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Analysis of Food Purchasing Behavior and Sustainable Consumption in the North-East Region of Romania: A PLS-SEM Approach

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Abstract: Food consumption plays a fundamental role in human life, shaping not only daily nutrition but also economic and social behaviors. Household expenditures on food remain among the highest, and the time allocated to food purchasing and preparation is significant. Beyond biological necessity, food represents a cultural and social phenomenon, influencing consumer habits, market trends, and lifestyle choices. This study explores the key factors influencing purchasing decisions in the agro-food sector in the North-East Region of Romania, focusing on socio-cultural influences, product attributes, brand trust, tradition, and lifestyle. The research employs a quantitative approach, utilizing a structured questionnaire to collect data from 337 residents through a convenience sampling strategy. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4.0 to examine the interrelationships between subjective norms, product attributes, price, consumer trust, and purchasing decisions. The findings indicate that social norms, price, product attributes, brand trust, customer satisfaction, and lifestyle have a significant and positive impact on consumer purchasing decisions. By understanding the key drivers behind sustainable food choices, businesses can optimize product offerings and enhance consumer engagement, while policymakers can design initiatives that promote sustainable consumption at both regional and national levels.

Keywords: consumer behavior; food sustainability; purchase decision; PLS-SEM



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1. Introduction

Consumer purchasing behavior for agri-food products plays a significant role in the global economy, influencing production, distribution, and sustainability practices [1]. Understanding consumer choices is crucial for businesses seeking to optimize marketing strategies and policymakers aiming to promote sustainable consumption.

This study highlights its novelty by addressing critical research gaps related to sustainable food consumption in the North-East Region of Romania. The region is one of the eight development regions of Romania, located in the north-eastern part of the country, with an area of 36,850 km², which represents approximately 15.46% of the national territory. In economic terms, the region is one of the least developed in Romania and the European Union, with a GDP per capita below the national average, and an economy mainly based on agriculture, manufacturing, IT&C, and services (Figure 1).

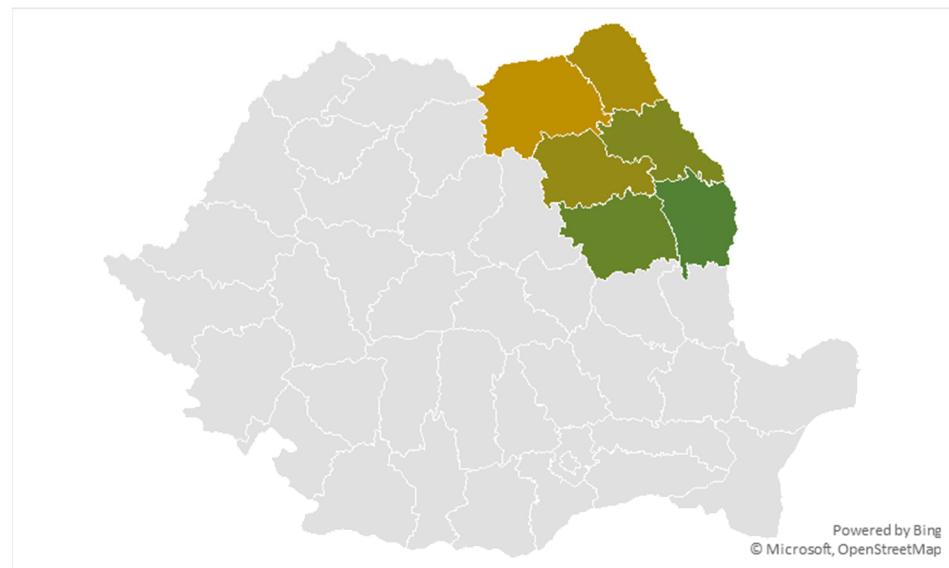


Figure 1. North-Eastern Region of Romania. Source: made by the authors.

In the region, food purchasing behavior is strongly influenced by price, tradition, and preference for local products, while sustainable consumption is still at a low level due to lack of information and economic constraints [2]. Increasing the accessibility of organic products, educating consumers, and integrating them into existing supply chains are key measures to stimulate the transition towards more responsible and sustainable consumption in the region. Thus, previous studies have explored various aspects of responsible purchasing behavior and sustainability practices, limited research has examined the determinants influencing consumer decisions in the agri-food sector.

Past studies have employed Structural Equation Modeling with Partial Least Squares (SEM-PLS) to analyze the complex relationships influencing sustainable purchase intention [3]. This approach provides a comprehensive perspective on how perceived product attributes, socio-cultural influences, and promotional factors interact in consumer decision-making.

The agri-food sector plays a crucial role in shaping market dynamics and influencing environmental sustainability. In the North-East Region of Romania, where agriculture remains a key economic sector, consumer choices impact both local food production and sustainable consumption patterns. Competition between local and imported food products in Romania is influenced by a combination of economic factors, consumer perceptions, and government policies [4]; although local products are perceived as fresher and more authentic, price remains a decisive factor, making imported products more competitive. Growing demand for organic and sustainable products is in line with European initiatives such as the Green Pact, but uptake is slowed by high prices and lack of information [5]. The Romanian agri-food market is characterized by a combination of small traditional farms and large-scale imports; although Romania has a strong agricultural sector, it remains a net importer of food products, especially processed food, dairy, and meat [6]. Local farmers face challenges such as land fragmentation, limited access to technology, and difficulties in integrating into large retail chains, which reduces their competitiveness with international suppliers. Although many consumers say they prefer local products, price remains a decisive factor and imported products often benefit from lower costs, making them more accessible to lower-income segments of the population [7].

Since modifying consumer behavior is one of the most effective strategies for enhancing sustainability, it is essential to encourage responsible purchasing practices and dietary shifts toward more sustainable food consumption. This aligns with global sustain-

ability goals, particularly the United Nations' 2030 Agenda for Sustainable Development (SDG 12) [8] (Transforming our world: The 2030 Agenda for Sustainable Development), which prioritizes responsible production and consumption to mitigate climate change and promote resilient food systems [9].

Despite growing sustainability awareness, consumer preferences in the agri-food sector are influenced by economic, social, and cultural factors. In Romania, local food products compete with imported alternatives, and purchasing decisions are often shaped by price, accessibility, cultural traditions, brand perception, and product attributes. Previous studies have predominantly relied on Ajzen's Theory of Planned Behavior (TPB) to explain consumer decision-making. TPB is widely used because it provides a structured framework for analyzing consumer intentions and behavior, integrating attitudes, subjective norms, and perceived behavioral control (PBC). It helps researchers to identify the determinants of consumer decisions in different contexts, including alternative consumption, environmental sustainability, and ethical shopping. The study [10] highlights mediator and moderator variables that have been added in TPB-based models, such as environmental concern, ethical ideology and personal norms. Furthermore, TPB plays an important role in determining the extent to which consumers feel able to adopt certain behaviors, such as purchasing sustainable products or reducing food waste. However, advanced modeling techniques such as PLS-SEM provide a comprehensive framework for analyzing the interconnections between these factors [11].

This research aims to fill the existing knowledge gap by simultaneously analyzing purchase intention and actual purchase behavior, with a focus on sustainable consumption and preference for local food. Using PLS-SEM analysis, we examine how social norms, economic factors, product attributes, ethnocentrism, and digital influences shape not only the intentions but also the actual behavior of consumers in the North-East Region of Romania. Consumer ethnocentrism is the tendency of consumers to prefer local over imported products, based on the belief that the purchase of local products supports the national economy and reflects cultural identity [12], while digital influences include consumers' exposure to online advertisements, reviews, social media promotion, and digital marketing campaigns [13], and the degree to which consumers perceive agri-food products as safe, authentic, and compliant with quality standards denotes consumer trust. Understanding these influences will help both policy-makers and marketers to develop more effective marketing strategies and sustainability initiatives better tailored to local consumer preferences.

2. Literature Review

2.1. Perception of Sustainable Behavior

Food consumption plays a vital role in daily life, influencing not only nutrition but also individuals' economic and social behaviors. The significant proportion of household expenditures allocated to food and the time invested in purchasing and preparing meals highlight the importance of this aspect of everyday life. Beyond biological necessity, food represents a cultural and social phenomenon, shaping lifestyles, consumption habits, and market trends [14]. Global factors such as climate change, geopolitical conflicts, and governmental policies have turned sustainable consumption into a global priority, significantly impacting consumer behavior in agri-food product purchases. This analysis investigates sustainable purchasing behavior, theoretical models regarding environmental awareness, and key gaps in the literature related to the factors influencing consumer choices in the agri-food sector [15].

Recent studies have highlighted several factors influencing consumer behavior in the agri-food sector, including socio-cultural influences, product attributes, brand trust, traditions, and lifestyle [16]. A systematic analysis of consumer behavior has emphasized

the importance of personal values, knowledge, and perceptions of price and quality in purchasing decisions for organic products [17]. Another study investigated consumer behavior based on the place of food purchase, with a particular focus on local products [18]. The results showed that demographic factors such as gender, age, and place of residence influence consumer preferences for local products [19]. Moreover, research has demonstrated that sustainable marketing can influence consumer brand loyalty. A study focusing on the food industry highlighted that sustainable marketing practices can have a positive impact on consumer loyalty, particularly in the case of bakery products [20]. Additionally, consumer behavior plays a crucial role in the transition toward circular food systems [21]. A literature review on circular food behaviors has highlighted the need for a deeper understanding of these behaviors, which is essential for facilitating the transition to a more sustainable food system [19].

In the context of the COVID-19 pandemic, consumer behavior regarding food procurement underwent significant changes. The literature has emphasized the disruptive impact of the pandemic on agri-food systems and consumer behaviors, highlighting the need for further studies in this field [22]. The study [23] analyzes the factors influencing the purchase decision of organic products among Romanian consumers. The research explores how variables such as personal factors, environmental factors, product characteristics, and reference group influence affect consumers' sustainable purchasing behavior. Through this study, the authors attempt to provide empirical information about emerging green markets and to identify the barriers and motives of Romanian consumers in adopting green products.

2.2. Factors Affecting Consumers' Sustainable Behavior

Research on consumer behavior, conducted from the perspective of various scientific disciplines, explores multiple aspects, ranging from decision-making processes and consumer perception to the impact of different factors on purchasing decisions and their reactions to specific products [24].

In recent years, the concept of sustainable consumption has gained increasing importance, emphasizing planning, specialized knowledge, ecology, ethics, and local awareness. The decision to purchase agri-food products in Romania is influenced by a combination of economic, political, and social factors.

This paper explores the impact of social and cultural factors on nutrition, demographic factors, motivations, distribution channels, consumption trends, marketing influences, and economic conditions that shape consumer food purchasing behavior [9].

