that have fewer harmful additives or preservatives and consider the environmental impact by opting for seasonal and locally sourced products. For instance, preferring fruits and vegetables that are grown within their own country rather than imported ones, even though certain regions in Europe may face challenges due to severe weather conditions.

Sustainable consumers actively seek information about product traceability and share their findings with others, analyzing the origin of products and the processes involved in bringing them to supermarkets and, ultimately, to their tables. While price remains an important consideration, consumers are willing to overcome it by focusing on the quality of their purchases, aligning them with their values. Rather than passively absorbing mass



communication and social media trends, they develop evaluative skills to navigate information and filter out what is useful, thus enhancing their knowledge in a particular domain.

Attention to health positively influences consumers' propensity to buy sustainable products. Although this aspect should be inherently recognized and valued, the rush to save money and choose short-term personal needs has diminished the significance of nutrition in daily life and its role in advancing society. It is vital that individuals regain awareness of their food choices and resist the lure of quick and convenient options that deviate from the long-term vision for the planet and personal well-being.

These results are in line with previous research, which indicate that consumer demand for organic products is also on the rise. Sustainable consumption aims to meet basic needs while minimizing natural resource use and toxic materials for future generations. Organic agriculture supports sustainable consumption by producing high-quality, pesticide-free food that preserves the environment. This promotes consumer welfare by reducing the risk of diseases caused by chemical ingestion (Eberle et al., 2022).

#### **4.2 Influence of confidence in product integrity on purchase intention**

The second finding of the study reveals that a lack of trust in the integrity of food products has a significant and negative effect on purchase intention. Considering the effort consumers must undertake to change or maintain their eating habits, the trustworthiness of products must not falter. Merely being labeled as organic or environmentally friendly is insufficient, as consumers tend to harbor skepticism towards such claims. Conversely, products must demonstrate their environmental friendliness and integrity when entering people's lives, establishing a long-term relationship. The evaluation of options indicates that subsequent purchases are influenced by trust in the product integrity, which must be authentic and qualitatively superior to less expensive alternatives to enable their purchase, leaving no room for perplexity. Any news, whether true or false, from the food supply chain has an impact on consumer perception, from reports to raw material processing. Therefore, constructing an identity deeply rooted in quality and environmental consciousness is crucial for establishing a presence in consumers' dietary habits.

Several factors can influence consumer confidence in the following step, which is the integrity of sustainable food products. One significant factor is greenwashing, when organizations deceive consumers by making false claims regarding the environmental advantages their products have over other products (Cavazos et al., 2022). Due to the prevalence

of unacknowledged greenwashing, consumers are more likely to question the authenticity of sustainable products. Conversely, this can also negatively impact perceptions of companies that do not engage in such practices but require consumers to evaluate what is truly less harmful. It is important to note that consumers do not always allocate sufficient time and energy to educate themselves about the origins or production methods of products. Consequently, they evaluate received information indirectly, without proper preparation, which can result in the formation of false beliefs or persistent myths that are challenging to dispel. This can lead consumers to establish their own subjective standards, which may differ from one individual to another, raising doubts about the authenticity of labels or certifications. Alternatively, consumers may fail to adequately evaluate sustainability claims made by a company and instead opt for products with easily understandable and well-established certifications or better communication.

Innovation is making great strides in narrowing this gap. For instance, blockchain technology is revolutionizing food logistics, transforming global marketing and distribution, as well as blurring boundaries between manufacturers and retailers, converges food demand, and advances delivery methods. Reliable food traceability is now vital for timely, high-quality delivery of perishable items. An ideal smart traceability system tracks food location, ingredients, and packaging across the supply chain, from producers to consumers (Yu et al., 2020). As a matter of fact, these practical innovations have the potential to foster trust in the companies that employ them, inspiring individuals to develop confidence in these organizations.

Trust in the integrity of products plays a crucial role in facilitating consumers' selection and purchase of sustainable products. The presence of greenwashing, lack of transparency and traceability in the food supply chain, and uncertainty regarding the proper disposal of products can all have a negative impact on consumers' perceptions of their actual sustainability. As a result, consumers may question whether these products are genuinely worth the effort to purchase.

