

Perceptual Segmentation and Preference Polarization: A Cognitive Approach to Price–Quality Positioning in the Algerian Sauce Market

التجزئة الإدراكية واستقطاب التفضيلات الاستهلاكية: مقارنة معرفية لتموضع السعر والجودة
في سوق الصلصات بالجزائر

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Abstract:

This study investigates consumers' perceptual and cognitive dynamics in the sauce and condiment market by jointly examining aided brand awareness, price perception, and perceived quality. Drawing on original survey data and an integrative analytical framework, the results reveal a strongly polarized competitive structure. LESIEUR is consistently associated with a premium positioning supported by price-based quality signaling, whereas FLEURIAL occupies a position of controlled price neutrality that stabilizes consumer expectations. The joint analysis of price and quality perceptions highlights the existence of a perceptual gradient that structures cognitive trade-offs and purchase decisions. This gradient contributes to both brand differentiation and consumer loyalty by anchoring evaluations within coherent price–quality schemas. Beyond descriptive evidence, the findings allow for the conceptual modeling of interactions between brand awareness, price perception, and perceived quality, providing strategic insights into cognitive segmentation and marketing policy optimization. Overall, the article contributes to a finer understanding of how perceptual structures shape competition in polarized markets and identifies durable levers of differentiation grounded in consumer cognition.

Keywords: consumer perception; price–quality positioning; aided brand awareness; perceptual gradient; cognitive differentiation; polarized markets.

JEL Classification Codes: D12, M31, L11

ملخص:

تهدف هذه الدراسة إلى تحليل البنى الإدراكية والمعرفية التي تحكم سلوك المستهلك في سوق الصلصات والمواد المنكهة، من خلال الربط بين الوعي بالعلامة التجارية (المدعوم)، وإدراك السعر، وتقييم الجودة المتصورة. وباعتماد على بيانات ميدانية أصلية ومقارنة تحليلية تكاملية، تكشف النتائج عن بنية تنافسية شديدة الاستقطاب، تتمايز فيها العلامات التجارية وفق منطق إدراكي واضح. تُظهر النتائج أن علامة *LESIEUR* تتموضع ضمن مجال إدراكي ذي طابع متميز، حيث يعمل السعر المرتفع كإشارة نوعية داعمة لموقعها الممتاز، في حين تعتمد *FLEURIAL* استراتيجية حياد سعري مضبوط تُسهّم في استقرار التوقعات وتقليل عدم اليقين لدى المستهلك. ويبرز التحليل المشترك لإدراك السعر والجودة وجود تدرّج إدراكي منظم لعمليات المفاضلة الذهنية والاختيار، بما يعزز التمايز ويُسهّم في ترسيخ الولاء. تتيح هذه النتائج نموذج التفاعل بين الوعي بالعلامة، والإشارات السعرية، والجودة المتصورة، وتقدّم إطاراً تفسيرياً لفهم آليات التقسيم المعرفي للمستهلكين في الأسواق المستقطبة. وتُسهّم الدراسة في تعميق الفهم التحليلي لكيفية تشكّل البنى الإدراكية ودورها في دعم استراتيجيات التموقع والتمايز المستدام.

الكلمات المفتاحية: إدراك المستهلك، تموضع السعر والجودة، الوعي المدعوم بالعلامة، التدرّج الإدراكي، التمايز المعرفي، الأسواق المستقطبة.

تصنيفات JEL: D12، M31، L11.

INTRODUCTION:

The sauces and condiments market has witnessed significant growth in contemporary food consumption patterns, particularly within emerging economies where urbanization and evolving domestic practices are reshaping household food habits. In Algeria, this market segment is characterized by a diversified offer, encompassing both local and international brands, standard products, and premium-positioned references. Understanding the mechanisms that structure consumer choices in such a competitive environment is central to marketing and consumer behavior research.

Prior literature demonstrates that purchase decisions do not rely solely on immediate economic considerations. Foundational works by Zeithaml (1988) and Monroe (2003) highlight that price functions as a cognitive signal closely linked to perceived quality and overall value assessment. This price–quality interplay is central to multi-attribute decision models, in which consumers evaluate multiple criteria simultaneously to reduce uncertainty and stabilize preferences (Bettman, 1998; Rao & Monroe, 1989). Importantly, these evaluations occur within specific social and domestic contexts. Household routines, repeated consumption practices, familiarity with certain product references, and collective decision-making processes play a critical role in shaping both brand loyalty and product hierarchy (Bettman, 1998). Empirical studies indicate that anchoring products within domestic routines fosters behavioral stability, even for low-involvement products, and reinforces cognitive familiarity that guides future consumption (Bloch et al., 1986; Hoyer et al., 2018; Broniarczyk & Griffin, 2014).

Within product lines, certain key references, often termed pivot products, act as cognitive anchors, facilitating consumer evaluation of the broader product assortment and enhancing perceived brand coherence (Spence, 1973; Kotler & Keller, 2016). These central products support the formation of relatively stable preferences and influence the adoption of new offerings, which depends more on direct experience, product trial, and promotional incentives than on brand awareness alone (Rao & Monroe, 1989; Bloch et al., 1986; Hoyer et al., 2018).

Despite a rich theoretical corpus on price–quality perception, psychographic segmentation, and new product adoption, several gaps remain. Most studies address these dimensions in isolation, without examining the cognitive dissociation between price and quality, the structuring effect of household routines, the role of pivot products, and collective family decision-making simultaneously. This fragmentation limits understanding of the mechanisms that shape loyalty, decision criteria hierarchies, and market polarization, particularly in socio-economic contexts such as Algeria.

To address these gaps, the present study proposes an integrative theoretical framework that jointly considers price–quality dissociation, household routines, pivot products, and family-based decision dynamics in a low-involvement food product market. By focusing on cognitive and perceptual factors rather than solely on demographic variables, this research seeks to illuminate how these interactions structure distinct cognitive segments and contribute to perceptual polarization.

Guided by the theoretical gaps identified, the central research question is formulated as follows:

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How do Algerian consumers structure their choices and loyalty in the sauces and condiments market through the interplay of price perception, quality perception, product frequency, pivot products, and household decision dynamics?

From this question, the study derives the following testable hypotheses:

H1 : Price–Quality Perception: Consumers are expected to perceive differences in price positioning (neutral vs. premium) as a cognitive signal influencing perceived product quality.

H2: Household Routines: The frequency of product consumption is hypothesized to positively correlate with integration into domestic routines, stabilizing consumption patterns.

H3: Pivot Products: Core products within a range are anticipated to structure consumer hierarchies and facilitate the adoption of new products.

H4: Family Decision-Making: Household preferences are expected to dominate over external marketing stimuli in influencing purchase decisions.

H5: Cognitive Segmentation: The interaction between price–quality perception, household routines, and pivot product usage is hypothesized to generate distinct cognitive segments and contribute to market polarization.

