

CONSUMER BEHAVIOR ON FOOD SAFETY AND TRACEABILITY OF SPECIALTY COFFEES: A MEANS-END ANALYSIS

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Abstract

This article aimed to identify the importance of food safety and traceability on consumer behavior towards specialty coffee. Using a means-end and personal values approach, it sought to analyze and describe aspects related to food safety considered relevant in consumers' cognitive structure that guides their purchasing behavior of specialty coffees. The study employed a qualitative descriptive approach and used laddering interviews as the data collection method. Forty regular consumers of specialty coffee residing in different Brazilian states were interviewed. The research highlighted the influence of food safety and traceability aspects on the consumption of specialty coffee. Product attributes such as packaging, origin, certifications, and aroma should meet consumers' desired conditions, providing a sense of food safety, health benefits, and confidence in consumption. Consumers feel secure in two ways: some prefer to verify and validate the information themselves, while others have a trusting relationship with the seller and do not need to validate the information

received. This study offers a exploration of the impact of food safety and traceability on consumer behavior specifically within the context of specialty coffee.

Keywords: Specialty coffees, Food safety, Traceability, Means-end chain.

INTRODUCTION

Specialty coffees stand out as a distinctive food product that promotes an embracing relationship with its consumers. Factors such as beverage quality, the influence of other consumers, the pursuit of a healthy diet, and affection for the universe that the beverage evokes have been shown to be decisive in consumers' shift towards specialty coffee consumption over commodity coffee (Guimarães et al., 2018). These situations bring to light the motivations that guide the consumption behavior of specialty coffee consumers and how they may internalize certain relationships involving food attributes, such as food safety and traceability (Smith, 2018).

From the consumers' perspective, several aspects can contribute to defining the quality of a food product. According to Grunert (2005), food quality is directly linked to food safety aspects. In addition to organoleptic properties, factors such as the production process and origin, food labeling, distribution, and food traceability can impact consumption. The food safety factor is closely related to these perceptions (Bouranta, Psomas, & Vouzas, 2018; Dias et al., 2019). In Europe, approximately 25% of the population values quality information that can attest to the safety of the food when consumed (Sadilek, 2019).

Food traceability is also characterized as an attribute of great importance in the marketing of food in general. Studies on traceability have shown consumers' concern about the origin of the food and the path it follows until the purchase at physical or virtual establishments, and consequently in the act of consumption (Botonaki et al., 2006; Resende-Filho and Hurley, 2012; Smith, 2018).

This article aimed to identify the importance of aspects of food safety and traceability in the behavior of consumers of specialty coffees. To achieve this goal, Gutman's means-end chain theories (1982) and Schwartz's human values (2017) were used as a theoretical basis.

The information provided here enables stakeholders to optimize the relationships within the production chain with a focus on meeting the needs and expectations of consumers. It helps clarify some of the questions that arise for the actors in the production chain, such as determining the best type of packaging, what information should be included on the label, and how to ensure the traceability and safety desired by consumers.

LITERATURE REVIEW

Food safety and traceability in the specialty coffee market

In the global coffee market, some studies have demonstrated the importance of food safety requirements, whether formal or informal, for higher levels of consumer acceptance in the globalized market (Raynolds, 2009; Teixeira & Oliveira, 2016). Coffee as a commodity is traded and consumed practically worldwide. In the first four months of 2023, Brazil exported coffee to 133 countries, with the United States and Germany being the main destinations, representing 18.3% and 14.7% of the total, respectively. Italy followed with 8.1%, Belgium with 5.4%, and Japan with 5.2% (Cecafé, 2023).

Each country has its own food safety requirements and regulations, especially when it comes to imported food products (Pouliot, & Sumner, 2013). It is evident that Brazilian coffee producers are concerned with meeting these requirements, aiming to ensure safety, reliability, and quality in the processes involved in the coffee production chain (Leme, 2015; Guimarães, 2019).

The best quality coffee produced on a large scale, in large farms, by countries such as Brazil, Colombia, Guatemala, and Vietnam, is exported to other countries, such as the United States and European countries (Smith, 2018). One way to ensure food safety requirements in importing countries is through coffee traceability, which monitors the journey of the beans from their origin, recording the

producing farm and its location, to the final destination, which could be a coffee shop, a specialty store, or a supermarket chain (Raynolds, 2009; Kamiloglu, 2018).

Raynolds (2009) highlights the importance of coffee traceability as an everyday tool in relationships between producer and buyer, in which concerns about environmental, financial, and social sustainability must be preserved through fair and transparent trade. Although the study focused on coffee food, and not specifically on specialty coffees, the results showed relevant aspects for improving traceability as an attribute that enhances safety mechanisms for consumption.

