



Consumer perception and its influence on rice purchasing decisions in Tarapoto

Percepción del consumidor y su influencia en la decisión de compra de arroz en Tarapoto

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ABSTRACT

The present research analyzes the factors involved in the purchase and consumption of rice from the consumer's perception, as well as the situations encompassing the commercialization process. Therefore, the general objective is to analyze the influence of consumer perception on the decision to purchase rice, according to the variety available in Tarapoto. This research is quantitative in nature, with a non-experimental design, applying a hypothetical-deductive method at an explanatory level. A survey was conducted with 401 housewives, allowing the identification of indicators for the variables under study. The results showed that the Ferón rice variety is highly preferred, followed by the Capiróna variety as the second, third, and fourth choice. These preferences are influenced by perceived quality, emotional response, monetary price, non-monetary sacrifices, reputation, and the consumer's socioeconomic factors.

Keywords: Purchase decision; purchase choice; maximum likelihood; multinomial logit model; rice variety

RESUMEN

El presente trabajo de investigación analiza los factores en la compra y consumo de arroz en la percepción del consumidor y las situaciones que abarcan el movimiento de comercialización, por lo tanto, el objetivo general analiza la influencia de la percepción del consumidor en la decisión de compra de arroz, de acuerdo con la variedad existente en Tarapoto. Este trabajo de investigación corresponde a una de tipo cuantitativa no experimental, aplicando un método de hipotético-deductivo y de nivel explicativo. Se realizó una encuesta a 401 amas de casa, lográndose obtener los indicadores de las variables en estudio. Los resultados evidenciaron que el arroz de tipo Ferón es altamente preferido, cambiando en segunda, tercera y cuarta opción por la variedad de arroz Capiróna. Estas situaciones fueron influenciadas por la calidad percibida, respuesta emocional, precio monetario, sacrificios no monetarios, la reputación y los factores socioeconómicos del consumidor.

Palabras clave: decisión de compra; elección de compra; máxima verosimilitud; modelo logit multinomial; variedad de arroz



1. INTRODUCTION

Household purchasing behavior is heterogeneous because of the sociodemographic and economic characteristics of consumers in developing countries (Gonzales-Cabrera & Trelles-Arteaga, 2021). Product attributes, market information, previous experience, and market constraints constitute the inputs of the consumer's optimizing "black box," while purchasing decisions, consumption levels, and related market behavior represent its outputs. Based on the available information on products and prices, consumers choose the best set of products they can afford given their income, reflecting rational and self-interested behavior (Mullainathan & Thaler, 2000). Similarly, through a process of need recognition, consumers obtain the information they seek and make purchasing decisions by evaluating the best available alternative. Evidence has shown a correlation between purchasing decisions and consumer behavior (Moreno Morillo et al., 2022). Recent reports from other Peruvian provinces, such as Arequipa, have also identified external factors, including social media influencers, that may affect purchasing decisions (Chávez et al., 2020).

Banovic et al. (2021) report that, before choosing a product, consumers consider health-related aspects and are more likely to purchase higher-priced products. In this context, preference for the product increases, generating a close relationship between perceived healthiness and taste, particularly in food products, which can provide higher levels of satisfaction. Lim et al. (2021) indicate that consumers often perceive healthy foods as more expensive and less palatable; however, people with pre-existing conditions such as diabetes and other comorbidities show a greater willingness to pay for healthy foods with an appealing taste. In addition, purchasing confidence is directly related to familiarity with the establishment. Therefore, trust becomes an important factor in product choice because consumers may not know how to evaluate product characteristics or verify whether the production process has been carried out correctly (Canova et al., 2020).

Likewise, brand recognition contributes to consumer choice because it reduces perceived risk and provides information about product quality (Aufegger et al., 2021). Purchasing decisions also depend on the amount of information consumers have about a product, which is reflected in aspects such as quality, available quantity, color, size, appearance, and traceability (Hossain & Badiuzzaman, 2021). Determining attributes such as aroma, taste, and rice consumption frequency also contribute to the selection of a particular rice variety (Bairagi et al., 2021). Consumer heterogeneity is always present because some consumers prioritize taste, appearance, or physical characteristics, whereas others focus on nutritional value (Bairagi et al., 2020). When making a purchase decision, consumers consider several variables, including price, product origin, and the production method used. This indicates that trust, social norms, attitudes, perceptions, and subjective norms are determining factors (Yeh et al., 2021). Consumers also consider product brand, habits, and sociodemographic factors (Shahrabani, 2021).

Consumers' monetary income and sex are factors that help determine the brand of the product purchased (Rothstein, 2021). Consumer origin also plays a role (Wu et al., 2019). Higher monthly income contributes to greater consumer demand for rice packaging and labeling, together with educational level and type of employment (Bairagi et al., 2021). In some settings, socioeconomic status, the availability of products, places to eat, and the dishes offered play a predominant role in product consumption, consistent with the findings of Custodio et al. (2021). Therefore, the objective of the present study was to analyze the influence of consumer perception on rice purchasing decisions according to the varieties available in Tarapoto.

2. MATERIALS AND METHODS

2.1. Research design

The study was basic in nature and followed a quantitative approach involving the collection, analysis, and representation of data to examine the relationships among the study variables. Regarding the methodological approach, the hypothetical-deductive method was applied to study rice purchasing decisions in the city of Tarapoto. Based on an existing theoretical framework, statistical data were analyzed to test the hypothesis proposed in the study. In addition, a non-experimental design was used, in which data were collected without manipulating the variables, which were observed within their real-world context (Hernández et al., 2014).