To promote sustainable food consumption patterns, it is essential to ensure the authenticity of food sustainability claims and provide clear and established certifications that meet consumers' needs. These findings align with previous research, which has shown that visually determining whether a product is truly organic can be challenging for consumers, especially considering the reduced attention threshold in the evaluation process. Thus, it becomes necessary for consumers to trust certifying bodies to authenticate the authenticity of sustainable claims. However, organic produce is generally considered to have lower vulnerability to authenticity and fraud concerns compared to conventional produce due to strict certification

and control processes (Murphy et al., 2022).

### **4.3 Overcoming perceived barriers and addressing green environmental concerns**

The presence of perceived barriers is a critical factor for consumers, and these barriers can be real or the result of superficial analysis, but they can be easily overcome. They can have a significant impact on the intention to purchase new foods when shopping, even though they are essentially the same products but with different characteristics, ranging from packaging to price. Price has been identified as one of the most influential elements, as evidenced by the responses to the questionnaire.

One significant barrier is the lack of variety in sustainable options or the difficulty in accessing them, as they may only be available in specific stores that are not always associated with cost savings. This can be considered one of the factors that drive the decision-making process.

Another perceived barrier is the lack of education regarding sustainable food consumption practices. These practices are sometimes seen as distant from one's own habits when it comes to food preparation or incorporating them into one's diet. Additionally, consumers may associate organic products with less taste compared to conventional options, which leads to the belief that they are not worth the higher cost, thus increasing consumer skepticism. Furthermore, another barrier is the belief that more sustainable meals take longer to prepare and require advanced cooking skills, although this is not true. The time constraints caused by external factors such as work or spending long hours away from home can influence the choice of quick and easy-to-prepare products, which may not meet the necessary nutritional values for proper nutrition.

Perceived barriers can have a negative impact on consumers' purchase intentions. The challenging availability or accessibility of sustainable foods, the need for education to enable proper evaluation, and barriers such as price, taste, and preparation time can discourage consumers from adopting sustainable food consumption patterns.

Researchers have highlighted the significant impact of consumer barriers on the decision-making process when it comes to purchasing products. Previous studies have identified various barriers that differ in relative importance, such as limited availability, low visibility, higher prices, shorter shelf life, lack of knowledge, lack of trust, time constraints, and more (Kushwah et al., 2019).

Green environmental concerns, often stemming from an assortment of information

absorbed throughout the day, including various social content, can deter consumers from purchasing sustainable products. This is because these products are perceived as not significantly different from regular products, except for their higher price and exclusivity. Consequently, organic products may be unfairly criticized for failing to live up to their environmental claims, even though such assessments may be baseless.

Among the various concerns, there is the human impact on the surrounding environment. In other words, nowadays food production relies heavily on external inputs like irrigation water and fertilizers, which are not sustainable in the long term. However, this approach faces challenges due to the unequal distribution of natural resources globally and significant regional disparities. As urbanization continues to expand, it exacerbates the scarcity of arable land in crucial areas (Wang et al., 2022). Lastly, some consumers may view adopting sustainable food consumption patterns as a small contribution to environmental sustainability. They may believe that individual actions are unlikely to make a significant impact and instead concentrate on larger environmental issues, such as addressing the environmental footprint of food production or promoting sustainable farming practices.

It appears that green environmental concerns do not directly influence the decision to purchase sustainable products. In other words, despite the awareness of humanity's destructive impact on nature, addressing proper nutrition is not perceived as one of the significant factors for the future of our planet. There seems to be a sense of resignation regarding the state of the environment, with concrete actions to preserve it often seen as unattainable. Therefore, to promote sustainable consumption patterns, transparent communication is necessary to highlight how small daily actions implemented by entire communities can have a positive impact on the planet.

These findings align with previous research, which has observed a growing global concern about ecological challenges. This concern has led to companies prioritizing the protection of natural resources by emphasizing environmentally friendly production and consumption practices.

Customers are increasingly paying attention to environmental issues, prompting companies to develop specific activities aimed at achieving sustainable goals. The green environment has become a significant issue for consumers, leading to the emergence of various green products (Wang et al., 2022). However, they desire to witness tangible outcomes and comprehend how they can actively engage in the process.

