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**THE INFLUENCE OF COGNITIVE HEURISTIC ON PURCHASING  
EFFICIENCY OF RICE RETAILER AMONG CONSUMERS AT  
PALAYAN CITY, NUEVA ECIJA**

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**\*Nadine N. Taroja , Kate Ashley Camcam, Mikaella G. Rangcapan , Lyciah F. Rolloque ,  
Jayar DC. Gonzaga, Adelnor A. Escaño, Dr. Rowell A. Diaz**

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*Nueva Ecija University of Science and Technology, Fort Magsaysay Campus, Palayan City,  
Nueva Ecija, Philippines.*

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\*Corresponding Author: Nadine N. Taroja

Nueva Ecija University of Science and Technology, Fort Magsaysay Campus,  
Palayan City, Nueva Ecija, Philippines.

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## ABSTRACT

This study examines the influence of cognitive heuristics on the purchasing efficiency of rice retailers among consumers in Palayan City, Nueva Ecija. Specifically, it focuses on three types of heuristics—availability, representativeness, and anchoring—and their relationship with key purchasing efficiency factors such as price, quality, accessibility, and transaction convenience. A descriptive mixed-method research design was employed, involving 83 respondents selected through purposive sampling. Data were collected using a structured questionnaire and analyzed using descriptive statistics, Pearson correlation, and thematic analysis. The findings reveal that consumers strongly rely on cognitive heuristics when making purchasing decisions. Representativeness (mean = 4.29) and anchoring (mean = 4.33) heuristics showed strong influence, particularly in shaping perceptions of rice quality and price evaluation, while availability heuristic showed moderate influence (mean = 3.98). Correlation analysis indicates that representativeness and anchoring heuristics have significant positive relationships with purchasing efficiency variables, especially quality perception and transaction speed. In contrast, availability heuristic showed no significant relationship with efficiency outcomes. The results suggest that while heuristics improve decision speed and convenience, they may also lead to simplified judgments based on price cues, familiarity, and visual indicators rather than objective evaluation. The study concludes that cognitive heuristics play a critical role in consumer behavior in rice retailing, particularly among low-income and routine buyers. It recommends that retailers enhance pricing

transparency, product quality consistency, and customer service to improve purchasing efficiency and consumer satisfaction.

**KEYWORDS:** *Cognitive Heuristic, Purchasing Efficiency, Consumer Behavior, Rice Retailers, Buying Decision.*

## 1. INTRODUCTION

Retail environments, consumer decision making has become increasingly complex due to the abundance of choices, fluctuating prices, and varying product quality, particularly in staple commodities such as rice. In Palayan City, Nueva Ecija an agricultural region where rice is both a primary commodity and daily necessity consumers are expected to make frequent purchasing decisions under conditions of limited time, budget constraints, and information uncertainty. According to (Diaz 2025) Rice is the primary support of Filipino food security and the driver of the country's economic stability, is the backbone of the everyday lives of millions. Therefore, proper market functioning of rice is of utmost concern, and price behavior is at its core. One of the most critical indicators of market efficiency and profitability along the rice supply chain is the price spread, or wholesale-retail price difference<sup>[1]</sup>. Similarly to (Reyes et al., 2021) rice is a staple commodity in many Asian countries, including the Philippines, making consumer behavior highly habitual and culturally influenced. Studies show that rice purchasing decisions are often driven by routine buying patterns, trust in local retailers, and perceived quality rather than detailed product analysis<sup>[2]</sup>.

In rural and semi-urban areas, consumers rely heavily on heuristic cues due to limited access to market comparisons. Research in Philippine retail markets confirms that price sensitivity, availability, and familiarity strongly influence rice purchasing decisions (Bairagi et al., 2023) <sup>[3]</sup>.

Purchasing efficiency refers to the ability of consumers to make fast, accurate, and cost-effective decisions when acquiring goods. While heuristics improve decision speed, they may also reduce accuracy due to cognitive bias (Simon, 2020) <sup>[4]</sup>. For instance according to (Quijano 2021) People behave differently they have their own unique personalities, characteristics, values, preferences and attitudes that set them apart from other individuals. Their degree of differences paved the ways for businesses to look into their behaviors in terms of buying and consuming goods and services the way they purchase and decide what to buy have influenced businesses in deciding what type of products they should offer to satisfy consumers' needs and wants which will lead businesses to earn better profits. Consumers

have also the tendency to show different buying behavior depending on the amount of products to be purchased along with its perceived quality<sup>[5]</sup>.

Recent consumer research suggests that heuristic-based decision-making improves efficiency in low-involvement products but may lead to suboptimal purchasing outcomes when consumers fail to compare alternatives (Nguyen et al., 2022) <sup>[6]</sup>. In staple food markets like rice retailing, efficiency is influenced by familiarity, price perception, and decision speed rather than systematic evaluation. In this context, purchasing efficiency becomes a critical concern, as it reflects how effectively consumers are able to maximize value, minimize effort, and make optimal choices. However, many consumers rely not only on rational evaluation but also on cognitive heuristics mental shortcuts such as availability, representativeness, and anchoring which may either enhance or impair decision quality in rice purchasing behavior. Cognitive heuristics play a significant role in shaping consumer decision-making, particularly in environments characterized by limited time, information overload, and repetitive purchasing behavior. In retail contexts, consumers often rely on mental shortcuts to simplify complex choices, especially for staple commodities such as rice. According to Chen and Wang (2023), cognitive biases significantly affect consumer decision-making in retail environments, leading individuals to rely on simplified judgment strategies rather than systematic evaluation<sup>[7]</sup>. Similarly, Hasan et al. (2024) emphasized that under conditions of uncertainty, consumers frequently depend on heuristic-based thinking, which can either improve decision speed or reduce decision accuracy depending on the context. These findings suggest that heuristic processing is highly relevant in understanding how consumers select rice retailers in everyday purchasing situations<sup>[8]</sup>. The availability heuristic is one of the most observed cognitive shortcuts in consumer behavior. It explains how individuals make decisions based on easily recalled information or recent experiences rather than complete data. Fei (2025) found that consumers tend to rely heavily on recent exposure, such as advertisements or recent purchases, when making buying decisions, even when more objective alternatives exist<sup>[9]</sup>. This behavior is particularly relevant in rice purchasing, where consumers often return to familiar brands or retailers based on memory rather than systematic comparison. Supporting this, Sha et al. (2022) identified that availability bias significantly influences purchasing decisions, especially in low-involvement goods where repeated buying occurs, such as food staples<sup>[10]</sup>. Anchoring and representativeness heuristics also play a crucial role in shaping consumer perceptions of value and quality. Anchoring occurs when initial price information influences subsequent judgment, often leading consumers to perceive