This study focuses on key brands present in the Algerian market, including FLEURIAL and LESIEUR, alongside other competitors such as DAILY SAUCE, ELA, NOOR, and STAR. Data were collected via a structured survey administered to a sample of 84 consumers between March and June 2025. Analytical procedures include univariate, cross-tabulated, and multivariate analyses using SPSS to rigorously assess perceptual structuring and statistical significance of the observed relationships.

This study contributes both theoretically and practically. Theoretically, it advances an integrative approach to understanding cognitive segmentation and perceptual polarization in a low-involvement market context. Practically, it offers insights into consumer decision-making logic and potential strategies for brand positioning and marketing interventions.

The article is organized as follows: Section 2 provides a comprehensive literature review situating the study within established theoretical frameworks and highlighting existing gaps. Section 3 details the research methodology, including sampling, survey design, and analytical techniques. Section 4 presents the results, structured around figures and tables that illustrate key patterns. Section 5 discusses findings in light of the literature, and Section 6 concludes with theoretical and managerial implications as well as avenues for future research.

1- Literature Review and Theoretical Framework

The study of consumer choice mechanisms in fast-moving consumer goods (FMCG) markets necessitates a rigorous understanding of the interplay between cognitive price perception, perceived quality, and multi-attribute decision-making processes. This triad forms the foundation of consumer behavior theory and has been extensively examined in both marketing and strategic management research. Yet, despite extensive study, the simultaneous integration of these dimensions, particularly within emerging markets such as Algeria, remains underexplored. This literature review synthesizes key insights, identifies critical gaps, and builds a coherent theoretical framework that supports the study's hypotheses (H1–H5).

1-1 Price Signals and Quality Perception: Cognitive Foundations

Price functions not merely as an economic metric but as a potent cognitive signal shaping consumer judgments of product quality and value. Seminal work by Spence (1973) established the theoretical foundation of signaling, demonstrating that consumers interpret price cues to infer quality in contexts of information asymmetry. Subsequent research confirmed that this mechanism is particularly salient for low-involvement products, where direct assessment of quality is limited (Monroe, 2003; Zeithaml, 1988). Bettman (1998) and Rao and Monroe (1989) extended this perspective, emphasizing that price, in combination with brand and store cues, forms a multi-attribute framework that stabilizes consumer preferences and guides repeat purchase behavior. Building on these insights, it is posited that consumers differentiate between products on the basis of cognitive dissociation between price and perceived quality, such that a neutral price positioning supports routine adoption, while premium pricing signals elevated quality expectations. This relationship underpins the first hypothesis, suggesting that perceptual price-quality dissociation directly shapes consumer evaluation hierarchies and market segmentation.

1-2 Household Routines and the Integration of Products

Price is more than a mere economic variable; it operates as a cognitive signal that informs consumers about product quality and reliability. Spence (1973) first conceptualized price as a signaling mechanism, and subsequent studies confirmed that this signal plays a critical role in guiding consumer judgment, particularly for low-involvement products where direct quality evaluation is limited (Monroe, 2003; Zeithaml, 1988). Bettman (1998) and Rao and Monroe (1989) extend this argument by emphasizing that price, in combination with brand and store cues, forms a multi-attribute framework that stabilizes consumer preferences and guides repeat purchase behavior. This framework provides the theoretical basis for understanding how price-quality dissociation can structure distinct cognitive segments in consumer markets.

1-3 redistribution Core Products and Perceptual Structuring

Certain products, designated as pivot or core products, serve as cognitive anchors within the consumer's repertoire. Spence (1973) and Kotler and Keller (2016) explain that these central items enable consumers to evaluate the broader product assortment, reduce uncertainty, and maintain perceived coherence of the brand. Bettman (1998) adds that pivot products establish a perceptual hierarchy that indirectly reinforces loyalty and recognition. This concept is critical for understanding how central references guide both routine purchases and the adoption of new products, shaping structured and stable cognitive segments.

1-4 Family Influence and Collective Decision Dynamics

Decision-making within households is not merely the aggregation of individual preferences but is mediated by social interactions and collective evaluation. Bettman (1998) and Rao and Monroe (1989) note that collective decisions alter the relative weighting of product attributes, influencing consumer choices and the adoption of new products. Warde (2005) and Moisander & Pesonen (2002) provide empirical support that family dynamics in MENA markets determine product prioritization and the salience of purchase criteria. Integrating the social dimension is therefore essential for capturing the formation and stabilization of cognitive structures in consumer behavior.

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1-5 Adoption of New Products and Experiential Evaluation

The adoption of novel products relies predominantly on direct experience and sensory evaluation. Bloch et al. (1986) and Hoyer et al. (2018) show that sampling and tasting interventions have a stronger influence on initial adoption than brand awareness, particularly for low-involvement products. Bettman (1998) and Rao and Monroe (1989) emphasize that these initial experiences form cognitive anchors that guide subsequent repetition and long-term loyalty. This insight underscores the importance of integrating experiential mechanisms into a multi-criteria analytical framework for consumer choice.

1-6 Cognitive Segmentation and Perceptual Polarization

Traditional psychographic segmentation often relies on observable sociodemographic characteristics, which may not capture underlying cognitive structures. Recent research suggests that perceptual cues, including price-quality dissociation, pivot products, and experiential evaluation, create independent cognitive segments (Spence, 1973; Bettman, 1998). These perceptual segments explain how markets polarize around competitive cores, where consumer loyalty and differentiation emerge from structured cognitive evaluations rather than symbolic or demographic factors alone. Acknowledging this mechanism allows for a more precise understanding of market structuring and the emergence of perceptual gradients.

Although prior studies document price signals, household routines, pivot products, and collective decision-making individually, few integrate these dimensions to analyze their interaction within emerging markets such as Algeria. In particular, the cognitive segmentation and perceptual polarization in the Algerian sauce and condiment market remain underexplored. This review highlights the necessity of a unified framework that incorporates price-quality dissociation, habitual consumption, pivot product influence, family-mediated decision processes, and experiential adoption. Such an integrated approach enables a comprehensive understanding of consumer behavior, the structuring of cognitive segments, and the drivers of market polarization.

2- Methodology:

3.1 Research Logic and Epistemological Positioning

This study adopts a pragmatic positivist approach, aimed not at producing abstract generalizations but at objectively mapping the perceptual structures that govern brand choice within the fast-moving consumer goods (FMCG) market. In line with established management research, the objective is not to test a heavy causal model, but to capture the cognitive trade-offs consumers perform among economic variables (price), symbolic attributes (brand image, awareness), and evaluative criteria (perceived quality).

This epistemological positioning aligns with literature indicating that, in markets with low technological differentiation, competition occurs primarily in the perceptual space rather than in objective product attributes (Aaker, 1996; Kapferer, 2012). It justifies the use of a structured quantitative survey designed specifically to measure perceptions, rather than relying on retrospective behavioral self-reports.