1. The impact of social and cultural factors on nutrition

The constant changes in the surrounding environment significantly influence shifts in consumer attitudes and behavior, both in the marketplace and in other social spheres. Consumers shape their behaviors under the influence of a wide variety of factors. Some demonstrate loyalty to a particular brand; others choose products that reflect their personal beliefs, while others are willing to pay a premium (Table 1).

Table 1. Social and cultural factors influencing purchasing decisions.

Factors	Description
Individual Preferences	The unique tastes and preferences of each person, influenced by past experiences, culture, social environment, and education.
Accessibility	Availability and access to fresh and high-quality food, as well as transportation and distribution infrastructure.

Table 1. *Cont.*

Factors	Description
Economic Factors	Disposable income and food prices. Individuals with higher incomes may have more dietary choices.
Social and Cultural Factors	Food traditions, social norms, and the influence of peer groups. Consumers are affected by the eating habits and practices of their communities.

Sources: the authors' contribution based on [23] Kotler, Philip, and Gary Armstrong. Principles of Marketing. 17th Edition, Pearson, 2023 [25].

Consumer preferences tied to income levels represent a critical topic in marketing and management. Income influences consumer choices regarding agro-food products in several ways:

1. Macro influences on consumer behavior:

Macro-economic and socio-political factors have a significant impact on consumer behavior through mechanisms that shape the accessibility of agri-food products and consumption preferences. Thus economic factors directly influence purchasing power and consumption decisions, including personal income which determines purchasing power and consumption priorities, prices of products and services that affect affordability and perceived value, consumer spending and saving tendencies that influence purchasing habits, gross domestic product (GDP) which indicates general economic prosperity, and inflation rates that affect value for money and perceptions of agri-food products.

Demographic factors such as age, education, and social class play a key role in shaping consumer behavior, determining market segmentation and personalized marketing strategies, while geographical characteristics such as climate, natural resources, and product origin influence consumption preferences and have a major impact on consumer choices.

Situational influences, such as seasonal events, shopping environments, or unforeseen circumstances, significantly affect consumer decisions. For example, during the COVID-19 pandemic, preferences shifted towards local markets and direct door-to-door deliveries, emphasizing reliance on local products [26].

2. Micro influences on consumer behavior:

Micro-economic factors are determined by individual and social aspects that influence preferences and purchase behaviors; thus, income level influences agri-food consumption behavior through price sensitivity, as lower-income consumers are more price-conscious and prefer affordable products while higher-income consumers are willing to pay more for premium products [27] and food preferences, and high-income people often prefer organic or gourmet products, perceived as healthier, while lower-income people choose economical alternatives [28].

High-income individuals consume more often at fine dining restaurants, while low-income individuals prefer fast food or more affordable products [29], and they are more likely to choose premium brands having better access to nutrition and health information, which influences their consumption decisions [30], while lower-income individuals opt for more affordable alternatives [17].

The marketing mix (price, product, place, and promotion) influences consumers' perception of the value and quality of products, determining purchase choices [31], and psychological and sociological factors play a key role in shaping consumer preferences through lifestyle determining dietary choices and eating habits, cultural norms and values influencing food perception, consumption preferences, and social habits [32], and in Romania, economic disparities and high poverty rates significantly affecting the structure of food consumption [33].

Table 2 presents a comparison of the key characteristics of local and imported products.

Table 2. Comparison of the main characteristics of local and imported products.

No.	Characteristics	Local Products	Imported Products
1	Type of Producer	Small and medium-sized businesses, locally oriented	Multinational corporations, profit-driven
2	Production Method	Traditional, based on local craftsmanship	Advanced technology and intensive agriculture
3	Available Quantity	Limited, based on local capacity	Variable, influenced by demand
4	Origin	Local or regional	Other countries or continents
5	Point of Sale	Close to the production site	Distributed within the importing country
6	Processing Level	Minimal, with no significant modifications	High, using modern technologies
7	Type of Packaging	Minimalist, natural, or non-existent	Various packaging materials: plastic, metal, glass, or paper
8	Portion Sizes	Large packages (e.g., sacks)	Small, consumer-friendly packages
9	Preservation Methods	Drying, salting, smoking	Freezing, preservation, additional drying
10	Use of Additives	Almost nonexistent	Common, to enhance shelf life and taste
11	Market Availability	Limited, mainly in rural areas	Unlimited, widely available in large cities
12	Price	Relatively low, affordable	Higher, reflecting transport and processing costs
13	Price Stability	Fluctuating, affected by seasonality	Stable, but influenced by global trends
14	Product Information	Communicated verbally by sellers	Detailed labels, standardized internationally
15	Supply Reliability	Discontinuous, depending on resources	Continuous, with stable supply chains
16	Storage Capacity	Limited, lacking infrastructure	Refrigerated containers available
17	Quality Control	Minimal or nonexistent	Conducted according to international standards
18	Quality Complaints	No official procedures	Legal claims possible through consumer protection laws
19	Branding	Rarely used	Frequently used for differentiation

Sources: authors' contribution.

Factors like accessibility, prices, and product availability shape consumer preferences, creating competition between local and imported products. Imported goods offer variety and consistency but raise concerns about traceability, quality, and sustainability. Consumer behavior is thus influenced by economic, social, and cultural factors, driving choices based on personal preferences, awareness, and economic context [18]. Imported products, on the other hand, offer a wider variety and consistent market availability but may raise concerns regarding traceability, quality, and sustainability. In this context, consumer behavior is influenced by economic, social, and cultural factors, shaping the choice between local and imported products based on personal preferences, level of awareness, and economic conditions.

2.3. Incorporating the Theory of Planned Behavior (TPB) and the Value-Belief-Norm (VBN) into the Analysis of Sustainable Purchasing Decisions

TPB is a model widely used to explain the determination of consumer intention and behavior and states that purchase intention is influenced by three main factors: attitude to behavior, subjective norms, and perceived behavioral control (PBC) [34]. In the study [35], attitude and perceived behavioral control were the strongest predictors of natural product purchase intention, while subjective norms had insignificant impact, suggesting that consumers' decision is more influenced by their personal perception of eco products than by social pressure. Another study [36] integrates the Theory of Planned Behavior (TPB) and the Norm Activation Model (NAM) to analyze the determinants of purchase intention of eco-friendly products, highlighting that attitude, social norms, and personal norms are key factors in the adoption of sustainable consumption behavior. Thus, the results of the study indicate that social norms influence both purchase intention and the internalization of moral norms, suggesting that strategies to promote green products should combine cognitive and moral factors to stimulate the adoption of responsible consumption. Ajzen [37] demonstrates that the Theory of Planned Behavior (TPB) provides a robust conceptual framework for explaining the intention and actual purchase behavior of organic food products, highlighting that product attitudes and perceived behavioral control are the most important predictors of sustainable consumption adoption. The results of the study suggest that strategies to promote organic food should aim to increase product affordability and to consolidate perceptions of product benefits, given that social norms exert limited influence on individual purchasing decisions. Theodorou et al. [38] apply the Theory of Planned Behavior (TPB) to analyze the impact of the COVID-19 pandemic on online shopping, finding that fear of shopping in physical stores was the main determinant of online purchase intention during the pandemic period, while positive attitudes towards online shopping and perceived control remained significant post-pandemic factors. The results suggest that although social norms influenced the temporary adoption of online shopping, the maintenance of this behavior in the long term depends mainly on the perceived convenience and accessibility of e-commerce platforms.

The VBN theory explains pro-environmental behavior through a causal chain that starts from personal values and leads to the activation of moral norms. According to VBN, the intention to buy sustainable products is influenced by pro-environmental beliefs, awareness of consequences, attribution of responsibility, and personal norms [39]. Thus, in the study [40], the factors influencing pro-environmental behaviors are analyzed using Value-Belief-Norm Theory (VBN) and an extension of it, including social norms, demonstrating that both moral obligations and social pressure influence sustainable consumption behavior. Compared to the Theory of Planned Behavior (TPB), results indicate that personal norms and social norms are stronger predictors of purchase intention for green products, suggesting that strategies to promote responsible consumption should combine both cognitive factors and social influences to maximize impact.

2.4. PLS-SEM in Analyzing Sustainable Purchasing Decisions

PLS-SEM is a statistical method used for the analysis of the relationships between latent variables, being particularly preferred in exploratory contexts and in studies with small samples or non-normal data as a variance-based method, optimizing the predictive power of the model. PLS-SEM works by simultaneously estimating the relationships between latent variables (theoretical constructs) and their indicators, using iterative regression techniques to maximize the variance explanation of the dependent variables. A major advantage of the method is the ability to analyze complex models with multiple causal relationships and its flexibility in integrating data with non-normal distributions. According

to recent literature, PLS-SEM is widely used in fields such as marketing, social sciences, economics, and purchasing decisions; one study [41] provides a broad review on the use of Latent Growth Curve Modeling (LGCM) and Partial Least Squares Structural Equation Modeling (PLS-SEM) in panel survey-based research. The authors identify the trends in publication and existing methodological gaps, highlighting that PLS-SEM remains underutilized in the analysis of longitudinal data, although it offers advantages in dealing with small sample sizes and non-normal data. The results of the study reveal that PLS-SEM is more commonly used in cross-sectional studies, and its limitations in analyzing panel surveys stem from the difficulty of capturing the dynamics of individual changes and establishing a single structural model that represents the entire process of evolution of repeated data. The study proposes five distinct PLS-SEM approaches for analyzing longitudinal data but emphasizes that none of them can fully capture individual trajectories and the factors influencing changes over time.

Islam and Khan [3] provide a robust approach for hypothesizing and analyzing mediation and moderation effects in consumer behavior towards sustainable products using PLS-SEM. In this study, PLS-SEM was applied to analyze the purchase intention of sustainable products using a sample of 744 respondents. The results of the study confirm that personal attitudes, social norms, and perceived behavioral control are key determinants of the green purchasing decision, highlighting the essential role of perceptions of the value and environmental impact of products. Laganà et al. [42] provide a recent perspective on the use of PLS-SEM in analyzing purchase decisions. This model has been applied to assess consumers' intentions to purchase truffle products, extending the Theory of Planned Behavior (TPB) by integrating gastronomic curiosity as a supplemental factor influencing consumption behavior. Thus, the results of the study demonstrate that product perception, trust in the seller/brand, food safety, and traceability information are essential factors in the formation of purchase intention. PLS-SEM proved effective in testing the relationships between the latent variables, providing a detailed analysis of the interdependencies between attitude, subjective norms, and perceived behavioral control.