This study presents research advancements by analyzing the mediating role of perceived barriers and green environmental concerns, which collectively influence the correlation

between trust in integrity and purchase intention. Consumers are more likely to embrace new products with lower environmental impact, recognizing the need for tangible actions to improve the planet's condition for both current and future generations. However, consumers require certainty regarding the composition of the products they purchase to differentiate between choices. This is supported by the finding that low confidence in product integrity negatively affects purchase intention.

Potential barriers to purchasing these items were identified, including perceived obstacles such as high prices, limited immediate availability, and the belief that certain products require more effort to prepare. The study found that perceived barriers have a negative impact on purchase intention. This suggests that consumers may be deterred from purchasing environmentally conscious food items due to factors that make it difficult to access or purchase them. Nevertheless, comparing food cost and affordability is complex. Local incomes must be considered, and affordability can vary across socioeconomic groups, even with comparable prices (Drewnowski et al., 2022).

The study also highlights the influence of green environmental concerns in promoting the purchase of sustainable products. Consumers who prioritize environmental protection and aspire to leave a positive footprint for future generations are more likely to choose these products, even in the face of perceived obstacles or skepticism regarding product integrity, and trust plays a crucial role in shaping consumers' purchasing decisions. Consumers prioritize and trust organic food over conventional options, shaping their purchasing choices and the understanding of these behaviors drives organic food production (Lee et al., 2020).

The study underscores the complex interplay between consumer attitudes, perceived barriers, and confidence in product integrity when it comes to purchasing environmentally conscious food items. The findings suggest that addressing perceived barriers and increasing awareness of the benefits of these items can help promote their purchase, even in the face of low confidence in product integrity.



## **5. Conclusions**

### **5.1 Theoretical implications**

This study contributes to the theory of robust scientific evidence supporting balanced diet advantages by Cambes-Franco et. al (2022), who highlighted that it is possible to go towards a greener and healthier future by actively responding to the growing demand for dietary patterns. The findings of this research are aligned with their study, analyzing that health is the key tool at the center of the transition to sustainable diets. It was noted how health is connected to the development of social awareness, unlocking the willingness for a greater economic effort to ensure increased food safety.

Given the existing lack of trust in the integrity of traditional products, companies should consider leveraging this to their advantage when introducing sustainable products, being aware that a lack of integrity can negatively impact sales and lead to negative word-of-mouth communication. As a matter of fact, online word-of-mouth (WOM) on social media platforms (e.g., Facebook, Twitter, Instagram) and e-commerce sites (e.g., Amazon) has become vital for consumers. Extensive research has demonstrated its impact on product preferences, purchase decisions, and business performance (Chen and Yuan, 2020).

This study makes significant advances over several theories, including the work of Beatson et al. (2020), particularly in green consumption processes that include the purchase and disposal of household products, which contributes to the discourse on the expansion of social marketing research, by shedding light on the mediating role of perceived barriers and green environmental concerns in influencing purchase intention. While the former factor potentially has a negative impact on purchase intention due to consumers' skepticism or lack of education on the topic, the latter has a positive effect and is one of the elements that guide individuals to make sustainable purchase choices. Thus, these two variables, where one can potentially influence the other, serve to highlight a contradiction and testify to the absence of essential principles that should guide consumers' purchasing decisions. Consumers should be guided by their knowledge rather than being influenced by the prevailing food trends in society.

This study additionally demonstrates progress in comparison to numerous prior research studies that have primarily examined the visual impact of sustainability. For instance, Majer et al. (2022) investigated the efficacy of labeling schemes as a promising mechanism for encouraging more sustainable consumer behavior by effectively communicating product performance across various environmental aspects. By describing the mediating influence of

green environmental concerns and perceived barriers, this study aims to expand the holistic understanding of consumer perception by including external factors impacting on society and environment.