Kamiloglu (2018) states that the adulteration of beverages such as coffee is common in its commercialization due to the use of parts considered useless, but which with the mixture are not identified without a microbiological, chemical, or biomolecular analysis. The traceability of the coffee drink can justify an alternative to combat contamination and, consequently, validate food safety requirements. However, it demands from the players involved a continuous improvement in the management and improvement of traceability techniques.

Smith (2018) highlights that specialty coffees, especially those produced in Costa Rica, have advanced grain tracing techniques by developing a terroir-based traceability approach, similar to the process used for wines. The appreciation of the landscapes of the producing regions, specific information about these regions, and the history of the rural producers have further enhanced the traceability process of specialty coffees produced, marketed, and exported by Costa Rica.

In the case of Brazil, Leme (2015) points out that it is not enough for Brazilian coffees to be produced with quality requirements, they must sell this quality to internal and external consumers, who are increasingly demanding in terms of beverage quality, safety, origin, traceability, and sustainability. The premise of the traceability stamps is to identify the stages of origin, distribution, and destination of the coffee, providing value and security to the final consumer.

According to Leme and Pinto (2018), certifications can have positive impacts on the quality attributes, and consequently, aspects of food safety can be observed, with traceability being a technical and practical component of the production and distribution processes of specialty coffees. Still, according to the authors, the certifiers are entities that have direct relations with the production chain, and their stamps are intended to ensure the processes of production and distribution of grains or their by-products.

When it comes to entities issuing certificates in the specialty coffee universe, Leme and Pinto (2018) highlight the Quality Coffee Program (QCP) by ABIC. The PQC is related to the coffee roasting and grinding industry, involving aspects of quality in the production system and beverage characteristics, ensuring food safety aspects at a crucial stage of the production chain. Another notable certification is the Rainforest Alliance, which is internationally recognized and focuses its actions mainly on aspects related to environmental protection and sustainable production, in addition to generating coffee traceability.

Origin certifications attest to the region where the coffee was produced, following the standards established by the community of producers in the region and guaranteeing safety, reliability, and traceability. The Utz Certified certification, with an international standard, focuses on property management, combined with social responsibility and good coffee management and production practices, aiming to achieve high levels of quality in the final product and thus ensuring food safety requirements.

Coffee producers can invest in quality, safety, and reliability processes by seeking certifications that address production and marketing methods, aiming to achieve ideal levels of good management practices, hygiene, safety, and coffee traceability (Leme and Pinto, 2018). It is important to point out that each certificate has its own operating model, but all are based on the pillars of quality. This work is not intended to discuss in depth the criteria and processes that involve the certificates and stamps that make up the coffee market in Brazil. However, reference to them is necessary given the characteristics of the researched market.

As emphasized by Raynolds (2009), the market shows an increase in the trading and demand for certified coffees, as major coffee industry corporations use the promotion of these products to enhance their commercialization, increase financial revenue, and convey a positive image to their

consumers, particularly with stamps and certifications related to sustainability, social relations, safety, traceability, and fair trade.

On the other hand, Guimarães (2019) argues that direct trade between producers, specialty shops, emporiums, and even consumers themselves can enhance and validate food safety requirements and traceability of specialty coffees. In other words, specialty coffees do not necessarily need to have a certification stamp from a certifying entity. According to the author, direct trade favors reliability, loyalty, and a fair relationship between the parties, generating shared benefits between the players involved in the buying and selling processes. In the work by Guimarães et al. (2018), the results showed other factors that may be more important to motivate the consumption of the drink, such as access to specific information on coffees, such as region of origin, responsible producer, sensory notes, among other attributes.

In this sense, it is perceived that the food safety theme in the specialty coffee production chain is associated with product traceability. Consumers are becoming increasingly attuned to information, especially because it involves a food product considered distinct. Individuals who consume this type of food have often experienced consuming products produced on a large scale, which tend not to be 100% pure. On the other hand, consumers tend to systematize information about food safety and traceability or believe and trust in the relationships between them and the sellers. Thus, understanding how they internalize motivations that can guide their behavior as consumers of specialty coffees becomes an important factor to analyze and disseminate to the players in the production chain.

Means-end chain approach

According to Gutman (1982), consumers structure their decisions hierarchically, taking into account the attributes and properties of a product as a means to achieve desired end goals. The author states that creating a hierarchical structure allows for recognizing and explaining how the relationships between the aspects of a product relevant to consumers are established. It also reveals the results obtained from consumption, indicating the ultimate objectives sought by the individual, which can be understood through personal values (Schwartz, 1992; 2017).