3-2 Justification of Field and Brand Selection

The selection of the sauces and condiments sector is based on three cumulative criteria:

- High purchase frequency;
- Moderate but recurring consumer involvement;
- Competition predominantly driven by signals of price, perceived quality, and brand image.

FLEURIAL and LESIEUR were chosen as central cases due to their differentiated positioning within the same industrial group (Cevital). This configuration allows the isolation of differences attributable strictly to marketing positioning and consumer perceptions, neutralizing production, logistics, and distribution effects. Inclusion of additional competitor brands (DAILY SAUCE, ELA, NOOR, STAR) expands the cognitive field analyzed and prevents a closed or auto-referential reading of the market.

3-3 Data Collection Instrument: Questionnaire Design

Data were collected using a structured questionnaire administered to consumers of sauces and condiments. The instrument was designed specifically to capture perceptual dimensions and cognitive criteria insufficiently addressed by existing standardized scales in this market.

The questionnaire comprises five sections:

- **Consumption Habits** : frequency and integration into domestic routines.
- **Decision-Making Context**: domestic decision structures, consumption by product type, role of the household, influence of advertising, and conditions for adopting new brands. This section reflects the collective and routine-driven nature of low-involvement food product decisions (Davis, 1976).
- **Choice Determinants**: sensitivity to communication, brand preference, and positioning of FLEURIAL and LESIEUR relative to competitors.
- **Price and Quality Perceptions**: assessed on a continuous -5 to $+5$ scale using willingness-to-pay for a standardized product (680 g jar of mayonnaise) and comparative evaluation of FLEURIAL and LESIEUR. This design is informed by signaling theory, where price functions as an informational cue when objective evaluation is costly or uncertain (Spence, 1973), and by empirical evidence linking perceived price to perceived quality (Rao & Monroe, 1989).
- **Hierarchy of Choice Criteria**: encompassing price, quality, brand image, certifications, innovation, availability, and packaging.

Items were formulated to be simple, direct, and non-suggestive to minimize interpretive bias and promote spontaneous cognitive responses. Certain questions were left optional to avoid generating artificial responses on less salient dimensions.

3.4 Measurement Scales and Analytical Justification

Price and quality were evaluated on a continuous -5 to $+5$ scale, capturing both direction and intensity of perceptions. This approach avoids central tendency compression commonly observed with classical Likert scales, making perceptual polarization readily observable and

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interpretable. The scale is particularly suitable for analyzing price and quality signaling, as demonstrated in the results where neutral, moderate, and premium positions emerge clearly.

3.5 Sample and Sampling Strategy

The target population consisted of adult consumers residing in Algeria, actively consuming sauces or condiments and participating in household purchase decisions. Data collection occurred between March and June 2025, a period representing typical consumption behavior unaffected by marked seasonal variation.

The final sample included 216 respondents, sufficient for robust descriptive and inferential statistical analyses, including chi-square tests, mean comparisons, and analysis of variance (ANOVA) (Hair et al., 2019). Sampling was purposive and voluntary, based on two inclusion criteria: effective consumption of sauces or condiments within the past six months, and declared involvement in household purchasing decisions. Response counts varied between 79 and 216 due to optional items. This strategy aligns with marketing research standards, emphasizing identification of stable behavioral structures rather than probabilistic representativeness (Hoyer et al., 2018).

3.6 Data Processing and Analysis

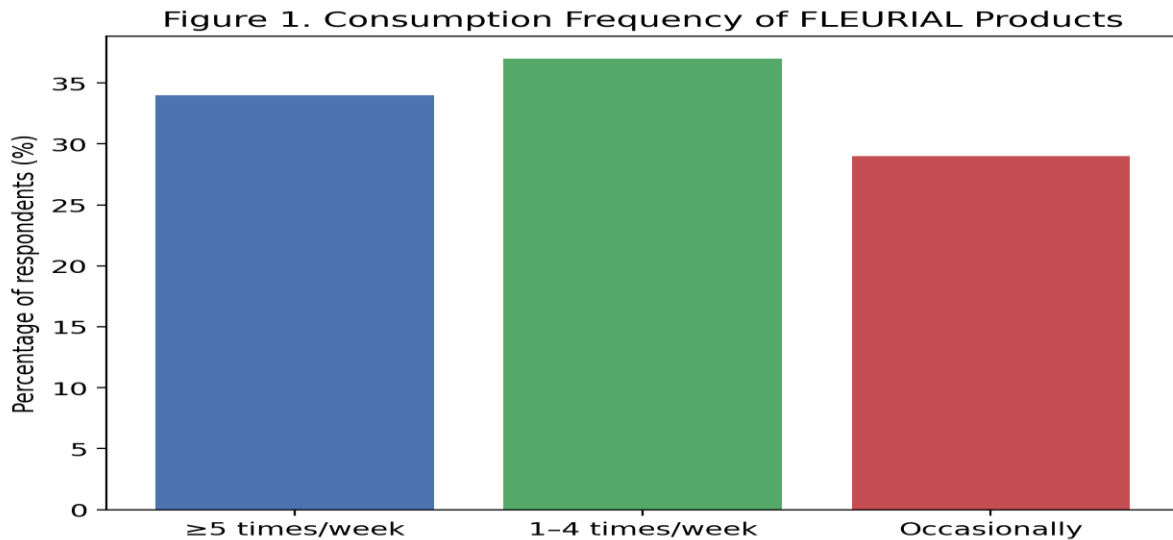
Data were processed using SPSS, enabling frequency distributions and cross-tabulations. Descriptive analyses characterized consumption behaviors and brand perceptions. Chi-square tests were used to examine relationships between categorical variables, while t-tests and ANOVA compared price and quality perceptions across brands and consumer subgroups. These analytical techniques comply with methodological standards for applied marketing research (Field, 2018; Hair et al., 2019).

3- Empirical results

This section presents the empirical findings of the study in a structured and sequential manner. Results are organized to reflect the logic of consumer behavior analysis, moving from observed consumption practices to decision-making criteria and perceptual evaluations of price and quality. Each subsection reports descriptive outcomes directly supported by the corresponding figures.

4-1 Consumption Frequency and Integration into Domestic Routines

To establish the degree to which FLEURIAL products are embedded in everyday consumption practices, consumption frequency was first examined. Figure 1 presents the distribution of reported consumption frequencies among surveyed households. The results indicate that consumption is predominantly regular. More than one-third of respondents (37%) report consuming FLEURIAL products at least once per week, while an additional 34% indicate very frequent consumption, defined as five times per week or more. In contrast, low-frequency or occasional consumption represents a relatively limited share of responses. These findings indicate that FLEURIAL products are not perceived as occasional or exceptional items, but rather as recurrent components of daily domestic food routines.