higher-priced rice as better in quality. Zhang et al. (2024) noted that initial information exposure strongly affects consumer evaluation of products in both online and offline retail environments. Likewise, representativeness heuristic leads consumers to judge rice quality based on superficial indicators such as packaging, cleanliness, or brand reputation rather than actual quality attributes<sup>[11]</sup>.

## 2. Materials and Methods

This study utilized a descriptive research approach to assess the influence of cognitive heuristics on the purchasing efficiency of rice retailers among consumers in Palayan City, Nueva Ecija. To achieve a comprehensive understanding of the research problem, a mixed-method research design was employed, integrating both quantitative and qualitative methodologies. According to (Oranga et al., 2025) Mixed methods research involves using both quantitative and qualitative methodologies in a single study or inquiry to gain a more comprehensive understanding of the issue under investigation<sup>[12]</sup>. The investigation was conducted within selected communities in Palayan City, focusing on consumers who regularly purchase rice from local retailers. The study involved a total of 83 respondents, who were selected through purposive sampling. This sampling technique relied on the researchers' judgment to identify participants who possess relevant experience and knowledge in rice purchasing decisions. The respondents represented a group of consumers actively engaged in routine buying behavior, ensuring the relevance and consistency of the collected data.

To ensure ethical compliance, the study adhered to established research guidelines, guaranteeing that participation was voluntary and that informed consent was obtained from all respondents. In accordance with Republic Act No. 10173, or the Data Privacy Act of 2012, no personally identifiable information was collected, and confidentiality was strictly maintained throughout the research process. Data collection was facilitated through a structured research instrument composed of a questionnaire divided into several sections. The instrument gathered quantitative data through Likert-scale items measuring cognitive heuristics—specifically availability, anchoring, and representativeness—as well as purchasing efficiency indicators such as price, quality, accessibility and transaction. Qualitative data were also collected through selected open-ended questions to capture respondents' insights and experiences. The validity of the instrument was confirmed by experts who provided an "Valid" overall mean rating of 4.08 indicating a high level of internal consistency and trustworthiness for data collection.

For data analysis, the researchers utilized Microsoft Excel and Jamovi statistical software. Descriptive statistics such as frequency, percentage, and weighted mean were used to summarize demographic profiles and key variables. To examine the relationship between cognitive heuristics and purchasing efficiency, Pearson Product-Moment Correlation analysis was conducted using Jamovi. This statistical technique enabled the researchers to determine the strength and direction of associations between variables. Additionally, qualitative responses were analyzed using thematic analysis to identify recurring patterns and insights that supported the quantitative findings.

### 3.1 Results

Table 1 the age distribution of the respondents shows that the majority belong to the 35–42 years old group, comprising 38 respondents (45.78%), followed by those aged 45–50 years old with 19 respondents (22.89%), and 27–34 years old with 13 respondents (15.66%). Meanwhile, 7 respondents (8.43%) are aged 51 years old and above, and 6 respondents (7.22%) fall within the 19–26 years old category. Notably, there are no respondents aged 18 years old and below (0%).

**Table 1. Age Distribution.**

Age	Frequency	Percentage
18 years old below	0	0 %
19-26 years old	6	7.22 %
27-34 years old	13	15.66 %
35-42 years old	38	45.78 %
43-50 years old	19	22.89 %
51 years old and above	7	8.43 %

*Source: Field Survey 2026*

Table 2 in terms of gender, the majority of respondents are female, accounting for 55 respondents (66.73%), while 28 respondents (33.27%) are male. This shows that females dominate the sample population.

**Table 2. Gender Distribution**

Gender	Frequency	Percentage
Male	28	33.73 %
Female	55	66.26 %

*Source: Field Survey 2026*

Table 3 the demographic profile of the respondents in terms of educational attainment reveals a significant concentration at the basic education levels. Based on the results, the majority of the participants (44.57%) reached only a primary school level, followed by 32.53% who completed secondary school and 20.48% who attained senior high school status. Collectively, while decline in higher education participation, with only 2.40% of the population holding a college degree.

**Table 3. Educational Attainment.**

<b>Educational Attainment</b>	<b>Frequency</b>	<b>Percentage</b>
Primary School	37	44.57 %
Secondary School	27	32.53 %
Senior High School	17	20.48%
College Degree	2	2.40 %
Never attend to School	0	0 %
others	0	0 %

*Source: Field Survey 2026*

Table 4 the distribution of respondents according to monthly income shows that the largest proportion belongs to the ₱10,000 and below category, with 22 respondents (26.50%), followed by those earning ₱10,001–₱15,000, comprising 44 respondents (53.01%). Meanwhile, 6 respondents (7.22%) fall within the ₱15,001–₱20,000 range, and 11 respondents (13.25%) belong to the ₱20,001–₱25,000 bracket. Notably, there are no respondents in the higher income categories of ₱25,001 and above (0%).