Thoughts are structured hierarchically, connecting concrete thoughts about the product to higher levels of abstraction related to the consumer's self-awareness. This forms a sort of chain, associating product or service attributes - which can be concrete or abstract - with benefits/consequences - which can be classified as functional or psychosocial - and with personal values - which can be instrumental and/or terminal. As a result, relationships are formed between attributes (A), consequences (C), and values (V), which originate unconsciously from the individual's more abstract levels in their consumption context (Gutman, 1982; Walker and Olson, 1991; Vilas Boas et al., 2006; Ikeda, Campomar, & Chamie, 2014).

This organization between concrete thoughts associated with products and more abstract thoughts forms a sequence of means to ends (Walker & Olson, 1991). Through this sequence, it is possible to identify the existence of product attributes that generate functional or psychosocial consequences or benefits, and these effects allow consumers to achieve ultimate states of existence, namely personal values (Gutman, 1982; 1997; Vilas Boas, 2005).

Personal values

Within the discussion of personal values acting as motivators for consumption, Schwartz's theory of basic human values (1992; 2017) seeks to understand consumers' expectations, perceptions, and the degree of importance they attribute to buying and consuming something. Some studies indicate that personal values can act as motivators in food consumption, becoming guides for behavior (Gandia et al., 2018; Hansen, Sørensen, & Eriksen, 2018; Castro et al., 2019; Brümmer & Zande, 2020). Schwartz's theory correlates with Gutman's theory by providing complementary analyses to identify and describe how the consumption of goods and services can generate additional information about the cognitive perspective involving consumption motivated by personal values.

Schwartz's refined theory defines and orders nineteen values along the continuum of the 1992 theory, based on the individual's compatible and conflicting motivational relationships, considering factors such as self-protection-preventing anxiety expression versus growth-free of anxiety and personal focus versus social focus (Schwartz, 1992; 2017; Schwartz et al., 2012). It is important to demonstrate the differences between the theoretical models of 1992 and 2012, precisely to understand the reason for the refinement and to relate the evolution of the theory as a tool to promote knowledge about individual behavior in various situations. Table 1 presents the nineteen values of the refined theory and their respective definitions.

Table 1

19 values of the refined theory, defined in terms of their motivational goal

Value	Conceptual definition in terms of motivational goals
Self-direction-thought	Freedom to cultivate one's own ideas and abilities
Self-direction-action	Freedom to determine one's own actions
Stimulation	Excitement, novelty, and change
Hedonism	Pleasure and sensuous gratification
Achievement	Success according to social standards
Power-dominance	Power through exercising control over people
Power-resources	Power through control of material and social resources
Face	Maintaining one's public image and avoiding humiliation
Security personal	Safety in one's immediate environment
Security-societal	Safety and stability in the wider society
Tradition	Maintaining and preserving cultural, family, or religious traditions
Conformity-rules	Compliance with rules, laws, and formal obligations
Conformity-interpersonal	Avoidance of upsetting or harming other people
Humility	Recognizing one's insignificance in the larger scheme of things
Benevolence-dependability	Being a reliable and trustworthy member of the in-group
Benevolence-caring	Devotion to the welfare of in- group members
Universalism-concern	Commitment to equality, justice, and protection for all people
Universalism-nature	Preservation of the natural environment
Universalism-tolerance	Acceptance and understanding of those who are different from oneself

Source: Adapted from Schwartz et al. (2012)

Some studies have applied and complemented the perspectives of the theory of personal values (Schwartz and Butenko, 2014; Rudnev, Magun, & Schwartz, 2018; Lee et al., 2019). The results of these studies increase the explanatory power of the theory and reinforce the importance of the model in knowledge construction. In turn, other studies on consumer behavior regarding food have used the theory proposed by Schwartz (1992; 2017); therefore, some have shown coherence and applicability to academic and managerial areas. Additionally, they have identified motivations and consumption perceptions linked to personal values as well as the compatibility of the theory with other academic perspectives (Castro et al., 2019; Giovane da Silva, Vilas Boas, & Teodoro, 2022).

METHODOLOGY

This research is characterized as qualitative and descriptive. Data collection was conducted through interviews using the laddering technique. This interview technique is recommended in consumer behavior research as it is based on the assumptions of the means-end chain theory (Reynolds and Gutman, 1988). Laddering allows the interviewee to present associations corresponding to the attributes of a good or service, the consequences generated,

and subsequently the connections through higher levels of abstraction that demonstrate the values of the individual consumer (Reynolds and Gutman, 1988; Ikeda, Campomar, & Chamie, 2014).

