



Consumer Evaluation of Espresso Drinks Using Anaerobic Processed Arabica Coffee Beans at Kopi Kita 789

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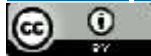
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ABSTRACT

This study examines consumer perceptions of the full arabica anaerobic espresso process at Kopi Kita 789, which adopted this method after observing increased sales. Using a quantitative descriptive approach with questionnaires, interviews, and documentation, data were collected from 70 respondents. The assessment focused on five indicators: aroma, acidity, body, aftertaste, and flavor. Results showed an overall average score of 3.59, indicating that consumers generally liked the product. These findings suggest that the full arabica anaerobic process positively influences customer preferences. The study is expected to support Kopi Kita 789 in evaluating, maintaining, and enhancing the quality of its espresso offerings to remain competitive and meet consumer expectations.

INTRODUCTION

Arabica coffee (*Coffea arabica*) remains the most widely cultivated and consumed coffee species in the world, accounting for approximately 60–70% of global coffee production. Its dominance in the coffee market is attributed to its superior quality, characterized by a nuanced flavor profile, balanced acidity, and a rich aromatic complexity that appeals to discerning coffee drinkers. Unlike *Coffea canephora* (commonly known as Robusta), which tends to be more bitter, astringent, and earthy, Arabica beans offer diverse sensory notes ranging from floral and fruity to chocolaty and nutty, depending on terroir and post-harvest processing methods. Historically, wild Arabica plants were first identified in the highlands of Ethiopia, where a local legend tells of a goat herder named Kaldi who noticed his goats becoming unusually energetic after consuming red coffee cherries. Despite these early origins, the first documented cultivation of Arabica coffee occurred in Yemen, where it became an integral part of Islamic culture and trade, spreading from the Arabian Peninsula to Europe and eventually to tropical regions across the globe. The beans were referred to as “bunn” in Arabic and “buna” in the Oromo language of Ethiopia, both terms still used today in regional dialects and coffee ceremonies.

Arabica coffee cultivation, however, is not without its challenges. The species is highly susceptible to pests and diseases such as coffee leaf rust (*Hemileia vastatrix*) and requires specific growing conditions, typically at higher altitudes with cool, stable temperatures, rich volcanic soil, and adequate rainfall. As such, Arabica farming is labor-intensive and climate-sensitive, making it vulnerable to the impacts of global warming. This vulnerability has prompted research into more resilient varieties and sustainable farming practices to preserve the integrity of Arabica crops. Economically, Arabica coffee is a major export commodity for many developing countries, playing a crucial role in rural livelihoods, employment, and national economies—particularly in countries such as Brazil, Colombia, Ethiopia, and Guatemala.

Culturally, Arabica coffee holds a profound significance that extends beyond its agricultural and economic value, serving as a symbol of heritage, social connection, and artisanal expression. In regions such as Ethiopia, often regarded as the birthplace of Arabica, coffee is deeply woven into the fabric of daily life through traditional ceremonies that emphasize hospitality, respect, and communal interaction. Globally, Arabica has come to represent the pinnacle of coffee quality, particularly within the specialty coffee movement, where emphasis is placed on origin, processing methods, and ethical sourcing.

This elevated status has driven innovation throughout the entire coffee value chain. Producers experiment with advanced fermentation techniques like anaerobic fermentation and carbonic maceration to develop unique flavor profiles, while roasters and baristas utilize precise brewing methods such as pour-over, AeroPress, or siphon to highlight the subtle characteristics of each batch. Moreover, micro-lot sourcing and direct trade relationships have strengthened the transparency and traceability of Arabica coffee, aligning it with values of sustainability and fairness. As global coffee culture continues to

mature, Arabica remains central not just for its refined taste, but for the narratives and identities it carries with each cup.

The finest Arabica coffee is defined by its ability to deliver a high-quality sensory experience when brewed. Globally, some of the most renowned Arabica coffee beans originate from countries such as Colombia, Ethiopia, and Guatemala, which are widely recognized for their consistent excellence in coffee cultivation. Indonesia is no exception its Arabica beans from regions like Sumatra, Java, and Bali are highly esteemed and in demand among international markets. The appeal of Arabica coffee lies in its ability to meet the expectations of coffee enthusiasts, prompting a deeper appreciation and curiosity about what makes a single cup so enjoyable. This experience is the result of a collaborative chain of expertise: from skilled baristas who craft each cup, to master roasters who develop the beans' flavor profiles, and dedicated local farmers who meticulously cultivate the coffee plants.