**Table 4. Monthly Income.**

<b>Monthly Income</b>	<b>Frequency</b>	<b>Percentage</b>
10,000 Php Below	22	26.50 %
10,001 Php-15,000 Php	44	53.01 %
15,001 Php-20,000 Php	6	13.25%
20,001 Php-25,000 Php	11	7.22 %
20,001 Php-30,000 Php	0	0 %
35,001 Php-40,000 Php	0	0 %
40,001 Php Above	0	0 %

*Source: Field Survey 2026*

Table 5 illustrates the extent to which the availability heuristic influences consumer decision-making when purchasing rice. The pooled mean of 3.98, interpreted as “Agree,” suggests that respondents generally rely on mental shortcuts and easily accessible information during their selection.

process. The highest level of agreement was observed in the influence of frequently seen advertisements or recommendations rated at mean of 4.66, (Strongly Agree), Furthermore, the ease of remembering past purchases rated 4.37, (Strongly Agree). Familiarity also plays a significant role, as evidenced by respondents’ tendency to rely on familiar brands or retailers with a mean of 4.04 and recent purchase history rated 4.10 (Agree). While the preference for rice commonly bought by others received the lowest score with a mean of 3.73(Agree) indicating that social influence plays a role but is less dominant compared to personal recall and exposure.

**Table 5. Availability Heuristic.**

Statement	Mean	Sd	Verbal Interpretation
1. I choose rice based on what I can easily remember from past purchases.	4.37	0.68	Strongly Agree
2. I tend to buy rice that I have recently purchased.	4.10	0.71	Agree
3. I rely on familiar rice brands or retailers when making a decision.	4.04	0.67	Agree
4. I am influenced by frequently seen advertisements or recommendations.	4.66	0.94	Strongly Agree
5. I prefer rice that is commonly bought by people around me.	3.73	0.90	Agree
<b>Pooled Mean</b>	<b>3.98</b>	<b>0.78</b>	<b>Agree</b>

Source: Field Survey 2026

Table 6 survey results regarding the Representativeness Heuristic indicate a high level of reliance on mental prototypes and visual cues, with a pooled mean of 4.29, verbally interpreted as “Strongly Agree.” Consumers predominantly associate quality with external indicators, most notably the reputation of the retailer (Mean 4.37) and the physical appearance of the rice, such as its color and texture (Mean 4.33). There is also a strong belief that price serves as a proxy for quality (Mean 4.25) and that neatness in product display signifies a superior product (Mean 4.22). These findings suggest that when the actual intrinsic quality of rice is difficult to assess at the point of sale, consumers use “representative” shortcuts—such as high prices or reputable store environments—to conclude that the product meets their ideal standards (Mean 4.30) .

**Table 6. Representativeness Heuristic.**

Statement	Mean	Sd	Verbal Interpretation
1. I judge the quality of rice based on its appearance (e.g., color, texture).	4.33	0.72	Strongly Agree
2. I associate well-known retailers with better quality rice.	4.37	0.64	Strongly Agree
3. I believe that higher-priced rice is of better quality.	4.25	0.73	Strongly Agree

4. I assume that neatly displayed rice is of higher quality.	4.22	0.73	Strongly Agree
5. I compare rice based on how similar it is to my ideal standard.	4.30	0.62	Strongly Agree
<b>Pooled Mean</b>	<b>4.29</b>	<b>0.69</b>	<b>Strongly Agree</b>

Source: Field Survey 2026

The data in Table 7 reveals that the Anchoring Heuristic is a primary psychological driver for rice consumers, as indicated by a pooled mean of 4.33 (Strongly Agree). Looking at the statements individually, the highest level of agreement was found in the consumer's judgment of price fairness based on previous prices seen (Mean 4.40), suggesting that past market experiences serve as a “permanent anchor” for current evaluations. Respondents also strongly agree that they rely on the first price they see when deciding to buy (Mean 4.35) and that initial price offers or discounts heavily influence their final choice (Mean 4.34). Furthermore, the strong agreement regarding sticking to a specific price range (Mean: 4.31) and comparing against a mental initial price (Mean 4.23) .

**Table 7. Anchoring Heuristic.**

Statement	Mean	Sd	Verbal Interpretation
1. I rely on the first price I see when deciding to buy rice.	4.35	0.80	Strongly Agree
2. I compare prices based on an initial price I have in mind	4.23	0.70	Strongly Agree
3. Discounts and initial price offers influence my purchase decision	4.34	0.70	Strongly Agree
4. I base my judgment of price fairness on previous prices I have seen.	4.40	0.64	Strongly Agree
5. I tend to stick to a specific “price” range when buying rice	4.31	0.70	Strongly Agree
<b>Pooled Mean</b>	<b>4.33</b>	<b>0.71</b>	<b>Strongly Agree</b>

Source: Field Survey 2026

Table 8 indicates a high level of consumer satisfaction regarding the cost-to-value ratio of rice, resulting in a Pooled Mean of 4.31 (Strongly Agree). Individually, the statement regarding the price being reasonable based on the respondent's budget received the highest score (Mean 4.51), suggesting that the current market price is well-calibrated to the financial reality of the consumers. This is reinforced by the strong agreement that the price of rice matches its quality (Mean 4.28) and that respondents get good value for the price they pay (Mean 4.27). Additionally, the satisfaction with affordability from retailers (Mean 4.24) and the ease of finding rice that fits financial capacity (Mean 4.24) suggest a stable and accessible market.