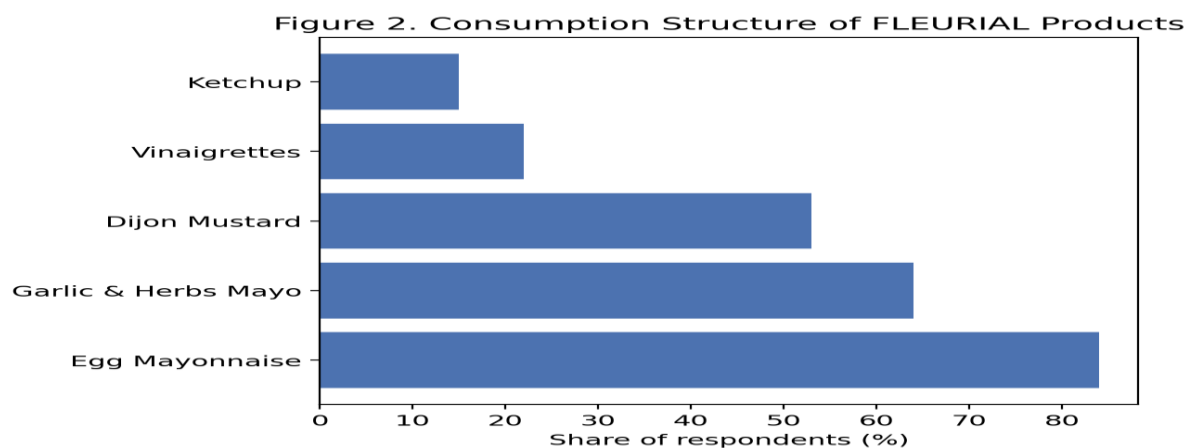


Source: Authors' elaboration based on survey data, 2025.

4.2. Consumption Structure and Identification of Core Products

Beyond frequency, understanding how consumption is distributed across product categories provides insight into the internal structure of household usage. Figure 2 illustrates the relative consumption levels of the main FLEURIAL products.

The results reveal a highly concentrated structure. Egg mayonnaise clearly dominates consumption, reported by 84% of respondents. It is followed by garlic and herbs mayonnaise (64%) and Dijon mustard (53%). Other products, such as vinaigrettes and ketchup, exhibit substantially lower consumption rates. This asymmetric distribution highlights the existence of a limited set of core products around which household consumption is organized, while other references occupy a complementary or peripheral role.



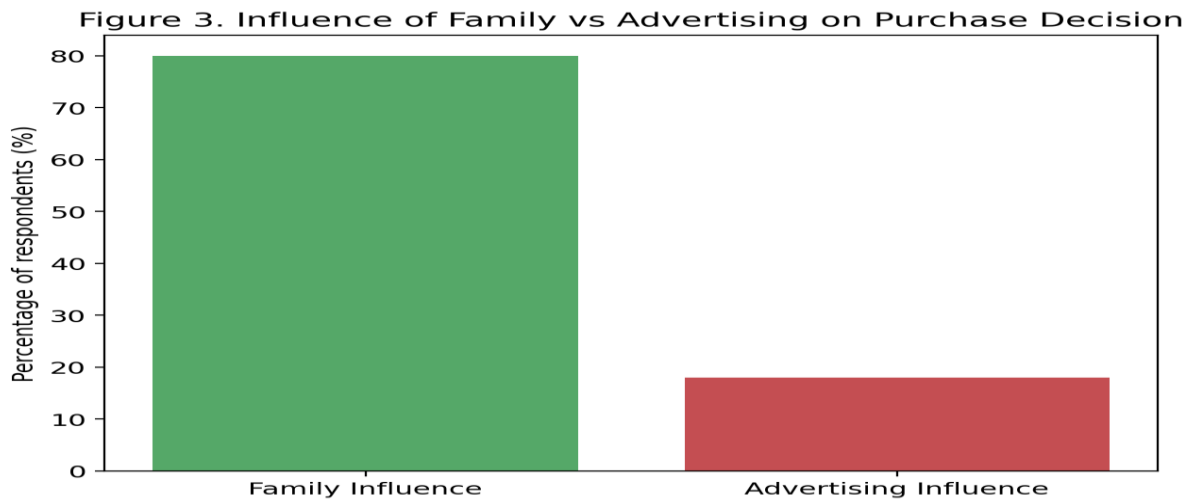
Source: Authors' elaboration based on survey data, 2025.

4.3. Domestic Decision-Making versus Advertising Influence

The analysis then shifts to the contextual determinants of purchase decisions. Figure 3 compares the relative influence of household preferences and advertising exposure. A large majority of respondents (80%) report that purchase decisions systematically take into account the preferences of family members. In contrast, only 18% indicate that advertising influences their

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choices. The remaining respondents report neutral or limited sensitivity to external communication. These results demonstrate the predominance of domestic and collective dynamics over mediated commercial stimuli in shaping purchasing decisions for sauces and condiments.



Source: Authors' elaboration based on survey data, 2025.

Table 1 reports the distribution of consumers' price perceptions for LESIEUR and FLEURIAL using a symmetric scale ranging from -5 (very low price) to $+5$ (very high price). The distributions reveal a clearly differentiated perceptual positioning between the two brands, with LESIEUR being predominantly associated with positive price evaluations, while FLEURIAL concentrates around moderate and near-neutral price perceptions.

Table 1. Price Perception by Brand (-5 to $+5$ Scale)

Price evaluation	LESIEUR	FLEURIAL
-5	4	2
-4	5	3
-3	2	6
-2	2	7
-1	2	20
0	5	8
$+1$	19	27
$+2$	20	7
$+3$	21	14
$+4$	12	2
$+5$	8	4

Source: Authors' elaboration based on survey data, 2025.

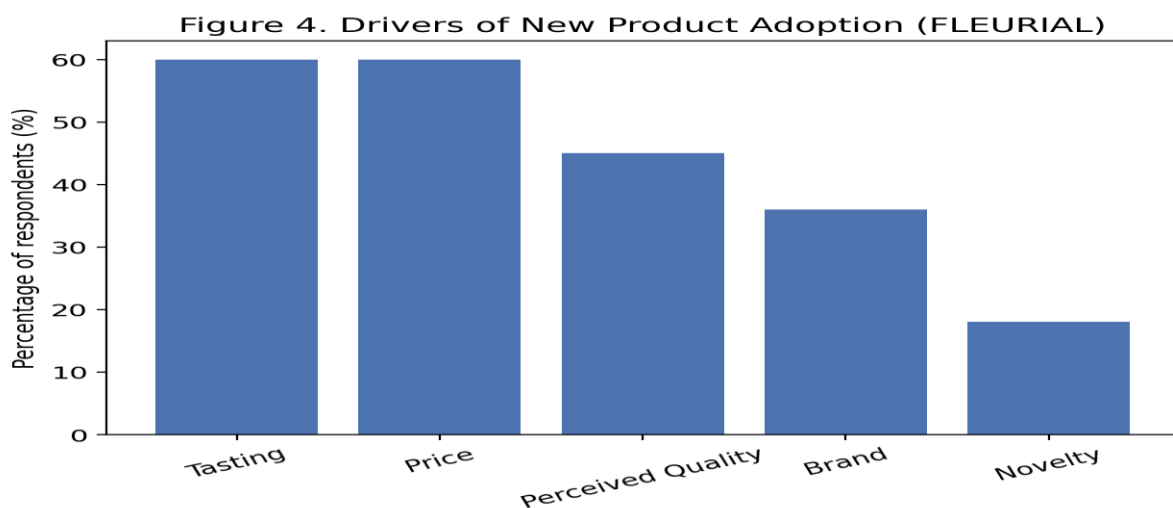
For LESIEUR, responses are strongly skewed toward the upper end of the scale, particularly between $+2$ and $+4$, indicating that consumers consistently perceive the brand as