The geographical characteristics and rich soil nutrients of the growing regions significantly influence the unique flavor attributes of Arabica coffee, contributing to its distinct identity and premium quality (Mustika, 2022). These environmental factors such as altitude, rainfall, sunlight, and volcanic soil—play a crucial role in shaping the acidity, aroma, body, and aftertaste that define Arabica beans. As the specialty coffee movement continues to expand globally, there is a growing emphasis on transparency and traceability, allowing consumers to better understand the origin of their coffee and the people behind its production. This trend not only enhances appreciation for artisanal coffee but also drives innovation and sustainability throughout the supply chain. Arabica coffee, therefore, is not merely a beverage but a cultural product deeply embedded in tradition, craftsmanship, and a shared global passion.

In the coffee industry, one of the most crucial stages is post-harvest processing, which takes place after the coffee cherries have been harvested. Only fully ripe cherries are selected to ensure optimal quality. Once harvested, the cherries undergo a series of steps beginning with the removal of their outer skin, followed by drying. This entire sequence of activities is collectively known as post-harvest processing. There are several widely practiced methods of post-harvest processing, each of which significantly influences the final flavor profile of the coffee.

The most common methods include the wet process (also known as full washed), the wet hulling process (semi-washed or wet hulled), the dry process (natural or dry method), and pulped natural, often referred to as the honey process. In addition to these traditional techniques, a more recent innovation in specialty coffee production involves the use of fermentation-based post-harvest processing, particularly anaerobic fermentation. This method involves fermenting the coffee cherries in an oxygen-free environment, allowing for the development of unique and complex flavor characteristics. Each of these processes contributes distinctly to the sensory attributes of the final cup, making post-harvest processing a critical factor in quality coffee production.

In the anaerobic fermentation process, coffee cherries are placed in airtight, sealed tanks where oxygen is intentionally removed to create an

anaerobic (oxygen-free) environment. This process can involve either pulped cherries—where the outer skin and part of the mucilage have been removed—or whole, unpulped cherries, depending on the desired fermentation profile. Once inside the tank, the cherries are submerged and left to ferment under carefully regulated conditions of time and temperature. During this stage, naturally occurring microorganisms, such as yeasts and bacteria, break down the remaining mucilage and initiate biochemical transformations that significantly influence the coffee's flavor complexity. Unlike traditional processing methods, which rely on natural air exposure or washing techniques, anaerobic fermentation encourages the development of more vibrant, fruit-forward, and nuanced flavor notes. As such, it has become a cutting-edge technique in specialty coffee production, offering unique sensory experiences and expanding the possibilities of flavor articulation in coffee.

One local coffee establishment that has adopted this method is Kopi Kita 789. Preliminary observations and interviews at the café reveal a noticeable increase in consumer interest and sales following the introduction of espresso made with anaerobically fermented Arabica beans. Given this positive market response, it becomes compelling to explore how consumers evaluate espresso made from coffee beans processed through anaerobic fermentation, especially since espresso serves as the foundational component for many coffee-based beverages offered at Kopi Kita 789. This research seeks to understand the sensory experience and perception that drive consumer preferences for this unique fermentation technique.

LITERATURE REVIEW

According to Rosmawati (2018), the term consumer literally refers to the opposite of a producer—namely, any individual who utilizes goods or services. Similarly, Dewi et al. (as cited in Saputra et al., 2017) define a consumer as someone who uses marketed products or services. Based on these definitions, it can be concluded that a consumer is any individual who acquires goods or utilizes services offered by others for a specific purpose. Consumer evaluation, according to Tjiptono (as cited in Tamonsang & Amalia, 2021), is described as the emotional connection that develops between the customer and the producer following the consumption of a product or service. Meanwhile, Wijaya and Megawati (2011) argue that consumer evaluation is a process employed to help businesses identify which customer segments to target in order to optimize profits. In summary, consumer evaluation is a judgment process conducted either before or after the use of a product or service, which assists producers in targeting customers more effectively and maximizing profitability.

The consumer assessment of espresso made from full Arabica beans using anaerobic processing at Kopi Kita 789 was measured using five key indicators adapted from Penggabean (as cited in Diwanggoro, 2016). These indicators include: aroma, which involves identifying distinct scent profiles such as earthy, spicy, floral, or nutty; acidity, referring to the perceived sourness on the palate, categorized into low, medium, and high; body, which describes the mouthfeel of the coffee—light-bodied coffees feel smooth and light, while full-bodied ones feel rich and heavy; aftertaste, representing the

lingering flavor left in the mouth after drinking, with longer aftertaste indicating more complex flavor retention; and flavour, which refers to the specific taste notes detected in the coffee such as cocoa, citrus, or fruity elements. These five indicators collectively provide a comprehensive evaluation of the sensory experience associated with the coffee.