Consumers of specialty coffees were prospected online from specific groups about specialty coffees on Facebook, profiles of specialty coffee shops, and professionals in the field of specialty coffees on Instagram. There was also face-to-face prospecting in a coffee shop in Guaçuí, Espírito Santo state, and another cafe in Lavras, Minas Gerais state.

The research involved 40 consumers, with 35 participating online and five participating in person. The online approach facilitated researchers' access to interviewees interested in participating in the research through video conferencing via Google Meet. The interviews were conducted after the participants filled out the Informed Consent Form and a sociodemographic questionnaire.

The interviews were recorded and transcribed in their entirety. To analyze the data, content analysis (Bardin, 2011) was used by reading the transcriptions, with the aim of identifying the attributes, consequences, and values that guide consumers' behavior, as well as their perceptions of food safety aspects and their respective interpretations.

FINDINGS AND DISCUSSION

Regarding the interviewed consumers, all of them drink at least one cup of coffee a day, do not consume commodity coffee, have a higher level of engagement with the consumption of specialty coffees, and reside in the states of Minas Gerais, Espírito Santo, Bahia, São Paulo, Goiás, Pará, Pernambuco, Rio de Janeiro, and Santa Catarina.

The sociodemographic profile of the 40 interviewed specialty coffee consumers was as follows: 52.5% were male, 47.5% were female, and the majority were aged between 22 and 32 years (47.5%). Regarding marital status, 50% of the interviewees were single, followed by married or in a stable union (45%). In terms of education, post-graduation was the predominant level (55%). As for monthly financial income, two income ranges were predominant: 1 to 3 minimum wages (45%) and 4 to 6 minimum wages (27.5%).

Regarding frequency of consumption, 45% of respondents consumed at least 3 to 4 cups of specialty coffee per day. Regarding the time since the last purchase, the vast majority of respondents (90%) had bought coffee in the last month. The average amount paid by consumers in the last purchase was R\$ 45.00 (500g). For 35% of respondents, specialty coffees are purchased through direct trade (acquisition made directly from the farmer) and, for 32.5%, specialty coffees are purchased in specialty coffee shops (commercial establishments specifically dedicated to specialty coffees).

A total of 45 elements were found among the attributes, consequences, and values related to the consumption of specialty coffees (Table 2) (Giovane da Silva, Vilas Boas, & Teodoro, 2022).

It is important to highlight that most specialty coffee consumers have previously consumed commodity coffee. According to the interviewees, the main reasons for switching to specialty coffee are the superior quality of specialty coffee compared to the questionable quality of mass-produced traditional coffees. Some studies have addressed this issue, demonstrating the importance of coffee bean quality and purity and how this aspect can influence consumer choices in seeking a healthy diet, bringing benefits to health and quality of life (Mendes et al., 2016).

Table 2

Attributes, consequences, and values associated with specialty coffee consumer

<i>Concrete attributes</i>	<i>Functional consequences</i>
Coffee beans	Allows a moment to pause
Origin	Allows preparation using different methods
Roast level	Allows the possibility to try other coffees
Packaging	Allows direct purchases from producers
Price	Allows positive or negative perceptions during purchases
Certifications and stamps	Allows the maintenance of habit/ritual of consumption
<i>Abstract attributes</i>	Serves as gifts to people
Aroma	Allows the identification of the producing region
Flavor	Provides knowledge of the history of coffee
Sensory notes	Allows faithfulness to a producer
	Provides knowledge and learning
	Allows improvements in palate
<i>Psychological consequences</i>	<i>Instrumental value</i>
I can concentrate, reflect and focus	I feel fairness and appreciation of the chain
I feel relaxed and stress free	I value being with people
I feel a sense of well-being	I have confidence when consuming
I care about the production chain	I seek pleasure all the time
I feel frustrated by false information	<i>Terminal Values*</i>
I feel that what I am drinking is safe	Universalism–concern: I relate to and belong to the universe of specialty coffees
	Tradition: Respect for family and cultural traditions
It is healthy	Personal security: I feel secure and confident when consuming
I feel that certification promotes quality	Self-directed action: I seek quality of life at all times
	Hedonism: I seek happiness in every moment
I can share experiences	Achievement: I can achieve my goals and objectives
I create life memories	*The terminal values were classified within the 19 human values identified by Schwartz (2017)
I feel that gourmet is an exaggeration	
I feel motivated by novelties	
I feel satisfied	
I am treated with honesty	

Source: Adapted from Giovane da Silva, Vilas Boas, & Teodoro (2022, p. 1722)

Some details involving the agents in the production chain are changing this scenario, such as the expansion of the supply of higher quality coffees, the efforts of sectors related to coffee cultivation in developing guidance procedures for producers to aim for better quality beans, investment in improving communication processes with the consumer, and the pursuit of consumer awareness regarding the need to improve food and health.