## **5.2 Managerial implications**

This study also contributes to the theory about the importance of underlying motivations of companies to incorporate sustainability considerations into their business models by Lopes et al. (2022), with the essentiality in evaluating the effects of these strategies on production processes and economic performance at the organizational level. Companies should identify and address barriers to purchasing environmentally friendly products, develop effective strategic communication that aims at consumer education, and highlight the environmental benefits of their products to attract environmentally conscious consumers. Businesses with a reputation for high levels of integrity are more successful at implementing sustainable practices and reducing perceived barriers to purchasing eco-friendly products. Corporate reputation is an intangible asset that is challenging to replicate and plays a crucial role in gaining a competitive advantage. It helps in attracting top talent and provides leverage in managing stakeholders (Quintana-García et al., 2022). Notably, environmental management is a significant factor that strongly influences corporate reputation.

Consumers who prioritize sustainability and ethical behavior are more likely to research a company's reputation before making a purchase decision. To encourage the adoption of sustainable products, companies need to limit barriers such as price, availability, and awareness by encouraging green behaviors through concrete demonstration of the benefits the products can bring to the people's daily life. In addition, promoting the environmental benefits of products can appeal to environmentally conscious consumers who may be willing to pay more and become brand advocates for companies that share their values. Lastly, by employing compelling communication strategies, individuals who may not have a prior inclination towards environmentally friendly practices can also be engaged, arousing curiosity, and fostering interest.

Companies should emphasize the health-conscious benefits of their products or services since to design effective interventions and support food systems that align with consumer characteristics, preferences, and values, it is crucial to comprehend the underlying individual-based motivations that influence food choices (Karanja et al., 2022).

Companies should promote environmentally friendly aspects of their products or services.



This could involve using sustainable materials or packaging, detaching themselves from companies that continue to depend on plastic packaging due to its low production costs, durability, and other unique properties (Phelan et al., 2022); reducing waste, or promoting recycling, since the extensive waste generated has profound environmental, social, and economic consequences, contributing to greenhouse gas emissions, wasteful resource utilization, and economic losses for households, exacerbating the challenge of feeding a growing world population (Stancu and Lähtenmäki, 2022). By highlighting these environmentally conscious features, companies can appeal to consumers who prioritize environmental responsibility.

### **5.3 Limitations and future research**

While the variables presented in the study can be useful for companies seeking to increase purchase intention among consumers, there are limitations and opportunities for future research that should be considered.

One limitation of the study is that it may have missed other important variables that can influence purchase intention, such as brand loyalty, product quality, or social influence. Additionally, the study relied on self-reported data from participants, which may have been biased or influenced by social desirability. Food choices range from habitual to deliberate decisions influenced by past experiences, active reasoning, and diverse contexts. In addition, personal characteristics, knowledge, beliefs, attitudes, and motivations also shape these choices (Lizin et al., 2022). Finally, the study was conducted in a specific context or industry, and the results may not generalize to other industries or contexts.

To address these limitations and further explore the variables presented, there are several future research directions that can be pursued. For instance, the mediating role of perceived barriers and green environmental concerns could be further explored in different contexts to determine their extent of influence on purchase intention. Additionally, the relationship between health consciousness and purchase intention could be investigated in more detail by examining specific health-related attributes of products or services.

An additional avenue for future research is to investigate how confidence in integrity influences various aspects of consumer behavior. Furthermore, exploring the concrete effects of implementing new technologies, connectivity, digitalization, and the use of renewable energies, along the supply chain and their potential benefits in building strong customer relationships remains an important area of study. Traceability and transparency of food items

from farm to fork are increasingly vital. Consumer awareness about products is often limited. Incidents of food fraud, contamination, and illnesses raise concerns. For organizations committed to ethical practices and sustainable growth, selecting trustworthy partners is crucial (Ranjan et al., 2021).

The role of demographic variables, such as age or income, in influencing consumer attitudes and behaviors could also be examined. Cross-cultural communication aims to adapt message packaging and delivery for diverse cultural backgrounds. Understanding and respecting cultural differences between information senders and receivers is crucial for effective communication. (Aririguzoh, 2022). Therefore, cross-cultural studies could be conducted to determine the extent to which variables are relevant across different cultures and societies.

To examine how consumer attitudes and behaviors change over time and in response to different marketing strategies or interventions, longitudinal studies could be conducted to detect any changes that might occur over a period. By addressing these limitations and pursuing these future research directions, we can better understand the complex relationships between consumer attitudes and behaviors and the factors that influence them.

## 6. References

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