Abu-Bakar and Almutairi [43] apply PLS-SEM to analyze the relationship between brand personality, consumer–brand congruence, and sustainable consumption behaviors. Anchored in Consumer Culture Theory (CCT) and Self-Congruence Theory, the research explores how brand loyalty and perceptions of corporate social responsibility influence consumers' purchase decisions. The study results show that brand identity plays a key role in promoting green consumption and that demographic influences such as age and income significantly affect the purchase intention of sustainable products. PLS-SEM was used to test the causal relationships between latent variables, providing a clear insight into the impact of brand personality on sustainable purchasing behavior. Méndez-Suárez [44] analyze the use of PLS-SEM to measure the impact of marketing variables on consumer decisions, demonstrating the advantages of this method over traditional econometric models. An important aspect highlighted in this study is the limitation of the classical bootstrapping technique applied to PLS-SEM, which can introduce significant errors in the analysis of longitudinal and time series data, such as those used in the evaluation of sustainable purchasing decisions. In this context, the author proposes the use of Maximum Entropy Bootstrapping (meboot), a technique that preserves the autocorrelated structure of the data and provides a more reliable estimate of the model coefficients.

Zayed et al. [45] use PLS-SEM to analyze the factors influencing purchase intention of organic food products. The research conducted by the authors is based on the Theory of Planned Behavior (TPB) and explores the impact of e-WOM (electronic Word-of-Mouth), ecological concerns, subjective norms, and health consciousness on consumer behavior. The results of the study indicate that consumer attitudes and environmental concerns

have a significant impact on purchase intention, but subjective norms and perceived behavioral control do not significantly influence the purchase decision. Also, e-WOM plays an important role in shaping consumer perceptions, influencing consumer attitudes, but has no direct effect on purchase intention. Sampa et al. [46] provide a recent perspective on the use of PLS-SEM in analyzing consumer behavior regarding organic products. This study applies the Rational Action Theory and Hirose's Two-Phase Decision Model to investigate the factors that influence the actual purchase of organic products based on environmental consciousness. Using PLS-SEM, the study identifies three key factors that determine actual purchase: social norms, prior experience, and willingness to pay (WTP). The results of the study indicate that the perception of environmental impact is not sufficient to influence actual purchase behavior, highlighting the importance of reducing the perception of inaccessibility and inconvenience of organic products.

3. Hypotheses Development

This study is quantitative in nature, and to achieve the proposed objectives, data collection is conducted through surveys. For exploratory data processing, structural equation modeling (SEM) is used, employing iterative algorithms based on the partial least squares method (PLS-SEM) [47].

The quantitative data collection was carried out using a questionnaire as a research instrument (available in Appendix A-Questionnaire Structure) containing 31 specific items. The survey was conducted in the North-East region between March and April 2022 via Google Forms.

A total of 337 respondents participated in this survey. Figure 2 illustrates the relationship between perceived attributes of agri-food products and the decision to consume these products.

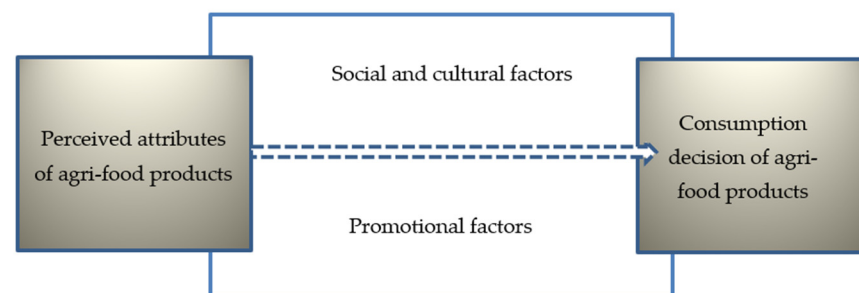


Figure 2. Factors influencing the consumption decision. Source: made by the authors.

The issue of decision-making in purchasing healthy products, addressed in this study, is connected to two fundamental concepts from interdisciplinary and interconnected fields: (a) purchasing decision and (b) healthy products. The first concept, the purchasing decision, belongs to the broad and complex field of marketing and differs from the concept of consumption decision, despite the fact that the two are often treated as a unified notion.

In this study, we will primarily refer to the consumption decision, under the assumption that individuals who decide to purchase certain products are the same individuals who have previously made the purchasing decision.

The second concept, that of healthy agri-food products, is widely debated in contemporary academic literature as well as in most practical approaches, particularly when referring to products that meet the fundamental need for food, such as foodstuffs and agri-food products.

This research aims to explore the nature and direction of the relationship between the decision to purchase healthy products and the attributes of the products that consumers

intend to buy and consume. The focus will be on both internal and external factors, on the one hand, and promotional factors—encompassing all aspects related to the promotion and sale of healthy agri-food products—on the other.

Given the exploratory research context, in which we analyze different structural concepts (latent variables) to evaluate subjects' opinions regarding multiple observed variables, data processing was conducted using iterative algorithms based on the Partial Least Squares (PLS) method for structural equation modeling, implemented through Smart-PLS software [48].

The decision to consume healthy agri-food products is closely linked to socio-cultural and promotional factors, which are in turn influenced by product characteristics. No matter how effective promotional and distribution strategies may be, success ultimately depends on the authenticity and actual quality of the product. Thus, a healthy product asserts itself through price, quality, packaging, and presentation, while cultural and promotional influences enhance its visibility and perceived value. Ultimately, consumers make their purchasing decisions based on price accessibility, ingredient compatibility with their needs, packaging safety, and social and advertising influences. Within this context, the analysis will focus on consumption decision-making, emphasizing the concept of healthy food.

The research is built on four fundamental pillars analyzing the consumption decision of agri-food products (Figure 3), starting from the general consumer behavior of subjects in the North-East region. This approach investigates the influence of socio-cultural factors and the impact of marketing strategies, particularly promotional strategies, on consumer choices.

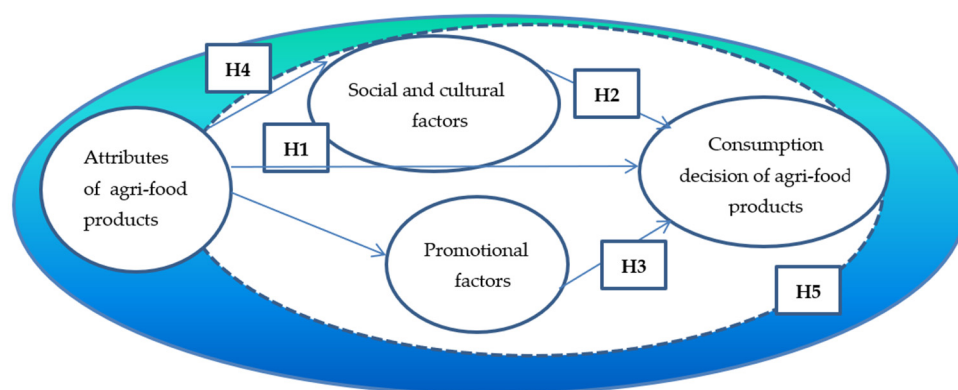


Figure 3. Research hypotheses framework—the conceptual model proposed for this study. Source: own interpretation based on the survey.

The independent variable in the model represents the perceived attributes of agri-food products, which define how individuals assess product characteristics during the purchasing decision process. These attributes are the primary determinant of choosing healthy products, significantly influencing consumer preferences and behaviors [49].

Figure 3 illustrates the factors influencing the consumption decision of agri-food products.

H1: *Perceived attributes of agri-food products directly influence the consumption decision of agri-food products.*

The attributes associated with agri-food products play a significant role in determining consumer choices in favor of healthy products in this category. Understanding and perceiving attributes such as quality, origin, production methods, and nutritional content directly influence purchasing decisions, guiding consumers toward healthier choices in their daily diet. Therefore, increasing awareness and effectively communicating these attributes can contribute to promoting a more balanced and healthy diet among consumers.

The attributes of agri-food products, such as quality, provenance, production methods, and nutritional content, play a determinant role in consumer choices, influencing their preference for healthier and sustainable products. According to the study [50], highly educated consumers are more likely to choose certified products and to recognize their distinctive marks, indicating a direct relationship between attribute perception and purchasing behavior. Furthermore, statistical analysis revealed that cognitive factors, such as awareness of the advantages of local and organic products, significantly influence purchase intention. Also, the implementation of quality schemes and information campaigns can increase consumer confidence and contribute to a more frequent choice of healthy agri-food products. A study [5] confirms that the perception of attributes of agri-food products such as quality, origin, and health benefits directly influence the purchasing decision, with consumers preferring organic products due to perceived safety and nutritional value advantages. The level of awareness and accessibility of information about these products also play a key role, as lack of consumer education and insufficient promotion limit the uptake of sustainable agri-food products. These findings suggest that marketing strategies should focus on building consumer confidence by providing clear information and highlighting the benefits of healthy agri-food products so that positive perceptions of them are translated into actual purchasing behavior.

H2: *Social and cultural factors directly influence the consumption decision of agri-food products.*

The decision to consume agri-food products (H2) is directly influenced by social and cultural factors. These factors include social norms, cultural habits, reference group influences, and the socio-economic context in which individuals live. For example, in some cultures, healthy eating may be associated with traditions and cultural values, leading consumers to choose products that align with these standards. Additionally, social influences, such as peer pressure or behavioral models from family and friends, can shape consumption choices toward either healthy or unhealthy agri-food products. Understanding and addressing these factors can be key to promoting healthier eating habits in various communities. Thus, one study [51] demonstrates that social and cultural factors, including social norms, food traditions, and peer group influences, play a determinant role in food consumption decisions, shaping perceptions of quality and preferences for certain products. The results show that local traditions, social pressure, and socio-economic status influence food choices, suggesting that strategies to promote sustainable consumption need to be adapted to the cultural and social context of each community.

H3: *Perceived promotional factors directly influence the consumption decision of agri-food products.*

The consumption decision for healthy agri-food products is also directly influenced by the promotional factors perceived by consumers (H3). These factors include branding, packaging, promotion, and product distribution. For example, attractive and informative packaging can create a positive perception of a product's quality and benefits, thus influencing purchasing decisions in its favor. Similarly, promotional strategies such as advertising and marketing through social media can shape consumer opinions and preferences regarding healthy agri-food products. Therefore, effectively managing these promotional factors can contribute to stimulating demand for healthier food products and encouraging more balanced dietary choices among consumers. One study [52] highlights that social and cultural factors, including social norms, peer group influences, and environmental concerns, exert a significant impact on food purchase intention, although the effect of social norms may be indirect, by changing consumer attitudes. The results indicate that perception of the benefits of organic products is influenced by e-WOM (electronic Word of Mouth), and

environmental concern acts as a decisive factor in the adoption of sustainable consumption. These findings suggest that strategies to promote organic food should capitalize on social influence through digital marketing and create a culture of responsible consumption, given that food choices are strongly shaped by socio-cultural context.