**Table 8. Price.**

Statement	Mean	Sd	Verbal Interpretation
1. The rice I purchase meets my expectations in quality.	4.35	0.57	Strongly Agree
2. The rice is clean and free from impurities.	4.28	0.59	Strongly Agree
3. The rice is fresh and properly stored.	4.29	0.65	Strongly Agree
4. The texture and taste of rice are satisfactory.	4.24	0.60	Strongly Agree
5. I am confident in the quality of rice sold by retailers.	4.34	0.61	Strongly Agree
<b>Pooled Mean</b>	<b>4.30</b>	<b>0.60</b>	<b>Strongly Agree</b>

Source: Field Survey 2026

The data in Table 9 indicates a high level of consumer satisfaction regarding the physical and sensory attributes of rice, yielding a Pooled Mean of 4.30 (Strongly Agree). Individually, respondents “Strongly Agree” that the rice they purchase meets their quality expectations (Mean 4.35) and that they feel confident in the quality provided by retailers (Mean 4.34). The cleanliness of the grain (Mean 4.28) and its freshness/storage conditions (Mean 4.29) also received high marks, suggesting that supply chain standards are meeting consumer needs. While the texture and taste received the relatively lowest mean in this set (Mean 4.24), it still falls within the “Strongly Agree” category.

**Table 9. Rice Quality.**

Statement	Mean	Sd	Verbal Interpretation
1. The price of rice is reasonable based on my budget.	4.51	0.55	Strongly Agree
2. I am satisfied with the affordability of rice from retailers.	4.24	0.58	Strongly Agree
3. I can easily find rice that fits my financial capacity.	4.24	0.69	Strongly Agree
4. The price of rice matches its quality.	4.28	0.59	Strongly Agree
5. I feel that I get good value for the price I pay.	4.27	0.66	Strongly Agree
<b>Pooled Mean</b>	<b>4.31</b>	<b>0.61</b>	<b>Strongly Agree</b>

Source: Field Survey 2026

Table 10 reflects the geographical and operational accessibility of rice retailing, earning a Pooled Mean of 4.31 (Strongly Agree). The accessibility is primarily driven by the convenient location of retailers within the consumers’ area (Mean: 4.45) and the ease of accessing different rice varieties (Mean: 4.35). Availability at the time of need (Mean: 4.27) and convenient operating hours (Mean: 4.28) also contribute to a seamless consumer experience. The result for finding sellers nearby (Mean: 4.23) further confirms a high density of retail points.

**Table 10. Accessibility.**

Statement	Mean	Sd	Verbal Interpretation
1. Rice retailers are conveniently located in my area.	4.45	0.63	Strongly Agree
2. Rice is always available when I need to purchase it.	4.27	0.61	Strongly Agree
3. I can easily access different rice varieties.	4.35	0.59	Strongly Agree
4. Rice retailers operate at convenient hours.	4.28	0.69	Strongly Agree
5. I do not have difficulty finding rice sellers nearby.	4.23	0.72	Strongly Agree
<b>Pooled Mean</b>	<b>4.31</b>	<b>0.65</b>	<b>Strongly Agree</b>

Source: Field Survey 2026

Table 11 Transaction Convenience focuses on the efficiency of the purchasing process, resulting in a Pooled Mean of 4.30 (Strongly Agree). The highest level of agreement was found in the experience of minimal waiting times (Mean 4.41), indicating that the retail environment is highly responsive. Transactions are viewed as quick and efficient (Mean 4.31) and hassle-free (Mean 4.31). Interestingly, the statement regarding the “smooth and organized” nature of the process received a mean of 4.19, which is the only item interpreted as “Agree” rather than “Strongly Agree.”

**Table 11. Transaction Convenience.**

Statement	Mean	Sd	Verbal Interpretation
1. Transactions with rice retailers are quick and efficient.	4.31	0.68	Strongly Agree
2. I experience minimal waiting time when purchasing rice.	4.41	0.67	Strongly Agree
3. The process of buying rice is smooth and organized.	4.19	0.69	Agree
4. Retailers serve customers promptly.	4.25	0.60	Strongly Agree
5. Payment and purchase transactions are hassle-free.	4.31	0.68	Strongly Agree
<b>Pooled Mean</b>	<b>4.30</b>	<b>0.66</b>	<b>Strongly Agree</b>

Source: Field Survey 2026

The correlation analysis reveals significant relationships between cognitive heuristics and consumer perceptions of rice. Primarily, there is a moderate positive correlation between the Representative Heuristic and the Anchoring Heuristic ( $r = 0.379$ ,  $p < .001$ ), suggesting that consumers who categorize products based on mental prototypes are also more susceptible to initial price or quality anchors. Furthermore, the Representative Heuristic significantly influences Quality of Rice ( $r = 0.392$ ,  $p < .001$ ), Accessibility ( $r = 0.315$ ,  $p = 0.004$ ), and Speed of Transaction ( $r = 0.423$ ,  $p < .001$ ). This indicates that when rice fits a consumer's preconceived "ideal" image, they perceive it as higher quality and make purchase decisions more rapidly. The Anchoring Heuristic also plays a pivotal role, showing significant correlations with Price Affordability ( $r = 0.261$ ,  $p = 0.017$ ) and Quality of Rice ( $r = 0.397$ ,  $p < .001$ ), confirming that initial reference points heavily dictate how consumers evaluate the value proposition of the

product. Interestingly, the Availability Heuristic showed no significant relationships with the other variables, suggesting that mere brand recall is less influential in this context than the specific attributes tied to representation and anchoring.