According to Giovane da Silva, Vilas Boas, and Teodoro (2022), the hierarchical value map (HVM) of the interviewed specialty coffee consumers presents relevant components in its structure that can provide information about food safety and traceability as behavior guidelines (Figure 1).

According to Giovane da Silva, Vilas Boas, and Teodoro (2022), it is possible to identify the lines and thickness that demonstrate the chains formed between elements A-C-V; the thicker the lines, the greater the relevance. The elements represented within the quadrants with thicker lines are those with a higher centrality index, indicating a higher recurrence among the findings in interviews with participating consumers in the research.

According to Reynolds and Gutman (1988), any representation of one of the chains in the HVM, analyzed from bottom to top, can be a potential dominant chain. Through the centrality index, it is possible to identify the categories that had the highest recurrence in its structure. Among the participating consumers, the abstract attribute 9, the functional consequences 12, 15, 20, and 21, the psychological consequences 24 and 30, the instrumental

values 37 and 39, and the terminal value 45 were the most relevant. In the HVM, it is also possible to observe the relationships that occur between these and other categories, that is, the branches that connect and depart from them.

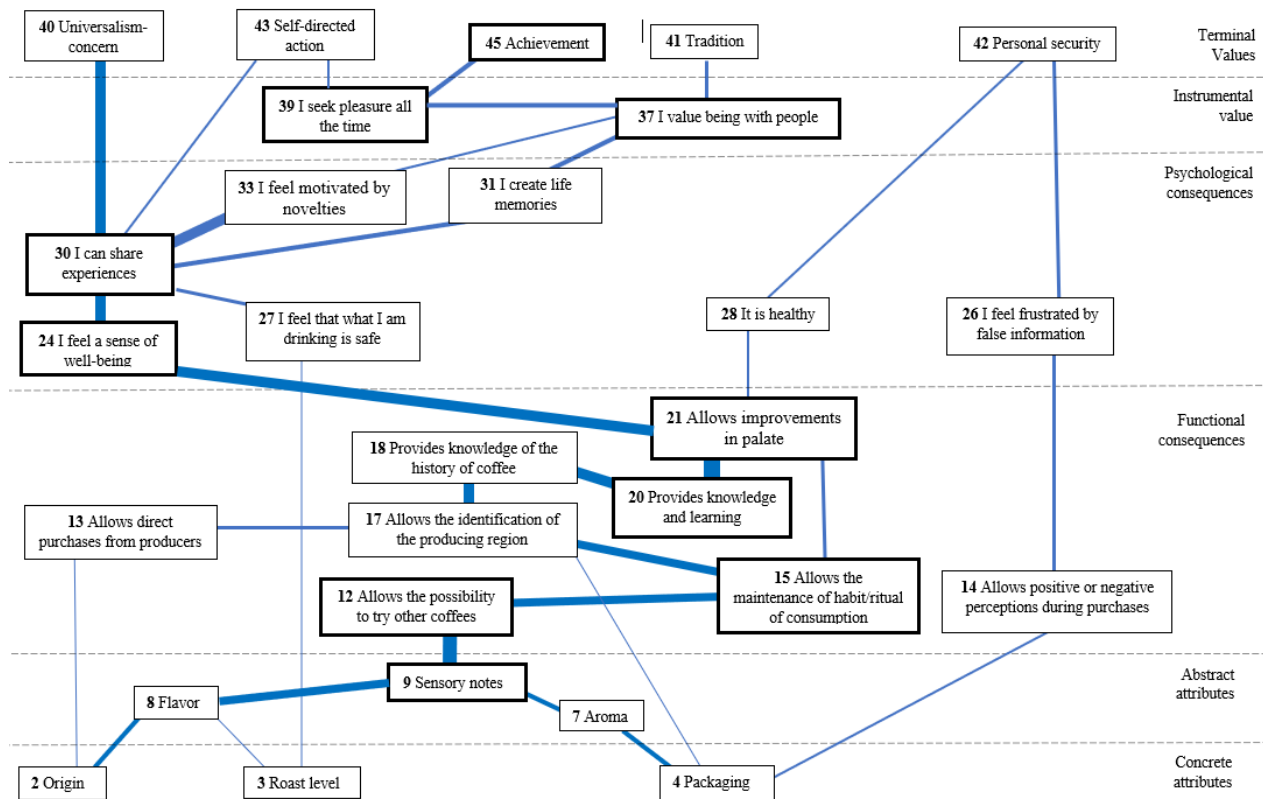


Figure 1. Hierarchical Value Map of specialty coffee consumers

Source: Adapted from Giovane da Silva, Vilas Boas, & Teodoro (2022, p. 1723)