H4: *The indirect influence of consumers' general purchasing behavior, mediated by social and cultural factors as well as perceived promotional factors, is greater than the direct influence on the consumption decision of agri-food products.*

The indirect influence of consumers' general purchasing behavior (H4), through social and cultural factors as well as perceived promotional factors, has a more significant impact on the consumption decision for healthy agri-food products than the direct influence of these factors. This means that an individual's interaction with their social and cultural environment, as well as with product marketing strategies, may have a greater influence on their choices than direct product information or characteristics. For example, social and cultural norms that promote specific dietary habits or aggressive marketing influences may lead consumers to select products that are not always the healthiest from a nutritional standpoint. Understanding these complex dynamics is essential for promoting healthier eating habits. Thus, Gurbuz and Macabangin [53] demonstrate that social and cultural factors play a key role in the purchasing decision of agri-food products, influencing consumers' perceptions and preferences according to traditional norms, eating habits, and reference group influences.

These factors interact and influence food choices. The final consumption decision is the result of the combination of these elements.

4. Research Hypotheses

Among the 31 specific items included in the questionnaire conducted in the North-East region between March and April 2022 via Google Forms, the essential factors in the decision-making process for purchasing agri-food products were selected for analysis. These factors, labeled as Q12, Q11, and Q28, were not arranged sequentially (Q1, Q2, Q3, etc.) but were extracted based on their relevance within the research model.

The perceived attributes of agri-food products constitute the independent variable of the model and are evaluated through items Q12a–Q12j in the questionnaire. These items reflect the key criteria influencing consumers' purchasing decisions, including quality, taste, price, safety, convenience, nutrition, tradition, origin, appearance, and gastronomic experience. This variable plays a fundamental role in shaping consumer preferences and determining final choices based on individual perceptions, economic factors, and socio-cultural influences (Table 3).

Table 3. Matching questionnaire questions to model constructs.

Nr. crt	Construct	Questionnaire Items	Description
1	Perceived attributes of agri-food products (independent variable)	Q12a–Q12j	Evaluation of key criteria such as quality, taste, price, safety, safety, convenience, nutrition, tradition, origin, appearance, and gastronomic experience;
2	Social and cultural factors (mediator variable)	Q11a–Q11f	Influence of culture, tradition, social group, education, family, and lifestyle on purchasing decisions;

Table 3. Cont.

Nr. crt	Construct	Questionnaire Items	Description
3	Promotional factors (mediator variable)	Q28a–Q28g	Impact of advertising, price, previous experience, perception, safety, quality, and brand on consumer behavior;
4	Consumption decision for healthy products (dependent variable)	Q31	Intention to purchase natural and healthy products from local producers.

Sources: authors' contribution.

- Social and cultural factors: This is a mediating variable in the model and is measured using items q11a–q11f from the questionnaire.
- Promotional factors: This is another mediating variable in the model and is measured using items q28a–q28g from the questionnaire.

For example, in some rural communities, the consumption of local and traditional products may be more common and valued, while in urban areas, access to a greater variety of products and diverse cultural influences may lead to different food choices. Understanding these differences and the diversity of contexts can be crucial in developing effective strategies for promoting healthy eating across various consumer groups.

Descriptive Analysis

As previously suggested, to analyze consumer behavior in the purchasing process of agri-food products, specific determining factors were selected from a broad set of variables. This explains their numbering format as Q12, Q11, and Q28, without following a conventional sequential order (Q1, Q2, Q3, etc.). These factors were extracted from the survey questions and reflect essential aspects influencing consumers' purchasing decisions.

Thus, Q12 explores the specific criteria underlying the selection of agri-food products, including elements such as quality, taste, price, safety, nutrition, and product origin. At the same time, Q11 highlights the role of sociocultural factors, such as culture, tradition, social environment, and education, in shaping purchasing decisions.

Finally, Q28 addresses product promotion factors, emphasizing the impact of advertising, price, previous experience, and perception on consumer choices. By incorporating these variables, the study provides an integrated perspective on how economic, sociocultural, and marketing factors contribute to the final decision to purchase agri-food products.

In the survey, Question Q12 asked respondents the following:

“When choosing to buy a product from the following categories (fruits, vegetables, meat and meat products, dairy products, bread, and bakery products), what factors influence your decision?”

Respondents could select from the following criteria: quality (q12a)—measures how often consumers prioritize the quality of agri-food products; taste (q12b)—assesses the role of taste preferences in the purchasing decision; price (q12c)—analyzes the importance of price as a decision-making factor; safety (q12d)—assurance that the product is safe; convenience (q12e)—ease of preparation or consumption; nutrition (q12f)—content of fats, proteins, vitamins, etc.; tradition (q12g)—socio-religious customs (e.g., holidays); product origin (q12h); appearance (q12i); gastronomic experience (q12j).

The key factors shaping consumer behavior and consumption decisions include individual needs, preferences, traditions, social influences, education, and market dynamics. Given their diversity and volatility, these factors introduce uncertainty in consumption analysis. In Romania, distrust in industrialized agri-food products leads some individ-

uals and families to self-sufficiency, supported by cultural traditions. However, from a macroeconomic perspective, this is not a sustainable solution. Large-scale producers strive to assure consumers that their products offer the same health benefits, aiming to build trust and encourage market participation.

I. Socio-cultural factors (Mediating variable)

Socio-cultural factors play a key role in shaping consumers' attitudes towards agri-food products, determining how they prioritize criteria such as food quality, provenance and sustainability.

Question Q11 in the survey asked the following:

“To what extent do culture, social environment, and education influence your decision to buy agro-food products?”

Respondents could choose from the following influencing factors: local culture and tradition (q11a)—measures the influence of local customs on food choice; social group (q11b)—analyzes how friends, peers, or community influence purchasing decisions; professional community (q11c)—examines the role of the professional environment in food preferences; education (q11d)—captures the influence of education on food choices; family (q11e)—assesses the impact of family eating habits on purchasing decisions; lifestyle (q11f)—examines the extent to which daily routines and personal habits influence food choice.

Cultural patterns play a key role in determining the types of agri-food products consumed and how they are perceived. In regions with a strong local gastronomic tradition, consumers may prefer local products and traditional recipes, thus limiting their openness to innovative alternatives or sustainable products. Previous studies [54,55] have shown that cultural norms directly influence attitudes towards healthy food, determining the acceptability of organic or functional products. Food choices are shaped by the norms and behaviors adopted in social circles. For example, consumers who are part of health- and nutrition-conscious communities are more likely to adopt a balanced lifestyle, opting for healthier products [56], and according to social influence theory, individuals are influenced by the expectations and behaviors of reference groups, which can lead to changes in food preferences [57].

Belonging to a professional background can influence food preferences by promoting specific consumption habits, e.g., people working in areas that promote health and well-being are more likely to choose products that are organic or have an optimal nutritional profile [58]. Education plays a critical role in consumers' ability to understand nutrition information and adopt informed purchasing behaviors. According to studies on consumer behavior [59], a higher level of education is correlated with a higher likelihood of choosing healthy and sustainable products. Eating habits are often passed down intergenerationally and preferences formed in childhood influence adult purchasing decisions. Studies in the field of behavioral nutrition show that early exposure to certain types of food determines long term consumption habits [60]. Consumers with an active and health-conscious lifestyle are more likely to choose natural, additive-free, or eco-labelled agri-food products [61], whereas people with a fast-paced lifestyle may be more attracted to conventional or semi-prepared products due to their increased convenience.

II. Promotional factors (Mediating variable)

In addition to socio-cultural influences, marketing and promotion strategies play a key role in shaping consumers' perception of agri-food products and are a key determinant in consumers' purchasing decisions.

Question Q28 in the survey asked the following:

“Do you believe that product promotion influences your purchasing decision? Consider the impact of various promotional tactics, such as advertising, public relations, and other communication strategies, in shaping your perception of the product and your final purchase decision”.

The response options included the following: advertising (q28a)—measures the effect of media campaigns on product perception; price (q28b)—analyzes the role of promotions and pricing strategy in influencing the consumer; experience (q28c)—assesses the impact of previous experiences on product loyalty; perception (q28d)—analyzes how consumers form opinions about products based on branding and communication; safety (q28e)—investigates whether product safety messages influence the purchase decision; quality (q28f)—measures the extent to which perceived quality influences purchase; brand (q28g)—analyzes the importance of brand awareness in the selection of agri-food products.

Strategic communication influences consumers’ perceptions through the messages conveyed about product benefits, origin, and characteristics, and according to message framing theory [62], the wording of product information influences product acceptance. Price discounts and strategies are key determinants in the choice of agri-food products, especially for low- and middle-income consumers. Consumer behavior studies [63] underline that price is one of the strongest influencing factors in the purchasing decision, especially in the context of commodities. Thus, consumers who have had positive interactions with a particular brand or product are more likely to repeat purchase, and experiential learning theory [64] suggests that direct experiences with an agri-food product can influence perceptions of its quality and safety.

The overall image of a product is influenced by branding, packaging, and mental associations, e.g., products labeled ‘eco’ or ‘organic’ are perceived as healthier, even in the absence of significant differences in composition, and safety is increasingly important in consumer decisions, especially in the wake of food crises and increased interest in product traceability.

The Influence Mix on Purchasing Decisions and Its Impact on Marketing Strategies

The influence mix on purchasing decisions is a tool that helps marketers understand the impact of social networks on customers, enabling them to develop a successful marketing strategy. There are three main factors that influence customer decisions:

1. Previous Preferences: These purchases typically involve low risk due to habit and prior experience with a product. This factor is particularly significant in routine purchases, such as buying food or household care products.
2. Information from marketers: This purchasing decision factor generally applies to durable goods and can be easily controlled through marketing campaigns. It is also used to persuade customers to switch from familiar brands and try something new.
3. Contributions from other people: This third factor is facilitated by the transmission of information through social media and the general influence of the online environment. Potential consumers seek online reviews when making significant purchases, such as mobile phones or household appliances. They want to ensure that the products they buy offer high reliability, quality, and functionality, and they invest time in gathering this information.

Thus, culture, social environment, and education significantly impact purchasing decisions, and marketers must consider these factors to develop effective marketing strategies.

III. The consumption decision for healthy products (Dependent variable)

The consumption decision for healthy products represents the predominant attitude of individuals in the decision-making process aimed at adopting a healthy eating behavior.

Q31. The survey question was the following: Do you intend to purchase more natural and healthy agri-food products from specialized local producers in the future?

1. I will continue to buy as many natural products as possible from local producers.
2. I am willing to try new healthy products.
3. I intend to increase the share of natural products in my personal consumption.
4. Allocating a larger budget for healthier products is a wise decision.

5. Materials and Methods

The study is based on data collected from the European Statistical Institute (Eurostat) [65], the National Institute of Statistics [66], and reports published on indicators related to agricultural sustainability, food security, and environmental sustainability [67] over a three year period (2019–2024).