METHODOLOGY

This study employs a quantitative descriptive research method to systematically illustrate consumer assessments of products, particularly those related to espresso made from anaerobic-processed Arabica coffee beans. As defined by Arikunto (2019), quantitative research involves the use of numerical data in the processes of data collection, analysis, and result presentation, making it suitable for studies aiming to quantify perceptions and opinions. The target population in this study comprises all customers visiting Kopi Kita 789, with an average daily footfall of approximately 200 individuals. To ensure representativeness, a random sampling technique was utilized, in line with Riyanto's (2020) assertion that random sampling provides each member of the population an equal opportunity to be selected, thus minimizing selection bias.

To determine the appropriate number of participants, the Slovin formula was applied using a 10% margin of error, resulting in a calculated sample size of 66.66. This figure was rounded up to 70 respondents to facilitate a more manageable and statistically sound analysis. The chosen sample size is considered sufficient to capture the general consumer perspective, allowing for the formulation of conclusions regarding product evaluation that can be generalized to the broader customer base of Kopi Kita 789.

RESEARCH RESULTS

To determine consumer assessment of anaerobic full Arabica espresso at Kopi Kita 789, five indicators according to Penggabean (in the journal *Elan Diwangkoro* 2016;10-12) were used, as follows:

1. Aroma
2. Acidity
3. Body
4. Aftertaste
5. Flavor

The following is a summary of the questionnaire results regarding consumer evaluations of the full Arabica anaerobic espresso at Kopi Kita 789, as shown in Table 1

Table 1. Summary of Consumer Evaluation Dimensions

No.	Evaluation Dimension	Average Dimension	Notes
1	Aroma	3.41	Agree
2	Acidity	3.44	Agree
3	Body	44	Agree
4	After Taste	3.45	Agree
5	FlavouR	3.65	Agree

Total Mean Score of All Indicators	3.59	Agree
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Source: Processed Primary Data

Table 1 summarizes consumer evaluations of espresso made from anaerobic-processed Arabica coffee beans across five sensory dimensions: aroma, acidity, body, after taste, and flavor. All dimensions received average scores within the "agree" category, indicating positive consumer perceptions. The highest rating was for flavor (3.65), suggesting consumers particularly appreciate the unique taste profile, while the lowest was aroma (3.41). The overall average score of 3.59 further confirms general consumer agreement with the quality attributes of the product. Notably, there is a typographical error in the "Body" score, listed as 44, which should be corrected for accurate interpretation.

DISCUSSION

Referring to Table 1 above, the results of the questionnaire on consumer assessment dimensions of anaerobic process full arabica espresso at Kopi Kita 789 are summarized in five dimensions along with the average value of each indicator. The results of the analysis of each consumer assessment dimension are presented as follows:

1. Aroma

The aroma indicator was measured using the statement: "Espresso from full Arabica anaerobic process has a distinctive aroma," which received an average score of 3.41, placing it within the "agree" category. This suggests that most respondents acknowledge and appreciate the unique aroma profile of espresso derived from anaerobically processed full Arabica beans. Typically characterized by fruity, floral, and sweet aromatic notes, this aroma is a result of the specific fermentation process that enhances the complexity of volatile compounds in the coffee. The perception of a distinctive aroma plays a crucial role in influencing consumers' initial impressions, as aroma is the first sensory experience encountered before tasting. A positive aroma not only reflects quality but also increases consumer curiosity and satisfaction, ultimately contributing to repeat purchases and brand loyalty.

2. Acidity

The acidity indicator was evaluated using the statement: "Espresso made from full Arabica anaerobic process coffee has the right acidity level," which obtained an average score of 3.44, placing it in the "agree" category. This result indicates that respondents generally perceive the acidity level of this espresso as appropriate and balanced. In specialty coffee, acidity is a valued characteristic that contributes to the overall flavor complexity. However, excessive acidity can lead to an unpleasant sharpness, while insufficient acidity may render the taste flat. The findings suggest that the anaerobic fermentation process applied to the full Arabica beans has successfully moderated the acidity, creating a harmonious cup profile that is palatable and accessible to a broad range of consumers. The agreeable acidity level enhances the sensory experience without overwhelming

the palate, making the espresso suitable for both novice and experienced coffee drinkers.