Intending to describe the main chains that represent the motivation of consumers involving aspects of food safety and traceability, the terminal value 'Personal security' (42) stands out. To reach this final stage, consumers start from two chains represented in the MHV in Figure 1, both of which begin with the concrete attribute 'Packaging' (4), which in the first chain is associated with the functional consequence 'Allows positive or negative perceptions during purchases' (14), then relates to the psychological consequence 'I feel frustrated by false information' (26), reaching the terminal value 'Personal security' (42). Figure 2 presents a section of the MHV of Figure 1, allowing the analysis of this chain in the context of food safety.

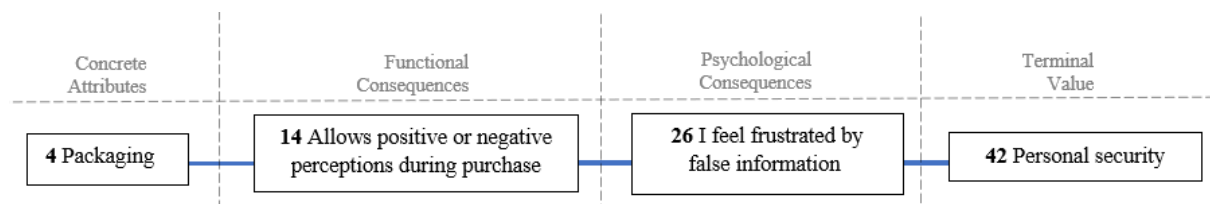


Figure 2. First dominant chain associated with the security value

Source: Adapted from Giovane da Silva, Vilas Boas, & Teodoro (2022, p. 1723)

The concrete attribute 'Packaging' (4) is responsible for promoting communication with the consumer at the time of purchase and should contain relevant information to prove that the food is a superior quality coffee. This situation can lead to positive perceptions when the packaging contains various pieces of information and includes an aroma valve. On the other hand, it can lead to negative perceptions when the packaging is violated, lacks the aroma valve, or provides only minimal information on its label. The consumer feels frustrated and may choose not to buy the product. At this stage, the consumer is concerned about their safety regarding the preservation of their health and prefers not to take the risk of consuming a potentially contaminated or adulterated food item with dubious characteristics that cannot be verified by the consumer.

The communication between the producer and coffee shop should be aligned with important requirements to guide the consumer in seeking the information they consider relevant to decide to purchase and consume specialty coffees. The interviewees discussed the feelings that arise from their consumption experiences over time, whether positive or negative, in different moments of life or in the presence of other people. This situation reflects the consumer's concern about feeling secure and trusting the information they have access to.

I know what I'm consuming, you know? Because today, some coffees claim to be special, but they're not. When it's good quality, you can tell what's there. I care about what I consume, just like with other foods, not just coffee. So, I know that there's real coffee in it, no chaff, no corn, no husk – it's been handled the way all food should be. – Interviewee 13.

First, I started consuming pure coffee, but it was still traditional coffee. I knew it had better quality, but it was still a darker roast. Then, I came across what I consider a "trendy" coffee, extremely fermented, and I was a bit fascinated by these super different coffees. But then I started to have negative experiences with that, with heavily fermented coffees. Curious people with little experience, making fermented coffees in an inappropriate way, waiting for this processing recipe. And I had a lot of problems with headaches, nausea, diarrhea, because I had a lot of very fermented special coffees – Interviewee 34.

In this first chain, it is evident that personal security is a personal value that guides the consumer's behavior with the expectation of not being deceived regarding the information available about the food, whether at the time of purchase or when preparing and consuming the beverage. This perception is related to the distrust that the food may pose some health risks. In the search for higher quality foods that can contribute to a healthier diet, meeting the food safety requirements, consumers report that the characteristics derived from specialty coffees are reasons to share their consumption experiences with others, aiming to highlight the quality difference between regular (commodity) coffee, which is considerably more commonly consumed among individuals in general.

Because, to me, food is everything [...] I pay a lot of attention to it. From the moment that the community as a whole starts placing more value on this, things can improve in terms of public health and everything else. This also applies to specialty coffee, with healthy beans, good roasting, preparation methods – all of these factors contribute to having a better end product for you to consume, for you all to ingest – Interviewee 35.