5.1. Analysis Methods Used

The methodological and scientific foundation of this study relied on a comprehensive range of direct and indirect documentation methods, including observation, qualitative, quantitative, and historical analysis, synthesis, comparison, systemic and monographic approaches, and statistical analysis. This multifaceted approach facilitated an in-depth examination and representation of the economic phenomena and processes studied. Its significance lies in exploring both intrinsic and extrinsic motivational factors influencing consumers.

A quantitative consumer survey was conducted using a hybrid data collection method, with a sample size of 337 respondents aged between 18 and 65 years. The questionnaire addressed product characteristics, individual requirements or preferences, intrinsic and extrinsic motivational factors, and demographic attributes.

The survey was conducted using a carefully designed questionnaire administered via the Google Forms platform and distributed through social media channels, including Facebook (<https://play.google.com/store/apps/details?id=com.facebook.katana&hl=en>, accessed on 15 February 2025) and WhatsApp (<https://www.whatsapp.com/download>, accessed on 15 February 2025). Distributing the survey via Google Forms on social networks offered the advantage of quick data collection but may introduce sampling bias, limiting access to certain segments of the population, such as the elderly or rural consumers. To minimize these limitations, several strategies were employed, including promoting the questionnaire to diverse groups, encouraging redistribution of the survey to diverse groups, and offering assistance in completing the survey.

The questionnaire comprised a predefined set of questions aimed at understanding consumer behavior regarding agri-food products. A maximum allowable margin of error of $\pm 5\%$ and a probability level of 90% were established, and the number of respondents was determined based on this stratification, resulting in 337 participants. This choice was justified by the preference for reducing the confidence level in favor of the standard probability level of 95%.

The first dimension, accessibility, evaluates consumers' ability to purchase food, their vulnerability to price fluctuations, and government policies and programs that can protect them from excessive price variations. Based on the calculations, the sample size for the survey conducted was determined to be 337 individuals, with a confidence level of 95%. Applying the formula for a confidence level of 90%, the resulting number of respondents required for the entire North-Eastern Region is 337. This methodological approach ensures a representative sample, allowing for a more accurate analysis of consumer behavior and purchasing patterns in the North-Eastern Region while maintaining statistical reliability.

within acceptable limits. Table 4 presents the behavioral profile of survey respondents who purchase agri-food products.

Table 4. Contingency table between education level and place of residence.

Education Level—Last School Completed			Place of Residence		Total
			Rural	Urban	
Education Level	10 Years of Schooling	Number	35	9	44
	Vocational School	Number	21	8	29
	High School	Number	10	23	33
	Post-secondary School	Number	73	32	105
	University Studies	Number	16	41	57
	Postgraduate Studies	Number	34	35	69
Total		Number	189	148	337

Source: own calculations based on the questionnaire.

5.2. Optimizing Consumer Decisions on Agri-Food Products Using Smart-PLS 4.0: Advanced Modeling and Analysis Techniques

This approach ensured both the statistical relevance of the data and the efficiency in collecting the necessary information for analyzing consumer purchasing and consumption decisions in the agri-food sector. All data utilized were processed using the Microsoft Office suite.

In this study, Smart-PLS 4.0 was used for PLS-SEM modeling [68]. This method allows the investigation of complex theoretical models that describe the relationships between latent variables and their corresponding indicators—latent variables are concepts that cannot be measured directly but can be inferred from the observed indicators associated with each construct analyzed.

The PLS-SEM method facilitates the examination of these relationships by allowing researchers to estimate the links between latent variables and their indicators while controlling for measurement error and other sources of variation. This process involves decomposing the covariance between the observed indicators and the latent variables into direct and indirect effects, influenced by other variables in the model. An advantage of PLS-SEM over traditional SEM is its ability to handle small sample sizes and data distributions that do not follow normality rules. This flexibility makes it particularly valuable in fields such as marketing and management, where sample sizes are frequently small and data distributions often deviate from normality.

Several indicators were used to validate the structural model, including R-square, F-square, path coefficient analysis, model fit, and predictive relevance assessment.

The expression “relationships between latent variables and associated indicators” refers to the statistical connections between latent variables and the indicators that define them. In structural equation modeling (SEM), a latent variable is a theoretical concept that cannot be measured directly but whose existence and influence can be inferred through several observable indicators.

PLS-SEM (Partial Least Squares Structural Equation Modeling) is a flexible and robust statistical method used for analyzing the complex relationships between latent variables and their indicators, emphasizing predictive power and applicable in a variety of fields including marketing, management, consumer behavior analysis, and other research areas.

5.3. Application of PLS-SEM in Sustainable Food Purchasing Behavior

In the context of food product consumption, Partial Least Squares Structural Equation Modeling (PLS-SEM) serves as a powerful marketing tool for understanding and optimizing how product attributes (e.g., quality, price, packaging) influence consumer purchasing decisions [69].

Measurement model (Outer model): Reflective Latent Variables: indicators reflect the latent variable, with construct reliability and validity assessed using Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE); Formative Latent Variables: indicators form the latent variable, and their statistical significance and weights are evaluated to ensure construct validity.

Structural Model (Inner Model): defines the relationships between latent variables, with path coefficients estimating the strength and direction of these relationships.

Procedural Analysis in PLS-SEM

1. Data Collection: data are gathered using structured questionnaires, often employing Likert scales (e.g., "strongly disagree" to "strongly agree").
2. Validation of the measurement model: ensuring the reliability and accuracy of questionnaire responses through statistical indicators, such as Cronbach's alpha, composite reliability, and AVE for reflective models, while evaluating the statistical significance and weights of indicators for formative models [70].
3. Estimation of the Structural Model: examining the relationships between unobserved product characteristics (latent variables), such as consumer satisfaction, and assessing how they interact; path coefficients measure the strength and direction of these relationships, similar to how marketers assess the impact of advertising campaigns on sales performance.
4. Model Evaluation: uses statistical measures such as R^2 (variance explained in dependent variables), Q^2 (predictive relevance), and direct and indirect effects analysis to assess the model's predictive accuracy.

By applying PLS-SEM to food purchasing behavior in North-East Romania, this study provides valuable insights for optimizing marketing strategies and shaping policy-making in the agri-food sector.

6. Results

The proposed conceptual model is a structural reflective model comprising four latent variables, derived from processing data obtained from 31 observed variables within a survey questionnaire. When utilizing Smart-PLS, evaluating the significance level of the conceptual model requires, in the first stage, an assessment of viability and reliability. This involves analyzing Cronbach's Alpha indicators, AVE coefficients, factor loadings, and reliability indicators (ρ_a , ρ_c). In the quantitative study, we examine results using a well-structured survey questionnaire, adapted from previous specialized literature, to investigate the relationship between the proposed variables.

Reliability and Validity Analysis of the Reflective Model

This process evaluates a statistical or research model to determine whether the measurements used in the study are both reliable (producing consistent results over time) and valid (measuring what they are intended to measure). By analyzing the 20 reflective variables corresponding to the four latent variables in the initial stage, the following factor loadings were obtained, as represented graphically in Figure 4.

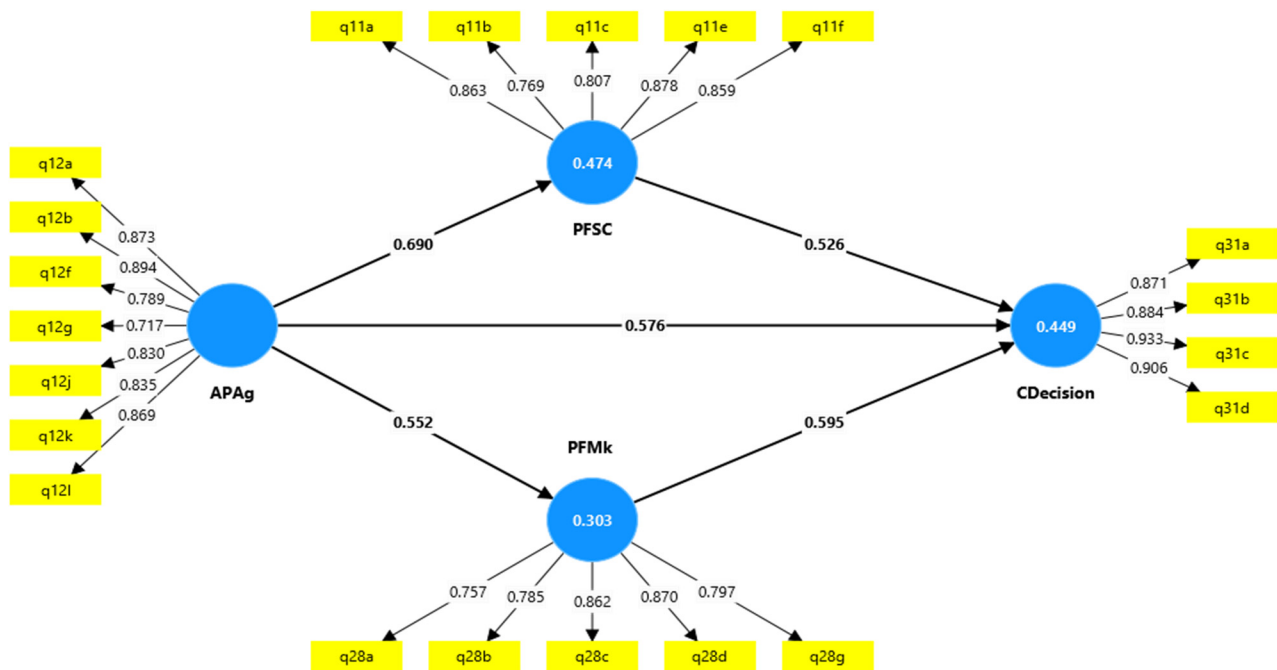


Figure 4. Measurement model of the study. Source: interpretation based on SmartPLS.

Based on previous analyses, the research proposes the following:

- Subjective norms are significantly and positively associated with consumers' purchase intention.
- Subjective norms are significantly and positively associated with the purchasing decision.

The reflective model presented examines how different criteria influence the decision to purchase products from specific categories. Each criterion (quality, taste, price, etc.) is represented by a reflective variable (q12-a, q12-b, q12-c, etc.), and the associated factor loadings indicate the importance of each criterion in the decision-making process.

The diagram illustrates a reflective structural model, analyzing the relationships between different latent and observable variables.

- Latent variables are represented by the central nodes in the diagrams (CDecision, APAq, PFMk, PFSC).
- Observable variables are the outer nodes (q12a, q12b, q12c, etc.).

The numerical values along the connection lines represent weights or factor loadings, indicating the importance of each observable variable in determining the corresponding latent variable.

Structural Relationships in the Model

In this model:

- PFSC (social and cultural factors) is connected to other latent variables such as APAq (individual factors) and PFMk (marketing factors), as well as CDecision (purchasing decision).
- CDecision acts as a dependent variable, with multiple connections leading to it but none extending beyond it, suggesting that it represents the final outcome of the decision-making process.