**Table 12. Correlation Matrix**

Correlation Matrix		Availability of heuristic	Representative heuristic	Anchoring heuristic	Price affordability	Quality of rice	Accessibility or availability	Speed of transaction
Availability of heuristic	Pearson's r	—						
	df	—						
	p-value	—						
Representative heuristic	Pearson's r	0.154	—					
	df	81	—					
	p-value	0.165	—					
anchoring heuristic	Pearson's r	0.188	0.379	—				
	df	81	81	—				
	p-value	0.089	<.001	—				
Price affordability	Pearson's r	0.103	0.215	0.261	—			
	df	81	81	81	—			
	p-value	0.353	0.051	0.017	—			
quality of rice	Pearson's r	0.129	0.392	0.397	0.183	—		
	df	81	81	81	81	—		
	p-value	0.245	<.001	<.001	0.099	—		
accessibility or availability	Pearson's r	0.101	0.315	0.145	0.168	0.149	—	
	df	81	81	81	81	81	—	
	p-value	0.366	0.004	0.190	0.129	0.180	—	
speed of transaction	Pearson's r	-0.009	0.423	0.238	0.178	0.381	0.330	—
	df	81	81	81	81	81	81	—
	p-value	0.935	<.001	0.030	0.107	<.001	0.002	—

Source: Jamovi 2.7.12

### 3.2 RESULTS (Open-Ended Questions)

#### Question 1: Decision on Where to Buy Rice

The responses indicate that consumers primarily decide where to buy rice based on proximity, affordability, and convenience. A majority of respondents expressed a strong preference for purchasing from nearby retailers, mainly to reduce transportation costs, particularly due to the rising price of gasoline. Many participants mentioned that they buy from stores that are easy to access, along their daily routes, or within their community, highlighting the importance of location in decision-making. In addition, price considerations play a significant role, as respondents frequently choose retailers offering cheaper or more affordable rice. Some respondents also reported buying from trusted or habitual sources, such as stores where they have been long-time customers or from familiar sellers. A few

participants indicated alternative arrangements, including sourcing rice from their own farms or purchasing directly from suppliers. Overall, consumers' decisions are largely driven by practicality, cost-saving strategies, and accessibility.

### **Question 2: Factors Influencing Choice of Rice Retailer**

The findings reveal that the most influential factors in choosing a rice retailer are price, rice quality, accessibility, and budget constraints. Affordability emerged as the most dominant factor, with many respondents emphasizing the need to stay within their financial capacity due to increasing prices of basic goods. Rice quality is also a major consideration, particularly attributes such as softness, taste, fragrance, and overall palatability, as these directly affect consumption satisfaction. Several respondents noted that poor-quality rice discourages consumption, especially among family members. Accessibility remains another key factor, often linked to convenience and transportation cost savings. Other factors mentioned include customer loyalty, trust in the seller, availability of discounts, cleanliness and organization of the store, and the behavior of the seller. Some respondents also highlighted the importance of recommendations and familiarity, suggesting that both economic and experiential factors influence decision-making. Overall, consumers evaluate a combination of price, quality, and convenience when selecting a rice retailer

### **Question 3: Suggested Improvements for Rice Retailers**

Respondents suggested several improvements focused mainly on pricing, fairness, and service efficiency. The most common recommendation is for retailers to lower rice prices or avoid excessive price increases, reflecting widespread concern about affordability. Many respondents also emphasized the importance of fair pricing practices, including maintaining reasonable profit margins and avoiding overpricing. In addition, some participants recommended that retailers improve rice quality and ensure consistency in product offerings. Operational improvements were also noted, such as maintaining cleanliness and organization of the store, ensuring availability of stock, and speeding up the buying process. Suggestions related to customer relations include being approachable, polite, and trustworthy, as well as offering discounts or loyalty incentives. A few respondents also recommended sourcing from cheaper suppliers to help control prices. Overall, the suggestions highlight the need for retailers to enhance affordability, transparency, efficiency, and customer experience.

## 4. DISCUSSION

### 4.1 Age Distribution of Respondents

The age profile of respondents provides insight into the segment of consumers primarily responsible for household purchasing decisions. The majority of respondents belong to the 35–42 years old group, indicating that purchasing decisions for rice are primarily made by individuals in their middle adulthood, who are more likely to be household decision-makers with established buying habits and financial responsibilities. These characteristics may lead them to rely on cognitive heuristics to simplify decision-making and improve purchasing efficiency.

This indicates that purchasing decisions for rice are primarily made by individuals in their middle adulthood, who are more likely to be household decision-makers with established buying habits and financial responsibilities. These characteristics may lead them to rely on cognitive heuristics to simplify decision-making and improve purchasing efficiency. This finding is supported by the study of Kalyva et al.,(2024), which found that age significantly influences food purchasing behavior, particularly in terms of price evaluation and value perception. Their study highlights that consumers in more mature age groups tend to rely on experience-based judgments when making routine purchasing decisions, reinforcing the idea that middle-aged consumers are more likely to use heuristics in achieving efficient purchases<sup>[13]</sup>.

### 4.2 Gender Distribution

Gender plays a significant role in shaping consumption patterns, particularly in household-related purchases such as staple foods. The results show that the majority of respondents are female, indicating a stronger participation of women in rice purchasing activities.

This suggests that women are more actively involved in purchasing rice and managing household consumption, which aligns with traditional roles in many communities. Their greater involvement in food selection and budgeting may contribute to more frequent use of cognitive heuristics, such as price comparison and value assessment, to ensure efficient purchasing decisions. This result is consistent with the findings of Kalyva, et al., (2024), who reported that female consumers demonstrate stronger engagement in food purchasing decisions, particularly in evaluating price and value for money. The study further emphasizes that gender differences play a significant role in shaping consumer behavior, with women showing higher involvement in routine food purchases, thereby supporting the present study's results<sup>[14]</sup>.

### 4.3 Educational Attainment

Educational attainment influences consumers' cognitive capacity, access to information, and economic opportunities. The findings reveal that the majority of respondents are concentrated in primary and secondary education levels, indicating limited progression toward higher education.