That's right, because when something is good, you want to share it with others, with our family, with our friends. The thing with specialty coffee is that it's a quality product that only brings benefits, and we want other people to know about it and stop consuming that coffee that will only harm their health. Awful coffee – Interviewee 17.

Specialty coffee consumers, at some point, also consumed traditional coffees. However, with the development of the specialty coffee market niche, they discovered the attribute of quality, realizing the relationships regarding food safety issues, which can be verified through the attributes of specialty coffees and the consequences arising from their consumption. In this sense, consumers feel confident

when their needs and demands are met and they cooperate by sharing their experiences, contributing to market development and encouraging others to become consumers.

The second chain starts with the attribute 'Packaging' (4) and relates to the functional consequence 'Allows the identification of the producing region' (17), which has an indirect relationship with the concrete attribute 'Origin' (2). The chain continues with the consequence 'Provides knowledge of the history of the coffee' (18). Thus, there are indications that the links constituting this chain are related to traceability, which becomes a motivating factor for the consumption of specialty coffees. Consumers believe that they gain more knowledge and learning, improving their palate, which is associated with the psychological consequence 'It is healthy' (28), ending in the terminal value 'Personal security' (42). Figure 3 represents another section of the HVM, i.e., the second dominant chain formed by elements 04-17-18-20-21-28-42, which reflects on the terminal value of security.

This chain has direct and indirect associations with two functional consequences, 'Provides knowledge and learning' (20) and 'Allows improvements palate' (21), with relevant centrality indexes, meaning they have higher recurrence among the elements mentioned by the interviewees, within the entire structure of the chain. Following that, it is associated with the psychological consequence 'It is healthy' (28). This perception demonstrates how specialty coffee consumers care about an important factor in food consumption, ensuring that the consumption of the beverage will not bring harm to their health. Consumers seek benefits for a healthier life, and consuming specialty coffees is linked to this practice.

I imagine that just by knowing more about the product, knowing that it is made with more care, where it comes from, and understanding the roasting level for preserving acids and sugars without harmful oil extraction, I believe it is indeed beneficial for health – Interviewee 21.

Up until four years ago, I consumed store-bought coffee 100% of the time. However, in 2012, I started drinking specialty coffee, and I never looked back. From that point on, I eliminated sugar from my diet, which used to be the largest source of sugar consumption for my family, mainly for sweetening coffee. Our sugar consumption has dropped by a quarter of what it used to be. This change was not only related to health concerns but also resulted in me losing four and a half kilograms when I removed sugar from my diet – Interviewee 10.

Specialty coffee consumers aim to achieve the terminal value of security, especially when the identified characteristics involve the moment of purchase. For this reason, packaging is an extremely important attribute, as it should contain information about the origin region and the producer, validating the traceability of the product. It allows consumers to check the date and roasting level of the coffee beans and to smell the aroma, enabling more experienced consumers to assess the product's quality perception.

Furthermore, the packaging indicates whether the coffee has certifications, which can reinforce aspects of production, marketing, and product quality. Points of sale can also influence the consumer's perception of safety by validating information without the need for certification or detailed information on the packaging. These findings corroborate the work of Ratton and Spers (2020) in their analysis of specialty coffees with certifications.

The results also reinforce the arguments of Guimarães et al. (2018), that consumers value safety attributes (the food is free of pesticides) and traceability to identify the region and who produced it. For consumers, the perception of higher-quality specialty coffees is also linked to the appreciation of agents in the production chain who seek to maintain a fair and sustainable relationship with each other.

Based on the analysis of the data, it is possible to identify how consumers' consumption experiences can lead to perceptions that strengthen the value of personal security, especially regarding the belief that the food has aspects promoting a healthier diet. Consumers can make these associations through the product's attributes and the belief that specialty coffees are of superior

quality. Therefore, the value of personal security can be linked to food safety aspects, particularly in relation to origin (traceability). Consumers stated feeling secure and confident when consuming specialty coffees because they can verify the necessary information individually or through agents involved in the specialty coffee production chain.