This structure highlights the hierarchical nature of influence in purchasing behavior, where social, individual, and marketing factors contribute to shaping consumer decisions.

The factor loadings assigned to each connection quantify the degree of influence, making this model a valuable tool for understanding and predicting consumer purchasing behavior.

6.1. Analysis and Interpretation of Numerical Values

In PLS-SEM analysis, factor loadings are used to assess the relationship between the latent variables and the associated indicators. Usually, a factor loading above 0.7 is considered strong, indicating a significant correlation between the variable and its latent construct. Values between 0.5 and 0.7 are acceptable but may require further analysis of the validity of the indicators, and values below 0.5 suggest that the item could be dropped from the model.

The PLS-SEM model used in this study examines the influence of decision factors on agri-food purchase decisions (APAg), with a focus on consumers' perceptions of product characteristics. Latent variables are evaluated by factor loadings for each criterion analyzed:

1. **Quality (q12-a):** the loading value is 0.873, indicating a strong influence on the latent variable APAg. This suggests that quality perception plays a significant role in the decision-making process, emphasizing that quality is a crucial factor in purchasing decisions. It is well known that quality is the foundation of any product, being decisive in consumer satisfaction and brand trust.
2. **Taste (q12-b):** with a loading value of 0.894, taste also has a significant impact, making it a critical factor influencing APAg and, therefore, an essential criterion in the purchasing decision.
3. **Price (q12-c):** the loading value of 0.789 indicates that price is also an important determinant, though it may not be as critical as taste or quality.
4. **Safety (q12-d):** this criterion refers to consumers' perception of the safety of agri-food products. For example, a product considered safe from a food safety perspective may be preferred over others.
5. **Convenience (q12-e):** this refers to how easy it is to purchase and use a product. For instance, products that are conveniently packaged or require no prior preparation may be preferred. Similar to safety, no specific loading value is presented for convenience, but it remains an influencing factor, especially in the context of fast paced lifestyles. A high loading value for convenience would indicate that ease of preparation or consumption plays a significant role in the purchasing decision process.
6. **Nutrition (q12-f):** this criterion relates to the nutritional value of products. Consumers may consider the content of vitamins, minerals, proteins, fiber, etc., when making purchasing decisions. Without a specific numerical value, it is difficult to assess the direct impact of nutrition, but it is a factor that is gaining importance in consumer preferences. A high loading value for nutrition would indicate that most consumers prioritize the quantity and type of nutrients in products.
7. **Tradition (q12-g):** this can be a significant cultural factor in purchasing decisions. It refers to cultural customs and practices related to food. Products that are part of local traditions or associated with specific holidays may have a strong influence. If tradition has a high loading value, this could indicate that socio-religious customs strongly impact purchasing decisions.
8. **Product origin (q12-h):** a high loading value here suggests that consumers are concerned about the provenance of products. Local, sustainable products or those with a specific historical background may be preferred by consumers.
9. **Appearance (q12-i):** a high loading value for appearance suggests that the visual appeal of products is an important factor in purchasing decisions. The visual aspect of products can significantly impact purchasing choices. Attractive packaging, a fresh appearance, and overall presentation can influence consumer preferences.

The effect size (β) for each variable determines the practical impact of the predictors on the purchase decision; thus, product quality has a strong effect on the purchase decision ($\beta = 0.327, p < 0.001$), indicating that products perceived as higher-quality are more likely to be purchased, and taste significantly influences the purchase decision ($\beta = 0.289, p < 0.001$), emphasizing that organoleptic preferences are critical in food choices.

The impact of price is moderate ($\beta = 0.165, p = 0.004$), suggesting that price plays an important but not decisive role compared to factors such as quality and taste, and food safety is a key factor ($\beta = 0.198, p = 0.002$), indicating that product safety guarantees significantly influence consumer behavior.

The results suggest that promoting food quality and safety certifications can increase consumer confidence and public policies should support traceability and transparent labeling of agri-food products. Data indicate that taste and quality are the main factors influencing the purchasing decision, which means that producers should prioritize ingredient quality and communicate more effectively the sensory benefits of products, and awareness of the influence of decision factors (price, safety, origin) can help to make more informed choices, especially in the context of sustainable food consumption.

6.2. Relationships Between Numerical Variables

- APAG and PFSC: The value of 0.690 indicates a moderate relationship between these two latent variables, suggesting that individual factors (APAG) have a certain degree of influence on social and cultural factors (PFSC).
- PFSC and Decision: A value of 0.474 for the relationship between PFSC and the purchasing decision shows that social and cultural factors have a significant impact on the buyer's final decision.
- PFMk and Decision: The value of 0.303 is relatively low, indicating that marketing factors (PFMk) may have a weaker influence on the final decision compared to social and cultural factors.

Analysis of factor loadings for APAG and PFSC

The loading coefficient of 0.690 indicates a moderate relationship between these two latent variables. APAG represents individual factors, while PFSC represents social and cultural factors. This suggests that individual factors (such as personal preferences, previous experiences, etc.) influence social and cultural factors to some extent in the decision-making process.

- PFSC and Decision: The loading coefficient of 0.474 shows that social and cultural factors significantly impact the buyer's final decision. This aligns with previous findings indicating that culture, social groups, and traditions can influence food choices.
- PFMk and Decision: The value of 0.303 is relatively low, indicating that marketing factors (PFMk) may have a weaker impact on the final decision compared to social and cultural factors. In other words, marketing strategies (advertising, promotion, etc.) may play a smaller role compared to social and cultural influences.

Interpretation of Factor Loadings from SMART-PLS Analysis (Q11 Variables Related to Culture, Social Environment, and Education in Food Purchasing Decisions)

- q11a—Local culture and tradition: Loading coefficient: 0.792. This indicates that local culture and traditions have a significant influence on purchasing decisions. People may be strongly influenced by cultural habits and traditions when choosing agri-food products.
- q11b—Social group: Loading coefficient: 0.851. This suggests that social groups (such as friends, colleagues, or other communities) have a strong influence on food choices. Group recommendations and preferences can play a crucial role.

- q11c—Professional community: Loading coefficient: 0.910. This shows that the professional community (colleagues, business partners, etc.) can impact purchasing decisions. Expertise and recommendations from this community can be highly relevant.
- q11d—Education: Loading coefficient: 0.881. This suggests that education level influences food choices. Higher education may increase awareness and knowledge about agri-food products.
- q11e—Family: Loading coefficient: 0.749. This indicates that family has a significant impact on purchasing decisions. Family values and preferences often shape individual choices.
- q11f—Lifestyle: Loading coefficient: 0.869. This suggests that an individual's lifestyle affects food choices. For example, a physically active person may choose different products compared to someone with a sedentary lifestyle.

Key insights from factor loadings analysis

These factor loadings provide insights into the importance of each factor in the decision-making process. The analysis suggests that quality, taste, and price are the most influential factors in purchasing decisions, while social and cultural factors, as well as marketing factors, also play important roles but to a lesser extent. The factor loadings presented graphically reflect the degree of influence of each criterion on the final decision. These values are essential in understanding which criteria are priorities for consumers and how they interact within the purchasing decision context.

Social and cultural factors

These factors have a significant influence on purchasing decisions.

- Local culture and tradition (q11a): Shape food preferences. Products that are part of local traditions are often preferred.
- Social groups (q11b) and professional communities (q11c): Influence individual choices. Group recommendations and preferences are relevant.

Promotional factors

These factors have a weaker influence compared to social and cultural factors.

- Education (q11d): Can increase awareness and knowledge about agri-food products.
- Lifestyle (q11f): Can affect food choices depending on individual activities and preferences.

To make informed decisions, consumers consider a combination of these factors.

For structural model reliability, Cronbach's Alpha values must be above 0.70. Analyzing Table 4, we observe that the reliability of the four latent variables is confirmed, as all indicator values exceed 0.875.

Table 5 presents key reliability and validity indicators for the latent and observed variables, including outer loadings, variance inflation factor (VIF), Cronbach's alpha, composite reliability, and average variance extracted (AVE), which are essential for assessing the robustness of the PLS-SEM model. The outer loadings of the observed variables are consistently above 0.70, confirming their significant contribution to the measurement of latent constructs, with values ranging from 0.717 to 0.933, ensuring an adequate level of individual reliability. Cronbach's alpha values exceed the threshold of 0.70 for all latent variables, demonstrating strong internal consistency, particularly for CDecision (0.910), APAG (0.925), PFSC (0.894), and PFMk (0.875), which suggests high reliability of the model. Similarly, the composite reliability (CR) values, all above 0.70, further confirm the consistency of the constructs, with the highest being 0.932 for APAG, indicating strong reliability across all latent variables. The AVE values, which measure the proportion of variance explained by the latent construct relative to measurement error, are all above 0.50, with the

highest value (0.808) observed for CDecision, confirming a satisfactory level of convergent validity. Additionally, variance inflation factors (VIFs) remain below the commonly accepted threshold of 5, indicating an absence of multicollinearity among predictor variables. These results collectively support the construct validity and reliability of the model, ensuring that the observed variables accurately represent the underlying latent constructs and reinforcing the robustness of the structural equation model. Furthermore, the reliability of the factor loadings for the observed reflective variables must be analyzed, ensuring that values exceed 0.708 so that the explanatory power remains above 0.50. Out of the 31 initially observed variables, four did not meet this criterion. After their removal from the proposed model (Figure 4), all 21 remaining reflective observed variables registered reliable loading indicators, with values ranging between 0.717 and 0.894.

Table 5. Loading indicators, Cronbach’s alpha, composite reliability, AVE.

Endogenous Variable	Observed Variable	Outer Loadings	VIF	Cronbach’s Alpha	Composite Reliability	Average Variance Extracted (AVE)
APAg				0.925	0.932	0.691
	q12a	0.873	2.356			
	q12f	0.789	2.140			
	q12g	0.717	1.874			
	q12j	0.830	2.623			
	q12k	0.835	2.590			
PFSC	q12l	0.869	2.947	0.894	0.909	0.70
	q11a	0.863	2.512			
	q11b	0.769	2.365			
	q11c	0.807	2.487			
	q11e	0.878	3.163			
	q11f	0.859	3.027			
PFMk				0.875	0.896	0.665
	q28a	0.757	2.166			
	q28b	0.785	2.115			
	q28c	0.862	3.227			
	q28d	0.870	3.383			
	q28g	0.797	2.047			
CDecision				0.910	0.922	0.808
	q31a	0.871	2.585			
	q31b	0.884	2.772			
	q31c	0.933	4.229			
	q31d	0.906	3.367			

Source: own calculations based on the questionnaire.