Notably, the survey recorded zero instances of individuals who never attended school, indicating universal access to initial education; however, the data suggests a "leaky pipeline" where the vast majority of individuals exit the formal education system before reaching tertiary levels. This educational ceiling likely impacts the community's overall economic capacity and professional mobility. These findings align with recent research by Ragadhita et al. (2026), which examines educational datasets and the barriers to higher attainment in developing regions. Their study posits that while inclusive policies have successfully eliminated the "never attended" demographic, significant socioeconomic hurdles continue to prevent the transition from secondary to tertiary education. The researchers argue that a population primarily composed of individuals with only basic or secondary education faces increased vulnerability to labor market shifts, as they often lack the specialized skills required for higher-value employment. Consequently, the high frequency of secondary-level attainment without subsequent college completion, as seen in this survey, highlights a critical need for targeted interventions to support higher education accessibility<sup>[15]</sup>.

### 4.4 Monthly Income

Income level is a fundamental determinant of purchasing power and consumer behavior. The results indicate that the majority of respondents fall under the ₱10,000 and below income category, highlighting financial limitations among consumers.

This indicates that the majority of respondents belong to the low-income group, suggesting that financial constraints are a significant factor influencing their purchasing behavior. Consumers within this income range are more likely to prioritize Affordability, rely on price-based decision-making, and use cognitive heuristics such as choosing familiar brands, selecting lower-priced options, or buying in smaller quantities to maximize limited resources. These strategies may enhance purchasing efficiency under budget limitations but may also limit the exploration of alternative options. According to Kalyva et al., (2024), which found that income level significantly influences food purchasing behavior, particularly in terms of price sensitivity and value perception. The study emphasizes that low-income consumers tend to be more price-conscious and rely heavily on simplified decision-making strategies, such as heuristics, when purchasing food products. This supports the present study's result that

respondents with lower income levels are more likely to adopt efficient but simplified purchasing strategies when buying staple goods like rice<sup>[16]</sup>.

#### 4.5 Availability Heuristic

The availability heuristic explains how consumers rely on easily recalled information in decision-making. The findings indicate that the **majority of respondents agree** that advertisements, familiarity, and past experiences influence their purchasing behavior.

According to (Li et al., 2021) that repeated advertising exposure enhances memory accessibility and significantly influences consumer purchase intentions<sup>[17]</sup>. Which is supported by studies demonstrating that familiarity reduces perceived risk and simplifies decision-making processes in consumer behavior (Lee & Hong, 2021) <sup>[18]</sup> . In addition, reinforced by research suggesting that consumers rely more heavily on easily retrievable information, such as past purchases and familiar options, when faced with time constraints or low involvement (R. Díaz et al., 2024) <sup>[19]</sup>. Supports findings that prior experience and memory recall play a crucial role in shaping consumer behavior, especially in frequently purchased goods where decisions are made quickly Rohden et al., (2024) <sup>[20]</sup>. Overall, these results indicate that visibility, repetition in marketing, and personal recall are primary drivers in the consumer decision-making process for this essential staple, consistent with contemporary literature emphasizing the importance of availability-based heuristic processing.

#### 4.6 Representativeness Heuristic

The representativeness heuristic reflects how consumers judge products based on perceived similarities to ideal standards. The results show that the **majority of respondents strongly agree** that external cues influence their perception of rice quality.

This finding aligns with recent research on food consumer behavior, according to Konuk et al. (2021) found that store image and perceived retailer trust significantly influence perceived product quality, especially when intrinsic attributes are difficult to evaluate<sup>[21]</sup>. Similarly, Asioli et al. (2020) emphasized that visual cues such as appearance, labeling, and presentation strongly shape consumer judgments of food quality<sup>[22]</sup>.

#### 4.7 Anchoring Heuristic

Anchoring refers to the reliance on initial information, particularly price, when making decisions. The findings indicate that the **majority of respondents strongly agree** that previous prices and initial price exposure influence their purchasing behavior. According to Adaval et al. (2022) emphasized that internal reference prices, formed through past purchase experiences, strongly influence consumers' price judgments and decision-making

processes<sup>[23]</sup>. Supporting this, Biswas et al. (2021) reported that promotional pricing and discounts act as strong anchors that shape consumers' willingness to pay and perceived value<sup>[24]</sup>. Overall, these findings indicate that anchoring—whether through past prices, initial exposure, or promotional cues—plays a significant role in shaping consumer perceptions of price fairness and purchase decisions. This is strongly supported by contemporary literature, which confirms that anchoring remains a dominant heuristic in consumer pricing behavior, particularly in low-involvement and frequently purchased products such as rice.

#### 4.8 Price

Consumer satisfaction with price reflects perceived value. The results indicate that the **majority of respondents strongly agree** that rice is affordable and fits their budget. For instance, research shows that product quality and price significantly and positively influence consumer satisfaction, with price acting as a mediating factor in value perception (Alves & Maia, 2024)<sup>[25]</sup>. Moreover, According to (Ilhamiyah et al., 2025) empirical evidence confirms that both price and quality jointly shape purchasing decisions and satisfaction levels in rice markets, indicating that consumers evaluate value based on the balance between cost and product benefits<sup>[26]</sup>.