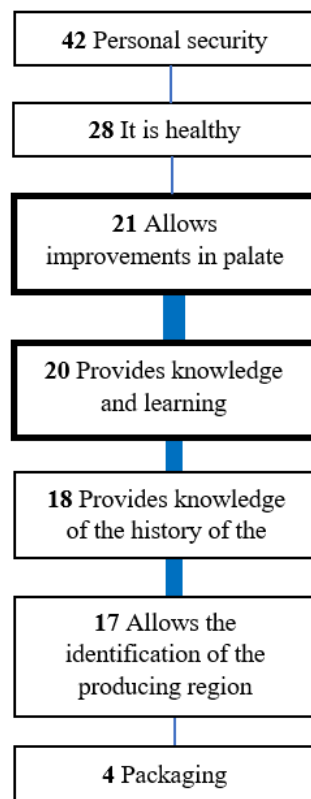


Figure 3. Second dominant chain associated with the security value
Source: Adapted from Giovane da Silva, Vilas Boas, & Teodoro (2022, p. 1723)

The traceability of specialty coffees is a specific attribute that makes it different from traditional coffee. In this sense, investment in the production chain in new technologies, such as the Blockchain system, which allows access to information about production and producer, grain and beverage characteristics, and food safety, can promote an even more assertive relationship with consumers, as pointed out by Smith (2018).

Regarding the specialty coffee market niche, consumers are concerned about the relationships that occur between the players in the production chain. These relationships are important to sustain the connection between the producer, coffee shop, and consumer, promoting social and financial sustainability, mainly due to the appreciation of fairness and the practice of just values for all involved. It is evident that the specialty coffee market still has significant potential to grow sustainably and provide commodity coffee consumers with access to higher-quality products, assisting in the pursuit of healthier food consumption habits.

CONCLUSIONS

This research aimed to identify the importance of aspects of food safety and traceability in the behavior of consumers of specialty coffees based on Gutman's (1982) means-end chain theory and Schwartz's (2017) human values. The results showed that food safety and traceability are crucial in the decision-making of specialty coffee consumers, helping to understand their buying behavior.

As can be seen in the structure of Figure 2 and Figure 3, extracted from the MHV represented in Figure 1, the chains formed by these elements express the structure that best represents the consumption behavior motivated by the final states desired by consumers. It is noticed that the chains

always start through a concrete attribute, with emphasis on the attribute 'Origin' and 'Packaging'. These two attributes are important links in the context of coffee consumption, as they help the consumer to identify the sensory characteristics and information about the producer, in addition to bringing information regarding food safety and product traceability (contained on the packaging).

The research was able to identify how food safety and traceability aspects can influence the consumption of specialty coffees, showing that product attributes such as packaging, origin, certifications, and aroma should meet consumers' minimum desired conditions, evoking sensations like feeling that they are consuming food safely, promoting health benefits, and making consumers feel secure and confident in consuming the product.

Consumers are aware of feelings of security in two ways. The first comes from those who are apprehensive about product information and like to verify and validate information for themselves. The second situation is the trust and credibility deposited by consumers in specialized coffee shops or directly in rural producers, which occurs mainly when buying specialty coffees.

The managerial implications of the research revolve around the importance of building a strong relationship with consumers. For example, through marketing activities such as product advertising on social media platforms (Instagram and Facebook) with information associated with the identified personal values. Additionally, producers and sellers of the product should pay attention to the packaging, giving preference to those with aroma valves, and providing information about origin, date and level of roasting, processing method, sensory notes, and certification stamps, allowing consumers to validate them and consequently make the purchase.

At this point, it becomes essential to develop effective communication with consumers to strengthen the attributes related to food safety, highlighting the superior quality of specialty coffees, emphasizing their specificities, and offering the option of feedback from consumers of the beverage. It is believed that these actions can reach individuals who continue consuming commodity coffee.

Regarding the limitations of the study, it is recommended to employ a broader approach with a larger sample of consumers, especially from one or more states in Brazil and even from other countries with a high potential for consuming the product. It is assumed that a quantitative approach could reveal more consumption characteristics or detect different attributes that may confirm the consumers' cognitive structure to a greater extent, as well as stimulate further discussion on the aspects of food safety and traceability of specialty coffees initiated by this study.

Research ethics statement

This article is the authors' own original work, which has not been previously published elsewhere.

Author contribution statement

Giovane da Silva, M.: Conceptualization; Literature review; Data collection and curation; Formal analysis; Writing – original draft.

Campos, R. C. L.: Writing – review & editing; Translation; Manuscript preparation.

Vilas Boas, L. H. B.: Conceptualization; Supervision; Writing – review & editing; Approval of the final version.

Funding

This study was financed in part by the Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES) – Finance Code 001

Disclosure statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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CBR - Consumer Behavior Review, Recife, v. 9, 1-15, 2025. Universidade Federal de Pernambuco.
ISSN 2526-7884. DOI: <https://doi.org/10.51359/2526-7884.2025.265486>

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