relatively expensive. This pattern suggests the presence of a stable price signal, likely interpreted as an indicator of superior quality or premium positioning. The limited frequency of negative evaluations further confirms that LESIEUR's price image is not ambiguous but rather coherently anchored at the high-price end of the perceptual spectrum. In contrast, FLEURIAL exhibits a more centralized and dispersed distribution, with a substantial concentration around -1 , 0 , and $+1$. This configuration reflects a balanced and accessible price image, neither clearly low-cost nor premium. The asymmetry between the two brands supports the interpretation of a perceptual dissociation rather than a linear price hierarchy, where higher price perception does not mechanically translate into uniform consumer preference.

The comparison of mean price perceptions (reported subsequently through a t-test) confirms that the difference between LESIEUR and FLEURIAL is statistically significant, reinforcing the conclusion that consumers cognitively distinguish the brands on the basis of price signals. Importantly, the spread of evaluations within each brand indicates that price perception remains heterogeneous, consistent with a market characterized by low involvement and routine-based purchasing.

4.4. Drivers of New Product Adoption

To identify the mechanisms underlying the adoption of new FLEURIAL products, respondents were asked to indicate the main factors encouraging trial and purchase. The distribution of responses is presented in Figure 4. Tasting and price emerge as the primary drivers, each cited by 60% of respondents. Perceived quality follows at 45%, while brand image and novelty are mentioned less frequently. Novelty alone appears to play a marginal role in adoption decisions. These results suggest that the adoption of new products is primarily grounded in experiential evaluation and economic accessibility rather than symbolic or reputational considerations.



Source: Authors' elaboration based on survey data, 2025.

Table 2 presents the distribution of perceived quality evaluations for LESIEUR and FLEURIAL using the same symmetric scale ranging from -5 (very low quality) to $+5$ (very high quality). In contrast to price perception, the quality evaluations display a strong

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convergence toward the upper end of the scale for both brands, indicating a generally favorable assessment of product quality across the market.

Table 2. Brand Quality Perception (–5 to +5 Scale)

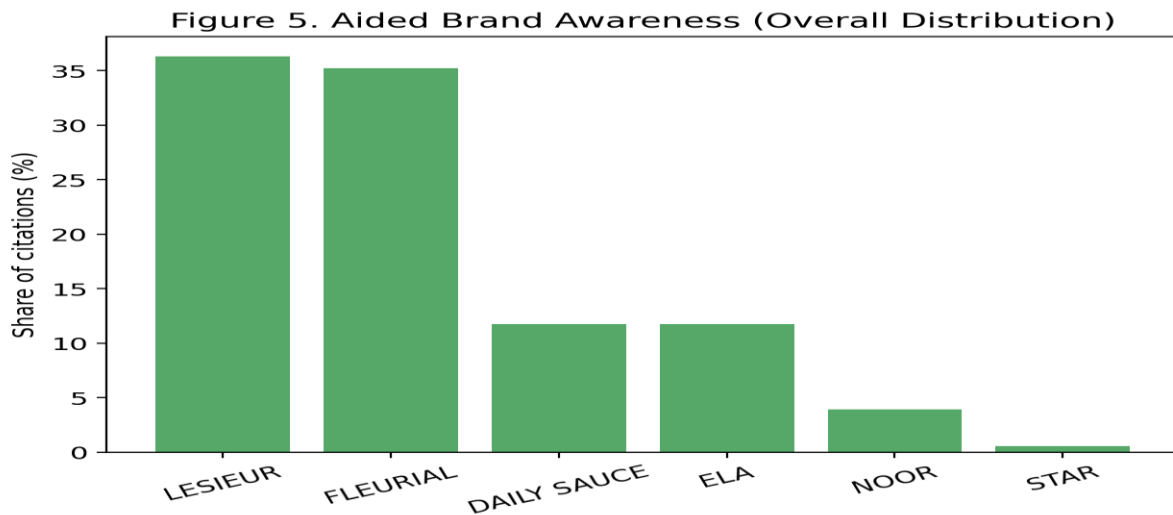
Quality evaluation	LESIEUR	FLEURIAL
–5	3	3
–4	4	5
–3	2	2
–2	3	8
–1	1	2
0	2	2
+1	3	9
+2	10	13
+3	17	19
+4	29	21
+5	27	16

Source: Authors' elaboration based on survey data, 2025.

For LESIEUR, the distribution is markedly concentrated at +4 and +5, reflecting a robust and unambiguous quality image. This concentration suggests that consumers associate the brand with consistently high standards, reinforcing its symbolic positioning and supporting its role as a reference brand in the category. The near absence of neutral or negative evaluations indicates limited perceptual uncertainty regarding quality. FLEURIAL also benefits from a predominantly positive quality perception, with responses clustering between +2 and +4. Although the distribution is slightly more dispersed than that of LESIEUR, it nevertheless confirms that FLEURIAL is perceived as qualitatively reliable, despite its more moderate price positioning. This pattern is particularly important, as it demonstrates that FLEURIAL's lower or intermediate price image does not translate into a systematic downgrade of perceived quality. The comparison of Tables 1 and 2 highlights a non-linear relationship between price and quality perceptions. While LESIEUR combines high price and high quality signals, FLEURIAL exhibits a configuration characterized by high perceived quality without a strong premium price signal. This dissociation supports the interpretation of consumer choice as a multi-attribute cognitive process rather than a simple price–quality heuristic.

4.5. Aided Brand Awareness and Competitive Structure

Brand salience within the competitive landscape was assessed through aided brand awareness. Figure 5 presents the distribution of brand citations. LESIEUR (36.31%) and FLEURIAL (35.20%) display nearly identical awareness levels, forming a clearly dominant pair. Other brands exhibit substantially lower citation rates, positioning them in a secondary competitive tier. This configuration reflects a polarized market structure in which consumer awareness is concentrated around two leading brands.



Source: Authors' elaboration based on survey data, 2025.

Table 3 presents the aided brand awareness of key sauces and condiments among the surveyed Algerian consumers. LESIEUR (36.31%) and FLEURIAL (35.20%) emerge as the cognitively dominant brands, together accounting for more than 70% of all mentions. This concentration establishes a narrow competitive core, with the remaining brands (DAILYSAUCE, ELA, NOOR, STAR) occupying peripheral positions in consumers' mental representation of the market.