#### 4.9 Quality of Rice

Perceived quality is essential in shaping satisfaction. The findings show that the **majority of respondents strongly agree** that rice meets their expectations in terms of quality and sensory attributes. These findings are strongly supported by recent literature which consistently highlight that sensory and physical attributes—such as texture, taste, appearance, and grain quality—are primary determinants of consumer satisfaction and acceptance of rice. For instance, taste quality has been identified as a central component of rice value, largely influenced by physicochemical properties such as amylose and protein content (Shi et al., 2021)<sup>[27]</sup>. Similarly, studies reveal that consumer acceptance of rice varieties is largely driven by sensory characteristics, with texture and flavor significantly affecting preferences (Gondal et al., 2021)<sup>[28]</sup> Supporting this, research found that liking and disliking of rice products are directly linked to sensory and physicochemical attributes such as texture, stickiness, and overall eating quality (Lee et al., 2021)<sup>[29]</sup>. Additional studies show that visual and sensory cues, including appearance and perceived cleanliness, affect flavor perception and overall consumer evaluation, reinforcing the importance of physical attributes in satisfaction (Spence et al., 2021)<sup>[30]</sup>. Collectively, these studies validate that high consumer satisfaction in this study is strongly associated with favorable sensory attributes, cleanliness, and consistent quality, all of which are critical drivers of perceived value and trust in rice markets.

#### 4.10 Speed of Transaction

Efficiency in purchasing plays a crucial role in customer satisfaction. The results indicate that the **majority of respondents strongly agree** that transactions are fast and efficient.

This suggests that while the service is fast, there may be minor room for improvement in the formal organization of the buying process. These findings are strongly supported by recent studies which emphasize that service efficiency—particularly waiting time, speed of transactions, and process organization—is a critical determinant of customer satisfaction in retail environments. Research shows that shorter waiting times significantly increase customer satisfaction, while longer waits negatively affect perceptions of service quality (Caruelle et al., 2023) <sup>[31]</sup>. Similarly, studies on retail checkout experiences reveal that waiting time and queue management directly influence emotional responses and overall shopping satisfaction (Pallikkara et al., 2024) <sup>[32]</sup>. In addition, longitudinal research in grocery retailing highlights that efficient service execution and smooth transaction processes are key drivers of customer satisfaction across store formats (Blut et al., 2021) <sup>[33]</sup>. Supporting this, evidence from developing-country retail contexts shows that service quality—including speed, convenience, and ease of transactions—has a significant positive effect on customer satisfaction (Pohan et al., 2025) <sup>[34]</sup>. These studies confirm that the high satisfaction observed in this study is closely linked to efficient service delivery, minimal waiting time, and generally smooth transaction processes, although improvements in organization could further enhance the consumer experience.

#### 4.11 Transaction Convenience

Convenience influences purchasing behavior, especially for essential goods. The findings show that the **majority of respondents strongly agree** that rice retailers are accessible and convenient. These findings are strongly supported by recent literature emphasizing that retail accessibility, store location, and operational convenience are critical determinants of consumer satisfaction and purchasing behavior. For instance, convenience store research highlights that strategic location near residential areas and ease of product access are essential in attracting customers and increasing satisfaction levels (Jaafri & Mansor, 2024) <sup>[35]</sup>. In addition, recent retail geography studies confirm that higher density of retail outlets improves accessibility and reinforces consumer preference for nearby stores, strengthening purchasing frequency (Alexander, 2025) <sup>[36]</sup>. Finally, consumer behavior research also emphasizes that convenience-oriented retail environments—characterized by quick access, nearby sellers, and efficient service—significantly increase demand and purchasing likelihood, validating the strong agreement observed in the table (Snir et al., 2022) <sup>[37]</sup>.

#### 4.12: Correlation Analysis

Correlation analysis explains the relationships between heuristics and consumer perceptions. The findings indicate that the **majority trend of responses supports strong heuristic influence**, particularly in representativeness and anchoring. These results are supported by the work of Zhu et al. (2022) <sup>[38]</sup>, whose research on consumer behavior emphasizes that the anchoring effect is a dominant force in price judgment, where initial information acts as a cognitive “glue” that settles a consumer’s perception of affordability regardless of objective market value. Additionally, recent findings by Martins and Pereira (2025) demonstrate that the representative heuristic is a primary driver for transaction efficiency; when a product aligns with a consumer’s mental prototype, it reduces cognitive load, thereby increasing the “speed of transaction” and overall perceived quality <sup>[39]</sup>. Their study confirms that these heuristics serve as essential shortcuts that bypass complex analytical thinking, especially in fast-moving consumer goods (FMCG) like rice, where convenience and rapid mental categorization are prioritized by the buyer.

#### Discussion for Question 1

The findings reveal that proximity and affordability are the primary determinants in consumers’ choice of rice retailers, indicating a strong preference for convenience and cost minimization. Many respondents preferred nearby stores to reduce transportation expenses, particularly gasoline costs, reflecting how economic pressures shape purchasing behavior. This supports the findings of Peterson-Wilhelm et al. (2022), who emphasized that consumers of staple goods tend to optimize costs by selecting more accessible sources of food supply <sup>[40]</sup>. Similar patterns were observed by Bairagi et al. (2021), who found that accessibility and socioeconomic conditions significantly influence rice purchasing decisions in developing countries.

In addition, the tendency to repeatedly buy from the same nearby retailers suggests habitual purchasing behavior, where consumers rely on familiarity and prior experience rather than extensive evaluation. Such behavior is consistent with research indicating that routine food purchases are often driven by convenience and accessibility rather than complex decision-making (Custodio et al., 2025) <sup>[41]</sup>. This is further supported by Nguyen et al. (2021), who highlighted that habitual buying and trust in local sellers shape consumer choices in rice markets <sup>[42]</sup>. Moreover, My et al. (2021) emphasized that limited income and access constraints reinforce localized purchasing behavior among households<sup>[42]</sup>. Overall, the results

confirm that economic constraints and spatial convenience strongly influence consumer decision-making in rice retailing.