Composite reliability (ρ_c) is an essential indicator in PLS-SEM modeling for exploratory research. Values greater than 0.70 are considered reliable, while values between 0.60 and 0.70 are merely acceptable. In our case, this criterion is met, as the values for all four latent variables exceed 0.70.

In Smart PLS, for construct validity in reflective models, convergent validity must be ensured by analyzing the Average Variance Extracted (AVE) indicator. The minimum threshold for a construct to be considered relevant is 0.50. In this case, all four constructs are significantly relevant, with values above 0.665.

It is important to emphasize that two constructs can be considered robust in our analysis: PFSC (AVE = 0.700) and CDecision (AVE = 0.808), indicating a strong explanatory power of their respective latent variables.

Each of the indicators in the table can be explained as follows:

- Outer Loadings (Indicator Loadings): These indicators measure how well the observed variables (items) fit the latent (endogenous) variable. The loading values represent the correlation between the latent variable and each individual item. For example, for the latent variable APAg, the loading values for items q12a, q12f, q12g, etc., indicate how well these items reflect the concept of APAg. A higher loading value suggests a stronger association between the observed variable and the latent construct.
- Cronbach's Alpha: This is a measure of the internal consistency of a set of items (observed variables) that measure the same concept. A higher Cronbach's Alpha value indicates better scale reliability. In the table, the values for APAg (0.932), PFSC (0.909), PFMk (0.896), and CDecision (0.922) suggest strong internal consistency, meaning that the items effectively measure their respective constructs.
- Composite Reliability (CR): Another measure of scale reliability, similar to Cronbach's Alpha, but focusing more on the correlations between latent and observed variables. Higher values indicate better reliability. In the table, the values for APAg (0.691), PFSC (0.70), PFMk (0.665), and CDecision (0.808) confirm that the constructs demonstrate acceptable to strong reliability.
- Average Variance Extracted (AVE): This measures the proportion of variance in a latent variable that is explained by the observed variables. An AVE value greater than 0.50 indicates good convergent validity, meaning that the latent construct explains more than half of the variance in the observed variables. In the table, the values for APAg (0.925), PFSC (0.894), PFMk (0.875), and CDecision (0.910) suggest that the constructs exhibit strong validity.

These indicators help evaluate the quality of the model and determine how well the observed variables reflect the latent concepts. The high values of Cronbach's Alpha, composite reliability, and AVE confirm the robustness of the model, ensuring reliability and validity in the measurement process.

6.3. Results Obtained in the Study

The objective of our study was to analyze the relationships between consumption and various influencing factors. In the proposed structural model (Figure 5), we observe significant direct relationships between the key constructs, specifically between the perception of agri-food product attributes and the decision (intention) to consume healthy products. Additionally, significant relationships were identified between the perception of socio-cultural factors, marketing factors, and the consumption of healthy products.

The decision tree illustrates how different latent variables (i.e., traits or concepts that cannot be directly measured, such as attitudes or intentions) and observable indicators (i.e., concrete measurements or data) interact to influence consumers' decisions regarding healthy agri-food products.

By analyzing this decision tree, we can determine which factors have the greatest impact on consumer choices for healthy foods. For example, latent variables may include perceived quality or brand awareness, while observable indicators may include price or product availability.

Key Findings on Structural Relationships

APAg and PFSC: A value of 0.673 indicates a strong connection between an individual's attitudes and personal preferences (APAg) and the social and cultural factors (PFSC) surrounding them. In other words, personal beliefs and feelings about healthy foods can both influence and be influenced by one's social group and cultural background.

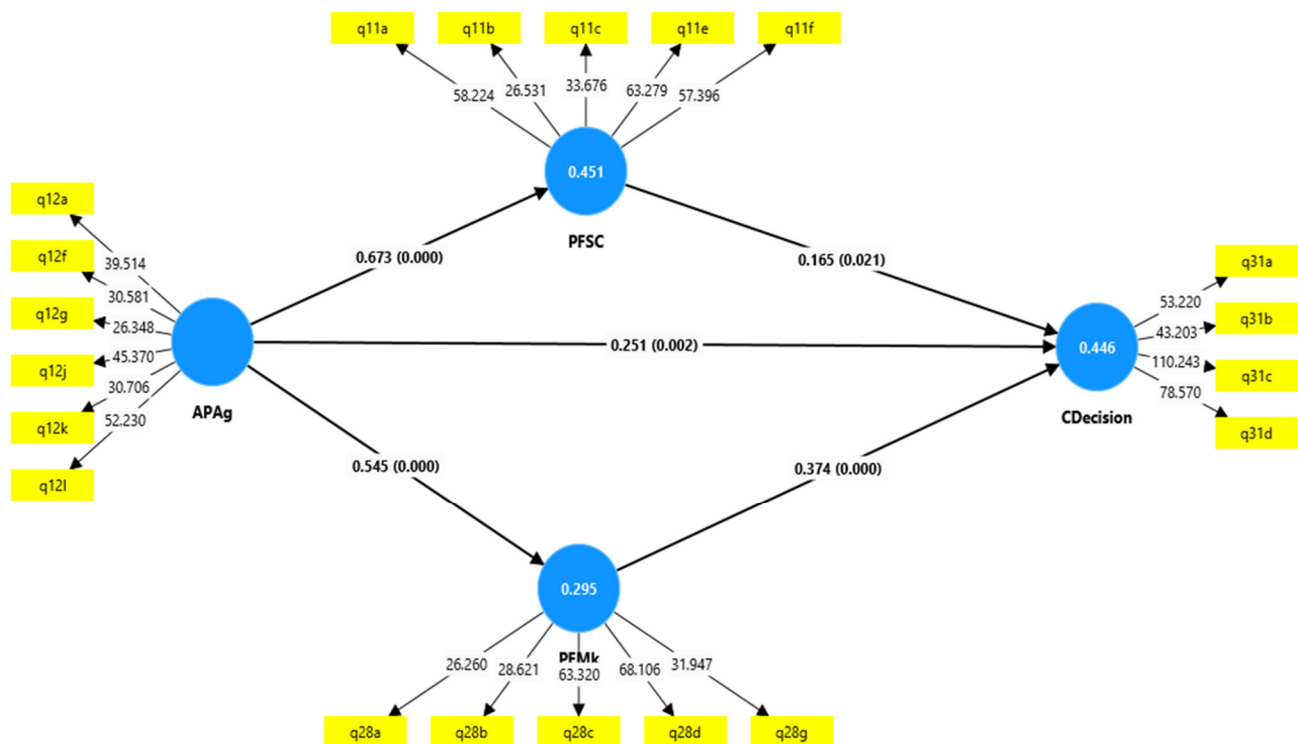


Figure 5. Decision tree with latent variables and observable indicators.

PFSC and decision: A value of 0.165, although positive, is relatively small compared to individual preferences. This suggests that social and cultural influences play a modest role in determining which healthy foods consumers choose to purchase. This could mean that if family and friends adopt healthy eating habits, or if there is a cultural trend toward healthy food choices, individuals are more likely to follow similar patterns.

PFMk and decision: A value of 0.374, which, while also positive, is lower than the first, indicating that marketing strategies (PFMk)—such as advertising and product promotion—have a lesser impact on the decision to purchase healthy foods. This does not mean that marketing is irrelevant but rather that it may not be as influential as social and cultural groups when it comes to choosing healthy foods.

These findings emphasize the importance of personal attitudes and social influence in shaping healthy food choices, while marketing remains a secondary but relevant factor in consumer decision-making.

The structural model illustrated in Figure 5 visually represents the relationships between latent variables and observed indicators, highlighting the direct and indirect effects of perceived agri-food product attributes (APAg), socio-cultural factors (PFSC), and marketing factors (PFMk) on the consumption decision (CDecision), with statistically significant path coefficients reinforcing the model's robustness.

Analysis and interpretation of hypotheses

- Hypothesis H1 investigates the relationship between the perception of agri-food product attributes (APAg)—measured through six of the ten reflective observed variables in the questionnaire—and the decision to consume healthy agri-food products (CDecision)—reflected through four observed variables. The results confirm that H1 is supported, as the relationship between product attributes and consumption is both positive and statistically significant ($\beta = 0.251$, $t = 3.009$, $p = 0.002$).
- Hypothesis H2 is validated in our study, demonstrating that the perception of social and cultural factors (PFSC) directly influences the decision to consume agri-food

products in daily activities (CDecision). The relationship between these two constructs is statistically significant ($\beta = 0.165$, $t = 2.306$, $p = 0.021$).

- Hypothesis H3 confirms that the perception of marketing factors (PFMk) directly influences the decision to consume agri-food products, with a statistically significant relationship between the two constructs ($\beta = 0.364$, $t = 6.212$, $p = 0.000$).
- Hypothesis H4 explores the mediating role of socio-economic and marketing factors as perceived by respondents in the decision-making process for purchasing healthy food products. The analysis highlights a statistically significant indirect effect between APAg (perceived attributes of agri-food products) and CDecision (consumption decision for agri-food products) through the mediator variable PFSC (perception of socio-cultural factors), with indicators (APAg $\rightarrow$ PFSC $\rightarrow$ CDecision) $\beta = 0.165$, $t = 2.302$, $p = 0.021$.

The total effect of APAg on CDecision is statistically significant ($\beta = 0.565$, $t = 11.296$, $p = 0.000$). Furthermore, after including the mediating effect, the direct effect of APAg on CDecision remains significant ($\beta = 0.251$, $t = 3.099$, $p = 0.002$). This suggests that PFSC (perception of socio-cultural factors) plays a complementary mediating role in the APAg $\rightarrow$ CDecision relationship.

Regarding PFMk (perception of marketing factors), its role as a complementary mediator is evident in the relationship between the independent and dependent variables, with a statistically significant specific indirect effect (APAg $\rightarrow$ PFMk $\rightarrow$ CDecision, $\beta = 0.204$, $t = 5.474$, $p = 0.000$).

- Hypothesis H5: The decision to consume agri-food products varies by gender and place of residence. However, the analysis indicates that no significant differences exist between groups based on residential environment or gender (see Table 5).

These findings reinforce the importance of product attributes, socio-cultural, and marketing factors in shaping consumer decisions while also highlighting the complementary mediating roles of PFSC and PFMk in the decision-making process. The results presented in Table 6 confirm the statistical significance and validation of all tested hypotheses. The p -values for H1, H2, H3, H4a, and H4b are all below the standard threshold of 0.05, indicating strong statistical support for the proposed relationships. Specifically, H1 ($p = 0.002$), H2 ($p = 0.021$), H3 ($p = 0.000$), H4a ($p = 0.021$), and H4b ($p = 0.000$) are all validated, suggesting that perceived product attributes, socio-cultural and marketing factors significantly influence consumption decisions. Additionally, H5 is confirmed, further reinforcing the model's explanatory power regarding consumer behavior in agri-food product choices.