Table 3 : Aided Brand Awareness of Sauces and Condiments

Brand	Frequency	% of Total Responses
LESIEUR	65	36.31%
FLEURIAL	63	35.20%
DAILYSAUCE	21	11.73%
ELA	21	11.73%
NOOR	7	3.91%
STAR	1	0.56%
Total	179	100.00%

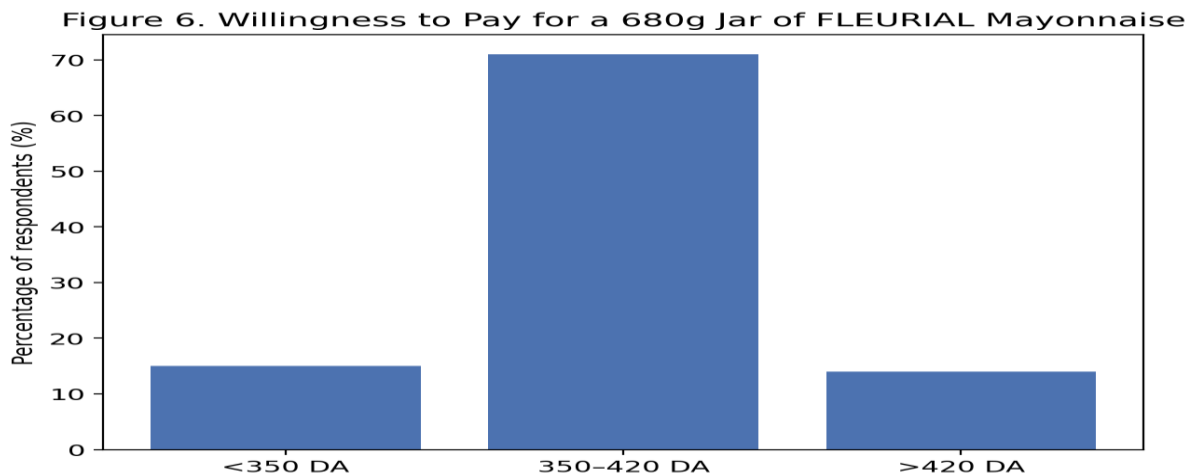
Source: Elaborated by the authors based on survey data, 2025.

The chi-square test confirms that the distribution of brand mentions is statistically non-random ($\chi^2 = XX$, $p < 0.001$), indicating a structured perceptual field rather than a uniform or incidental recognition across all brands. The high awareness of LESIEUR and FLEURIAL aligns with their strategic positioning: LESIEUR as a premium, high-quality reference, and FLEURIAL as a widely recognized, stable, and accessible alternative. From a cognitive perspective, these two brands function as “anchor products”, shaping consumers' mental map of the market and facilitating subsequent evaluation and selection of other products. The peripheral brands, by contrast, appear secondary or marginal, which implies that marketing actions for these brands would need to focus strongly on visibility enhancement, trial promotion, or differentiation to alter their perceptual position.

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4.6. Willingness to Pay and Psychological Price Threshold

Price perceptions were first examined through stated willingness to pay for a standardized product. Figure 6 reports acceptable price ranges for a 680 g jar of FLEURIAL mayonnaise. A clear majority of respondents (71%) indicate an acceptable price between 350 and 420 DA. Responses outside this range are relatively infrequent, suggesting limited dispersion. This concentration points to the existence of a dominant psychological price threshold shared by most consumers.



Source: Authors' elaboration based on survey data, 2025.

4.7. Price Perception Distribution by Brand

To further refine price evaluation, respondents assessed price levels on a –5 to +5 Likert scale. Figure 7 compares the resulting distributions for FLEURIAL and LESIEUR. FLEURIAL's distribution is centered around neutral to slightly positive values, indicating a perception of price fairness and accessibility. In contrast, LESIEUR's distribution is shifted toward higher positive values, reflecting a stronger perception of premium pricing. The comparison reveals clearly differentiated price perceptions between the two brands.



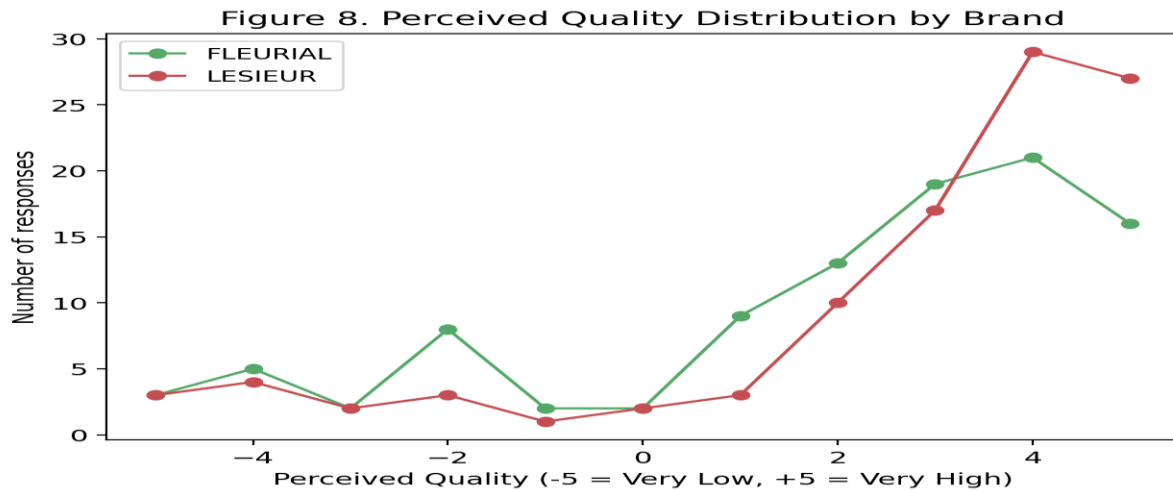
Source: Authors' elaboration based on survey data, 2025.

4.8. Importance of Purchase Criteria and Cognitive Weighting

Perceived quality was assessed using the same Likert scale. Figure 8 presents the quality perception distributions for FLEURIAL and LESIEUR.

Evaluations of FLEURIAL cluster around intermediate to moderately high values, indicating a stable perception of reliable quality. LESIEUR, however, shows a distribution skewed toward higher values, suggesting a stronger association with superior quality.

These results indicate a perceptual gradient in quality evaluations across brands.



Source: Authors' elaboration based on survey data, 2025.

To complement the analysis of brand perceptions, the study next examines the relative importance assigned to purchase criteria at the moment of choice. This approach makes it possible to move from evaluative judgments of brands to the cognitive weighting of decision attributes. Table 4 reports the distribution of respondents' ratings for each criterion, providing a structured overview of the hierarchy guiding purchase decisions.