### **Discussion for Question 2**

The results indicate that price and rice quality are the most influential factors affecting consumers' choice of retailer, highlighting the importance of both economic value and product attributes. Respondents consistently emphasized affordability, which aligns with findings that staple food purchases are highly price-sensitive, especially among budget-constrained households (Peterson-Wilhelm et al., 2022) <sup>[44]</sup>. Supporting this, Demont and Ndour (2021) found that price remains the most critical determinant in rice demand across developing economies <sup>[45]</sup>.

Beyond price and quality, accessibility and economic limitations also shape decision-making, as households tend to balance quality preferences with budget constraints (My et al., 2021) <sup>[46]</sup>. Moreover, Yang et al. (2021) found that consumers also consider health, safety, and quality signals when evaluating rice products. These findings suggest that consumers balance affordability with acceptable quality, forming a dual-evaluation process when selecting rice retailers <sup>[47]</sup>.

### **Discussion for Question 3**

The suggested improvements from respondents focus heavily on price fairness, affordability, and ethical pricing practices, indicating a strong sensitivity to rising rice prices. Many respondents emphasized that retailers should avoid excessive markups, which reflects concerns about price fairness in essential goods markets. This aligns with findings that consumers are more likely to react negatively when prices are perceived as unjustified, especially for staple commodities (Custodio et al., 2025) <sup>[48]</sup>. Supporting this, Singh et al. (2021) found that perceived price fairness significantly influences customer satisfaction and loyalty in food retailing <sup>[49]</sup>.

Additionally, recommendations regarding cleanliness, organization, and customer service highlight the importance of the retail environment in enhancing purchasing efficiency and satisfaction. Empirical evidence suggests that store conditions and service quality significantly influence consumer experience and retailer preference (Food Quality and Preference, 2025) <sup>[50]</sup>. This is reinforced by Konuk (2021), who demonstrated that service quality and store environment directly affect consumer trust and purchase intention <sup>[51]</sup>.

Moreover, suggestions such as providing discounts, ensuring product availability, and maintaining fair pricing strategies indicate that consumers value efficiency, transparency, and consistency in retail operations. Research by Schneider and Zielke (2021) further supports

that fair pricing and service quality jointly influence customer retention <sup>[52]</sup>. Additionally, Grewal et al. (2021) emphasized that promotional strategies such as discounts enhance perceived value and strengthen customer relationships <sup>[53]</sup>. Overall, the findings suggest that retailers must balance profitability with fairness and service quality to meet consumer expectations.

## 5. CONCLUSIONS

This study concluded that cognitive heuristics significantly influence the purchasing efficiency of rice retailers among consumers in Palayan City, Nueva Ecija. The findings revealed that consumers strongly rely on mental shortcuts, particularly representativeness and anchoring heuristics, when making rice purchasing decisions. Consumers tend to evaluate rice quality based on external cues such as appearance, retailer reputation, neat product display, and price, while previous price experiences and initial price exposure strongly affect perceptions of affordability and value. These heuristics enable consumers to make faster and more convenient purchasing decisions, especially under conditions of limited time, financial constraints, and routine buying behavior.

The study further established that consumers generally perceive rice retailers as affordable, accessible, and efficient in terms of transaction convenience. Price affordability, rice quality, accessibility, and transaction speed all received high levels of satisfaction among respondents, indicating that retailers are generally meeting consumer expectations. Correlation analysis confirmed that representativeness and anchoring heuristics are significantly associated with purchasing efficiency variables, particularly quality perception, accessibility, and transaction speed. In contrast, the availability heuristic showed no significant relationship with purchasing efficiency outcomes, suggesting that simple familiarity or recall alone is less influential compared to price and quality-related cues.

Additionally, the qualitative findings emphasized that practicality, affordability, convenience, and trust are the primary considerations in selecting rice retailers. Consumers prefer nearby and accessible stores to minimize transportation expenses and maximize convenience. The respondents also highlighted the importance of fair pricing, quality consistency, efficient service, and customer-oriented practices in improving their overall purchasing experience.

Overall, the study confirms that cognitive heuristics play a crucial role in shaping consumer behavior in rice retailing. While these heuristics improve decision-making efficiency and reduce cognitive effort, they may also encourage simplified judgments that rely heavily on price cues, familiarity, and visual indicators rather than objective product evaluation.

Therefore, understanding heuristic-driven consumer behavior is essential for retailers in developing effective pricing, marketing, and service strategies that improve customer satisfaction and purchasing efficiency.

## **6. Recommendations**

### **1. Rice retailers should maintain fair and stable pricing practices.**

Since consumers strongly rely on price as a basis for decision-making, retailers should avoid excessive price increases and ensure transparency in pricing. Fair and affordable pricing can improve consumer trust, satisfaction, and purchasing efficiency, particularly among low-income households.

### **2. Retailers should improve and maintain the quality of rice products.**

The study revealed that consumers highly value rice quality, including cleanliness, freshness, texture, and taste. Retailers should ensure proper storage, quality consistency, and clean product handling to strengthen customer confidence and encourage repeat purchases.

### **3. Retailers should enhance transaction efficiency and customer service.**

Fast and hassle-free transactions significantly contribute to customer satisfaction. Retailers should minimize waiting time, maintain organized selling processes, and provide prompt and respectful customer service to improve the overall purchasing experience.

### **4. Retailers should ensure accessibility and continuous availability of rice.**

Consumers prefer retailers that are nearby, convenient, and consistently stocked. Retailers should maintain sufficient rice supply, provide different rice varieties, and operate during convenient hours to meet consumer needs effectively.

### **5. Consumers should be educated on making more informed purchasing decisions.**

Since many consumers rely heavily on cognitive heuristics such as price cues, familiarity, and visual appearance, consumer awareness programs should be conducted to encourage objective evaluation of rice quality and value. This may help consumers avoid biased purchasing decisions and improve purchasing efficiency.

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