3. Body

The body indicator was assessed using the statement: "Espresso made from full Arabica anaerobic process coffee has a bolder body," which received an average score of 4.00, placing it within the "agree" category. This outcome suggests that respondents positively perceive the body of the espresso as bold and full, aligning with the expected characteristics of high-quality Arabica beans processed through anaerobic fermentation. In coffee sensory analysis, body refers to the tactile feeling or mouthfeel of the coffee when sipped – ranging from light and watery to thick and creamy. A bolder body is often associated with richness and a lingering presence on the palate, offering a more intense and satisfying coffee experience. The favorable perception of the espresso's body indicates that the anaerobic processing technique effectively enhances this attribute, contributing to a more robust and enjoyable cup profile that resonates well with consumer expectations.

4. After taste

The aftertaste indicator was measured using the statement: "Espresso made from anaerobic processed full Arabica coffee has a pleasant aftertaste," which received an average score of 3.45, placing it within the "agree" category. This result indicates that respondents positively perceive the lingering flavor left in the mouth after consuming the espresso as enjoyable. In coffee tasting, aftertaste refers to the flavor that remains on the palate after the coffee has been swallowed often revealing more complex notes than the initial sip. A pleasant and lasting aftertaste is a hallmark of well-processed specialty coffee, especially those using innovative methods such as anaerobic fermentation. The agreement among respondents suggests that the espresso retains a harmonious and appealing finish, further enhancing the overall sensory experience. This finding highlights the effectiveness of anaerobic processing in preserving and enhancing flavor complexity, ultimately contributing to consumer satisfaction.

5. Flavor

The flavour indicator was measured using the statement: "Espresso made from anaerobic-processed full Arabica coffee has a distinctive flavor," which obtained an average score of 3.65, placing it in the "agree" category. This suggests that respondents acknowledge and appreciate the unique and pronounced flavor profile produced by the anaerobic fermentation method. The espresso is perceived to carry rich dark chocolate notes combined with a hint of caramel, creating a complex and enjoyable taste experience. Such flavor characteristics are often sought after by coffee enthusiasts and are indicative of high-quality beans processed with careful attention. The agreement among respondents underscores the sensory appeal of anaerobic-processed Arabica coffee, where controlled fermentation enhances the development of distinctive and memorable flavor notes that contribute to the coffee's overall excellence.

Based on the findings, the overall mean score across all indicators within the consumer assessment dimension for espresso made from anaerobic-processed Arabica coffee beans at Kopi Kita 789 is 3.59, placing it within the

“agree” category. This result suggests that consumers generally agree with the evaluation of each sensory attribute associated with the espresso served at Kopi Kita 789. Among the five dimensions assessed, the “body” dimension received the highest score (4.00), indicating a strong agreement that the espresso possesses a bold and satisfying mouthfeel, which contributes to a richer overall experience. Conversely, the “aroma” dimension received the lowest score (3.41), though it still falls within the “agree” category, implying that while the aroma is perceived as distinctive, it may be less impactful compared to other attributes.

These findings reflect that the anaerobic fermentation process used for Arabica coffee beans contributes to a positive sensory perception across key quality indicators. The consistently favorable scores suggest that the method of processing enhances the espresso's overall appeal, particularly in terms of its flavor profile and body. Furthermore, this supports the idea that innovative post-harvest techniques, such as anaerobic fermentation, can increase consumer satisfaction and potentially drive repeat visits. As Kopi Kita 789 continues to implement such techniques, they may strengthen their position in the specialty coffee market by delivering a unique product that meets consumer expectations for quality and distinctiveness.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on the results of the data analysis, it can be concluded that consumer assessment of espresso drinks using anaerobic processed Arabica coffee beans at Kopi Kita 789 agrees with each of the indicators. This can be seen from the overall questionnaire results, which received a score of 3.59, falling into the “agree” category. The “body” indicator received the highest average score of 4, which can be categorized as “agree,” followed by the “flavor” indicator with an average score of 3.65, which can be categorized as “agree” or “like,” and the ‘aftertaste’ indicator with an average score of 3.45, which falls into the “agree” category. the acidity indicator with an average score not far from the aftertaste indicator, 3.44, which falls into the “agree” category, and the aroma indicator with the lowest average score, 3.41, which also falls into the “agree” category.

Recommendations

Based on the conclusions regarding consumer evaluations of espresso made with anaerobic-processed Arabica coffee beans using the five indicators and the comments in the research questionnaire, the recommendation is to further optimize the calibration in espresso production so that this full Arabica anaerobic-processed espresso can fully release its flavor.

ADVANCED RESEARCH

This study has not yet taken into account external factors that may influence consumer evaluations, such as the brewing method, barista skills, or the ambiance of the coffee shop. Therefore, future research is encouraged to integrate these variables in order to gain a more comprehensive understanding of the complex relationship between product quality and consumer satisfaction.

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