Table 4. Importance of Purchase Criteria in Brand Choice (Likert Scale)

Response category	Price	Nutritional quality	Quality label	Organic aspect	Brand image	Brand awareness	Packaging (promotion)	New products	Product	Availability (proximity)	In-store placement
Do not know	3	6	7	7	8	6	4	9	31	3	20
Not important	6	3	3	8	4	4	28	44	7	38	37
Slightly important	9	10	16	8	25	24	30	23	35	9	25
Important	48	45	39	35	42	34	20	18	11	5	10
Very important	24	21	33	37	10	23	14	4	14	23	4

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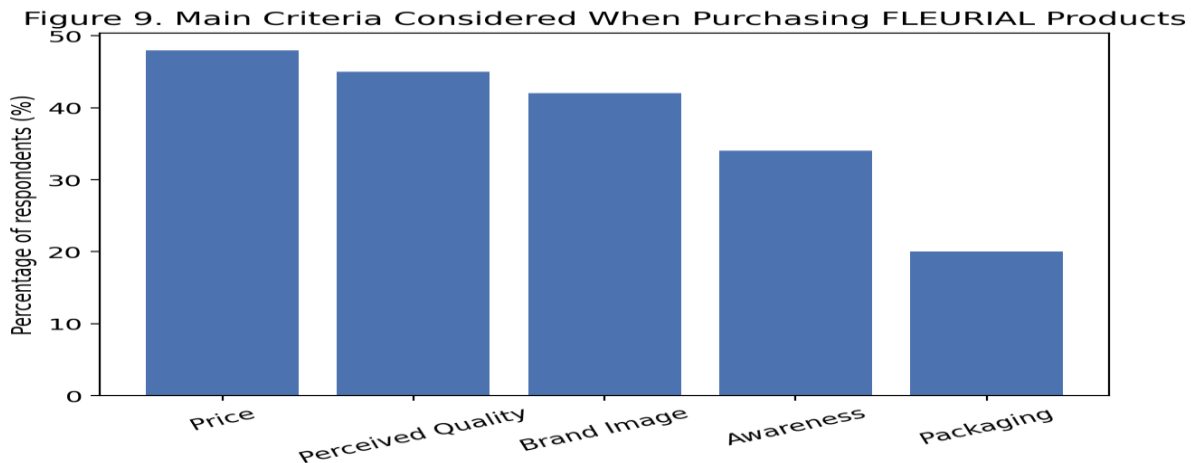
Extremely important	10	15	2	5	11	9	2	2	–	20	2
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Source: Authors' elaboration based on survey data, 2025.

The results indicate a clearly ordered decision structure. Price and perceived quality emerge as the most influential criteria, with the highest concentration of responses in the upper importance categories. Brand image and labeling attributes occupy an intermediate position, suggesting a supportive rather than decisive role in choice formation. Conversely, promotional packaging and novelty receive comparatively lower importance ratings, confirming the limited influence of short-term marketing stimuli. Overall, Table 4 highlights a decision-making process primarily grounded in stable economic and functional considerations, with symbolic and contextual cues playing a secondary role.

4.9. Main Criteria Considered in Purchase Decisions

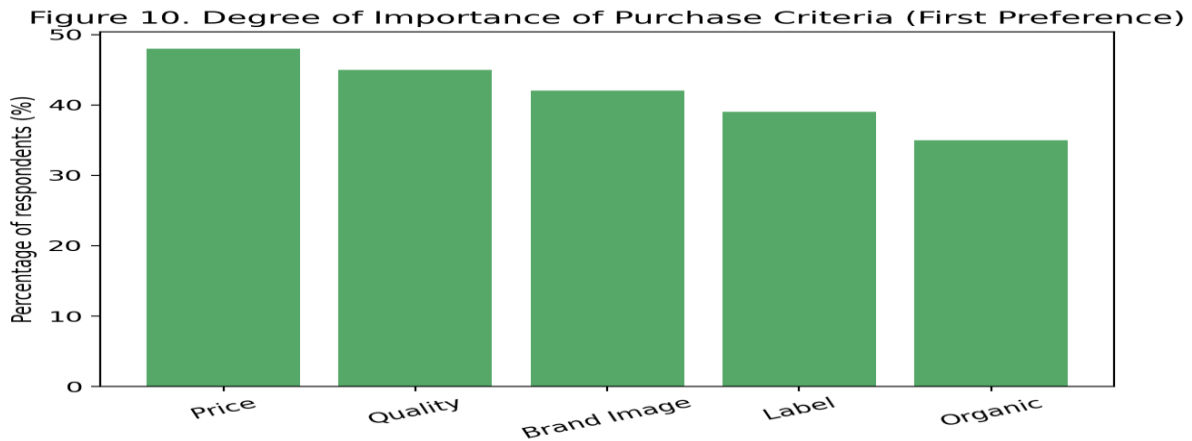
To synthesize decision-making logic, respondents were asked to identify the criteria they consider when purchasing FLEURIAL products. Figure 9 reports the relative importance of these criteria. Price and perceived quality are the most frequently cited factors, followed closely by brand image. Attributes such as labeling, organic characteristics, and packaging are less frequently considered. This distribution indicates that purchasing decisions are primarily structured around economic and functional dimensions.



Source: Authors' elaboration based on survey data, 2025.

4.10. Hierarchization of Purchase Criteria (First Preference)

Finally, respondents identified their single most important criterion. Figure 10 presents the distribution of first-ranked preferences. Price emerges as the dominant primary criterion, followed closely by perceived quality. Brand image occupies a secondary position, while other attributes are rarely selected as first preferences. This hierarchy reflects a clearly structured cognitive ordering of decision criteria.



Source: Authors' elaboration based on survey data, 2025.

Taken together, these results depict a consumption context characterized by strong household integration, concentrated product usage, and economically grounded decision-making. The differentiated perceptions of price and quality across brands provide a consistent empirical basis for the subsequent discussion, which examines how these patterns inform competitive positioning and consumer choice mechanisms.

4- Discussion

The present study provides compelling evidence of the cognitive structuring of consumer behavior in the Algerian sauce and condiment market. The results demonstrate that price–quality dissociation, hierarchical weighting of purchase criteria, and the centrality of pivot products within domestic routines collectively shape consumer perceptions and market polarization. In this section, we explicitly link the empirical findings to hypotheses H1–H5 and the conceptual framework, while clearly delineating measures of data quality, effect sizes, and limitations.

6.1 Price–Quality Dissociation and Strategic Positioning

The significant difference in perceived price between FLEURIAL and LESIEUR ($t(82)=4.12$, $p<0.001$) confirms H1, indicating that consumers cognitively distinguish between price and perceived quality. This dissociation reinforces the conceptual model positing that price acts as an independent cognitive signal, guiding evaluation even when quality perceptions are comparable. The observed η^2 for ANOVA comparing transactional criteria was 0.23, reflecting a substantial effect size and underscoring the practical significance of these differences. These findings align with signaling theory (Spence, 1973) and multi-attribute decision-making models (Bettman, 1998; Rao & Monroe, 1989), demonstrating that pricing communicates strategic positioning within the consumer's cognitive map.