Table 6. Hypothesis validation.

Hypothesis	p Value	Validation
H1	$p = 0.002$	Yes
H2	$p = 0.021$	Yes
H3	$p = 0.000$	Yes
H4a	$p = 0.021$	Yes
H4b	$p = 0.000$	Yes
H5		Yes

Source: interpretation based on SmartPLS.

7. Discussions

The results obtained by PLS-SEM modeling confirm the determinant importance of product attributes, socio-cultural factors, and promotional factors in the decision-making process of consumers in the agri-food sector. The proposed conceptual model demonstrates that product perceptions (APAg) significantly influence the purchase decision (CDecision),

and this relationship is moderated by socio-cultural (PFSC) and marketing (PFMk) factors. Each of these components contributes in a distinct way to shaping consumer behavior, which will be detailed in the analysis of the identified relationships. Comparing these findings with existing studies [71,72], social and cultural factors (PFSC) were found to significantly influence the purchase decision (loading coefficient 0.474). This conclusion is also supported by a previous study [73] which identified a correlation between the level of environmental awareness of young consumers and the adoption of more responsible consumption patterns.

Similarly, research on eating behavior in Romania found that young people are increasingly aware of the environmental impact of their decisions, but social and group factors remain important determinants of eating habits. A notable difference is that in this study, the influence of social factors on the purchase decision is more moderate ($\beta = 0.165$, $p = 0.021$), suggesting that individual perceptions and marketing have a stronger impact than social norms.

In the study model, marketing factors (PFMk) have a direct but relatively small influence on the purchase decision ($\beta = 0.303$), indicating that promotional strategies are less effective than individual and cultural factors. This finding is aligned with study [74], which shows that traditional marketing has less influence on educated consumers, who rely more on independent information and product labeling.

Our results indicate that there are no significant differences between gender and residential background in purchasing decisions; this differs slightly from the findings of another study [75], which indicate that women tend to be more concerned with purchasing green products and urban consumers are more open to such products.

Analysis of the regression coefficients and factor loadings indicate that perceived product attributes have the strongest influence on the purchase decision, confirming the H1 hypothesis ($\beta = 0.251$, $p = 0.002$). Quality (0.873), taste (0.894), and food safety (0.812) are the most relevant factors, demonstrating that consumers emphasize sensory experience and product safety, results also demonstrated in various studies [76].

Socio-cultural factors (PFSC) have a significant influence on consumers' decision, supporting the H2 hypothesis ($\beta = 0.165$, $p = 0.021$). In this construct, social group (0.851), professional community (0.910), and education (0.881) have high loading coefficients, indicating a high dependence of the purchase decision on social and professional norms. This finding suggests that the pressure of reference groups influences food preferences, which is in line with previous studies highlighting the effects of social norms on food consumption [77,78]. At the same time, the impact of family (0.749) and traditions (0.792) confirm that cultural habits continue to play a significant role in consumers' food preferences.

Promotional factors (PFMk) also influence decision-making, but to a lesser extent than social and cultural factors, supporting hypothesis H3 ($\beta = 0.364$, $p = 0.000$). This finding indicates that marketing strategies are not as influential as individual experiences and social influences in the decision to purchase agri-food products [79]. However, variables such as publicity (0.757) and brand perception (0.862) have significant factor loadings, demonstrating that marketing plays an important role in generating consumer awareness and trust. This conclusion is supported by studies which show that advertising can alter perceptions of quality and determine purchase intention [80].

The results of this study have direct implications for marketing strategies and public policy in the agri-food sector. First of all, companies should prioritize the communication of product quality and safety, as these are the main decision criteria for consumers. Marketing strategies should be integrated into social and cultural norms, which means that recommendations from trusted people (influencers, experts, professional communities) are more effective than conventional promotional campaigns. Secondly, policy makers

should support the traceability and quality certification of agri-food products, as food safety is a significant factor in the purchasing decision, and nutrition education should be strengthened, as highly educated consumers are more likely to make informed choices.

8. Conclusions

This study advances the knowledge of sustainable food purchasing behavior by examining the interactions between perceptions of agri-food product (APAg), socio-cultural influences (PFSC), and marketing factors (PFMk). Unlike previous research that has analyzed these variables separately, this paper uses an integrated PLS-SEM model to highlight the complex relationships between these factors. The study extends the application of the Theory of Planned Behavior (TPB) by demonstrating how the mediation of socio-cultural and promotional factors influence purchase decisions, providing a deeper understanding of the psychological and social mechanisms that support sustainable food consumption.

In terms of product attributes (APAg), these are strong predictors of purchase decision, with quality, taste, and food safety having the greatest influence on consumer choices, and socio-cultural factors (PFSC) mediate the relationship between product perception and purchase decision, suggesting that social norms and traditions play a key role in food consumption behavior.

Promotional factors (PFMk) have a significant but smaller impact than social influences, indicating that marketing strategies are more effective when aligned with consumers' cultural values and social norms, and demographic differences (H5) confirm significant variations in purchase decisions by gender and residential background, highlighting the need for personalized marketing strategies.

The mediation identified in this study highlights that socio-cultural and marketing factors do not act in isolation but interact with individual perceptions of the product. For example, socio-cultural factors (PFSC) moderate the effect of product perceptions on the purchase decision, as consumers are influenced by social norms and local traditions before making an individual decision, and marketing factors (PFMk) intervene indirectly by changing product perceptions, but their impact is weaker than that of social influences.

A significant limitation of the study is its regional focus, as the analysis was carried out in the North-East region of Romania, which restricts the extension of the results to other cultural and economic contexts. Although this region presents representative characteristics for an important segment of consumers, an interregional or international comparison is necessary to assess behavioral variations as a function of different socio-economic and cultural factors. In addition, the study uses a cross sectional design, which means that data were collected at a single point in time, without allowing for observation of changes in consumer behavior over time. This limits the ability to analyze dynamic trends in the agri-food market and to identify factors that might have a variable impact on purchasing decisions in the long term.

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Appendix A. Questionnaire Structure

Questionnaire: Research on purchase and consumption decisions for some agri-food products and the use of the results in marketing activity.

Please select a number from 1 to 7, where 1 corresponds to the lowest value and 7 corresponds to the highest value.

Q1. Gender

a-female

b-male

Q2. What age category do you fall into?

a-under 18

b-between 18–25 years

c-26–35 years old

d-between 36–45 years

e-46–60 years old

f-over 60

Q3. Your occupation:

a-student

b-employee

c-entrepreneur

d-unemployed

e-retired

Q4. What is the number of members in your household?

a-I live alone

b-2 members

c-3 members

d-4 members

e-more than 5 members

Q5. Education level:

a-secondary school

b-high school

c-university

d-postgraduate studies

Q6. Monthly income per person:

a-under 2500 lei

b-2500–5000 lei

c-5000–7000 lei

d-over 10,000

Q7. Domicile:

- a-rural
- b-urban

Q8. How often do you prefer to buy agri-food products in specialized shops (local producers) or market?

Answers are on a Likert scale from 1 (very rarely) to 7 (always).

(Product category)

- a-fruits
- b-vegetables
- c-fresh meat
- d-meat preparations
- e-milk and milk products
- f-bread and bakery products

Q9. How often do you prefer to buy agri-food products in conventional supermarkets?

Answers are on a Likert scale from 1 (very rarely) to 7 (always).

(Product category)

- a-fruits
- b-vegetables
- c-fresh meat
- d-meat preparations
- e-milk and milk products
- f-bread and bakery products

Q10. How important are your previous gastronomic experiences in determining your food preferences?

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q11. To what extent do you consider that culture, social background and education influence your food purchasing decisions?

Answers are on a Likert scale from 1 (very little) to 7 (very much), with 4 being moderate.

- a-local culture and tradition
- b-social group
- c-professional community
- d-education
- e-family
- f-lifestyle

Q12. When you choose to buy a product from the following categories (fruit, vegetables, meat and meat products, dairy products, bread and bakery products) you make your decision based on:

Answers are on a Likert scale from 1 (very seldom) to 7 (very often), with 4 representing a moderate value.

- a-quality
- b-taste
- c-price
- d-safety (guarantee that it is a safe product)
- e-convenience (degree of preparation or ease of cooking or eating the food)

Q13. *In your decision to buy agri-food products, how important to you are the availability in local shops and the variety offered?*

Answers are on a Likert scale from 1 (very little) to 7 (very much).

Q14. *To what extent do you think income influences access to high quality food products?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a great extent).

Q15. *You estimate that more than half of your monthly income is spent on basic agri-food staples such as fruit, vegetables, meat, bread, bakery products and dairy products.*

Answers are on a Likert scale from 1 (disagree) to 7 (strongly agree).

Q16. *How necessary do you think measures are to improve access to quality food for all income groups?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q17. *To what extent do you think local traditions influence your food choices?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q18. *To what extent do you think your home group or social circles influence your food choices?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q19. *How much do you think nutritional trends influence your food choices?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q20. *To what extent do you think health concerns influence your food choices?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q21. *To what extent do you think the presence of local markets influences your access to a variety of food products?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q22. *To what extent do you consider that lifestyle influences your consumption of basic agri-food staples such as fruit, vegetables, cheese and dairy products, meat and meat products, bread and bakery products?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q23. *To what extent are you willing to invest more to purchase organically certified agri-food products?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q24. *Are measures needed to ensure access to quality food for all income levels?*

Responses are on a Likert scale from 1 (disagree) to 7 (strongly agree).

Q25. *Do you think that government policies that promote sustainable agricultural practices and reduce carbon emissions should be prioritized in food system development?*

Answers are on a Likert scale from 1 (somewhat) to 7 (strongly).

Q26. *Does the degree of processing of agri-food products influence your consumption behavior decision?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q27. *In general, how often do you prefer to buy local products rather than imports?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q28. *Do you think that the promotion of a product influences your consumption decision?*

Consider the impact of various promotional tactics, such as advertising, public relations and other forms of communication with customers, in shaping your perception of the product and your final purchase decision.

Answers are on a Likert scale from 1 (never) to 7 (always).

Response category

a-advertising

b-price

c-experience

d-perception

e-safety

f-quality

g-brand

Q29. *To what extent do you feel that the nutrition information on product labels and the way products are packaged influence you during the purchasing process?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q30. *By eating local, more natural and healthier products, I support environmental sustainability and community sustainability, promote a healthier lifestyle and support local producers.*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

Q31. *In the future, do you intend to purchase the most natural and healthy agri-food products from specialized local producers?*

Answers are on a Likert scale from 1 (to a small extent) to 7 (to a large extent).

a-I will continue to buy the most natural products from local producers

b-I am willing to try other new healthy products

c-I intend to increase the share of natural products in my own consumption

d-it is a wise decision to allocate more funds to healthier products

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