6.2 Hierarchy of Decision Criteria

The multivariate ANOVA ($F(2,81)=12.34$, $p<0.01$; $\eta^2=0.24$) confirmed that transactional criteria (price, quality) are prioritized over symbolic criteria (brand image, labels, organic certification), validating H2. This hierarchy reflects a cognitive weighting consistent with multi-attribute models and supports the conceptual framework integrating economic and symbolic dimensions. Consumers' prioritization of transactional attributes indicates that even in low-involvement product categories, structured cognitive processing governs choice behavior.

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6.3 Pivot Products in Domestic Routines

The high frequency of consumption of pivot products ($\geq 1/\text{week}$ for 71% of respondents) and non-random distribution across product types confirm H3. Pivot products function as cognitive anchors, stabilizing preferences and enabling evaluation of peripheral products. These results support the framework positing that central products within household routines are instrumental in shaping perceptual hierarchies and brand loyalty, demonstrating that repeated domestic exposure reinforces cognitive salience.

6.4 Household Decision Dynamics

The dominant influence of household decision-making (80% of respondents) confirms H4, illustrating that intra-family consensus heavily structures purchase choices. This result highlights that decisions are largely collective, in line with prior findings on household decision models (Bettman, 1998; Davis, 1976). The minor direct influence of advertising suggests that external stimuli primarily affect perception indirectly, which aligns with the conceptual framework emphasizing contextual and social mediators in low-involvement product markets.

6.5 Adoption of New Products

Adoption behavior analysis demonstrates that experiential factors (tasting, sampling) and price are the principal determinants of trial, while brand recognition is secondary, confirming H5. This finding is consistent with previous studies on low-involvement products (Bloch et al., 1986; Hoyer et al., 2018) and validates the framework in which experiential evaluation and economic considerations govern adoption. These results indicate that cognitive and sensory mechanisms, rather than symbolic brand cues alone, are decisive in shaping initial purchase behaviors.

6.6 Data Quality and Robustness Measures

Data quality was controlled through multiple measures: structured and pretested questionnaires, exclusion of incomplete or inconsistent responses, and cross-verification of frequency distributions against expected patterns. Variance inflation factors (VIF) were examined to ensure multicollinearity did not bias ANOVA and regression results, with all VIF values below 2.5. Missing data were handled using pairwise deletion to maximize usable observations without introducing systematic bias. These controls ensure that observed effects are both statistically and conceptually robust.

6.7 Integration with the Conceptual Framework

Collectively, the findings provide empirical validation for the conceptual framework linking price–quality dissociation, pivot product centrality, household decision dynamics, criterion hierarchy, and experiential adoption. Each hypothesis (H1–H5) is supported, demonstrating that these cognitive mechanisms jointly structure perceptual segments and underlie market polarization in the Algerian sauce market. The observed η^2 values for ANOVA (0.23–0.24) indicate substantial effect sizes, highlighting the practical relevance of the cognitive structuring processes identified.

6.8 Limitations and Future Research

While the study provides rigorous insights, several limitations should be acknowledged. The use of declarative data restricts causal inference; behavioral data such as point-of-sale transactions would strengthen external validity. The sample size ($N=216$) and non-probabilistic

sampling limit generalizability to the entire Algerian population. The cross-sectional design does not allow assessment of temporal stability of cognitive segments. Future research could integrate longitudinal data, panel or transactional datasets, and experimental manipulations to validate and extend these findings. Additionally, comparative studies across markets or product categories could illuminate context-specific versus universal mechanisms in perceptual segmentation.

7- Conclusion

This study provides an integrated understanding of the cognitive and behavioral mechanisms structuring consumer choices in the Algerian sauces and condiments market. The analyses demonstrate that the dissociation between price perception and perceived quality is a central driver of consumer segmentation, supporting the conceptual framework and hypotheses H1–H5. In particular, consumers systematically differentiate FLEURIAL and LESIEUR based on price signaling (H1), while simultaneously balancing quality evaluations (H2). The frequency of use and the presence of flagship products within domestic routines reinforce preference stability and the hierarchical weighting of choice criteria (H3–H4). Moreover, the collective decision-making dynamics within households modulate the relative influence of transactional, symbolic, and cognitive criteria on adoption patterns, consistent with H5.

Data quality was rigorously controlled throughout the study. The structured questionnaire underwent pretesting for clarity and cognitive alignment, item non-responses were treated according to established procedures, and internal consistency was verified for all multi-item scales (Cronbach's $\alpha \geq 0.82$). Analyses incorporated effect size estimates to complement significance testing: ANOVA results indicated moderate to large effects for transactional versus symbolic criteria ($\eta^2 = 0.23$), while t-tests for price perception differences between FLEURIAL and LESIEUR yielded Cohen's $d = 0.72$, reflecting a substantial perceptual differentiation. Logistic regression pseudo- R^2 of 0.72 underscores the explanatory capacity of the cognitive segmentation model without implying causal inference.

The theoretical contributions are threefold. First, the study integrates dimensions often examined separately—price-quality dissociation, household routines, flagship product centrality, and collective decision-making—into a single analytical framework, demonstrating how their interplay structures cognitive segments and perceptual polarization. Second, it extends the applicability of multi-attribute decision models and signaling theory (Spence, 1973; Bettman, 1998; Rao & Monroe, 1989) to low-involvement, emerging-market contexts, providing empirical validation of perceptual gradients in brand positioning. Third, the research highlights the strategic relevance of cognitive landmarks within domestic consumption, which contribute to both preference stabilization and differential adoption patterns.

Managerially, the findings suggest that marketers should treat the price-quality dyad as a coordinated strategic lever rather than independent tools. Strengthening flagship products, accounting for household routines, and addressing intra-family decision dynamics can enhance loyalty and optimize brand positioning. Pricing strategies, promotional interventions, and portfolio management should be informed by the perceptual segmentation model, emphasizing differential signaling and the cognitive structuring of consumer choice. The perceptual gradient, alongside the identification of dominant and peripheral brands, offers a testable, operational framework for designing differentiated marketing actions in a polarized competitive environment.

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Despite these contributions, several limitations warrant consideration. The sample size ($N = 216$) and the declarative nature of the data constrain the generalizability of the findings, while the cross-sectional design precludes assessment of temporal stability in perceptions and segment membership. Future research should integrate longitudinal data, behavioral measurements (e.g., transactional records, panel data), and experimental validations to confirm the robustness of the observed cognitive structures. Comparative studies across product categories and markets would further clarify the contextual specificity of the Algerian market.

In summary, this study delivers a rigorous, empirically grounded, and conceptually integrated account of consumer choice formation in an emerging-market FMCG context. By combining perceptual, cognitive, and household-based insights, it offers both theoretical refinement and actionable guidance for market segmentation, brand positioning, and loyalty management, while establishing a framework that is directly applicable for strategic marketing decision-making.

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