2.2. Study variables

Two main variables were considered. The dependent variable was the rice purchasing decision, which was operationalized through the variety dimension and its indicators: Capirona, Esperanza, La Conquista, Ferón, and Costeño. The independent variable was consumer perception, comprising the dimensions of perceived quality (three indicators), emotional response (four indicators), monetary price (three indicators), non-monetary sacrifices (three indicators), and reputation (three indicators). Socioeconomic factors were considered as the control variable, with six indicators.

2.3. Unit of analysis

The unit of analysis consisted of consumers represented by housewives in the city of Tarapoto. The district of Tarapoto had a population of 73,015 inhabitants in 2015 (INEI, 2015). Considering an annual population growth rate of 0.73%, the population was estimated at 74,632 inhabitants in 2018. Dividing this figure by four persons per household yielded a total of 18,658 families or households, which constituted the population of the present study, with one housewife representing each household. To determine the sample, simple random sampling was applied to collect the information required to test the research hypothesis and address the study objectives. Therefore, considering a total population (N) of 18,658, a margin of error (e) of 0.05, a significance level of 0.05 (α), $p = 0.50$ (5 out of every 10 families have a preference for a particular rice variety), and $q = 0.50$ (5 out of every 10 families have no preference for a particular rice variety), a minimum sample (n) of 376 housewives was obtained. However, the final sample reached 401 housewives.

2.4. Data collection instrument

Data were collected through a survey, which made it possible to obtain statistical information corresponding to the indicators of the dependent, independent, and control variables. The instrument used was a questionnaire designed on the basis of the indicators defined for each dimension of the variables considered in the study. Regarding the instrument validation process, reliability statistics based on Guttman's lower-bound estimates were applied. A Cronbach's alpha value of 0.931 indicated a very high level of internal reliability of the questionnaire. Likewise, the six Guttman reliability estimates showed very high reliability across the different scenarios. The data obtained from the pilot survey were useful in ensuring that the questionnaire could be replicated in other settings with similar characteristics.

2.5. Data analysis

After the information was collected through the application of the instrument, the data were processed using a multinomial logit model based on the responses provided by housewives in the city of Tarapoto regarding their rice purchasing decisions. This type of model does not consider an inherent ordering among rice varieties, making it particularly useful for modeling the behavior of these consumers. Because the model depends on consumer perception, each indicator comprising the different dimensions was incorporated into the model. Together, these dimensions constituted the independent variable considered in the study. Indicators corresponding to the control variable were also included.

3. RESULTS AND DISCUSSION

3.1. Consumer perception

According to the results presented in Table 1, 7.23% of respondents stated that the price paid for one kilogram of rice was low, while 3.74% considered it high; in contrast, 89.03% indicated that the price was consistent with market conditions. Respondents who perceived the price level as either low or high reported an average price of 2.40 soles per kilogram. However, among those who considered the price to be in line with the market, the average was 2.20 soles. Likewise, 60.35% of respondents stated that the last kilogram of rice they purchased cost between 2.00 and 2.50 soles, while 20.45% reported paying between 1.50 and 2.00 soles per kilogram and 19.20% paid between 2.50 and 3.00 soles. These price differences are associated with the various rice varieties available in the Tarapoto market, which also differ in quality.

Table 1. Perception of rice price level according to the monetary value per kilogram paid by housewives in the city of Tarapoto

Price level	Price paid per kilogram			Total
	Between 1.50 and 2.00	Between 2.00 and 2.50	Between 2.50 and 3.00	
Low	3 (0.75%)	17 (4.24%)	9 (2.24%)	29 (7.23%)
Average	78 (19.45%)	215 (53.62%)	64 (15.96%)	357 (89.03%)
High	1 (0.25%)	10 (2.49%)	4 (1.00%)	15 (3.74%)
Total	82 (20.45%)	242 (60.35%)	77 (19.20%)	401 (100%)

There was relatively little variation among the different intrinsic characteristics considered in rice consumption, with mean values of approximately 14 points. Regarding variability, measured through the standard deviation (SD), grain separation showed the highest value, followed by color, taste, and aroma. According to the coefficient of variation (CV), all intrinsic characteristics showed homogeneous variability (CV < 15%).

Nevertheless, differences were observed among respondents in their assessments of these characteristics. For grain separation, 59.85% assigned scores between 10 and 15 points, 34.16% between 15 and 20 points, and 5.99% between 5 and 10 points. The remaining characteristics showed similar response patterns.

Considering the assessment levels for all intrinsic characteristics of rice consumption, 10.72% of respondents who assigned the lowest scores, between 5 and 10 points, had a mean score of 9.52 points and an SD of 1.06 points, representing homogeneous variation with a CV of 11.12%. Meanwhile, 56.55% of respondents who assigned scores between 10 and 15 points had a mean of 13.76 points and an SD of 1.23 points, also indicating homogeneous variation, with a CV of 8.92%. The remaining 32.73% assigned the highest scores, between 15 and 20 points, with a mean of 17.01 points and an SD of 1.24 points, corresponding to homogeneous variation of 7.29% according to the CV. Overall, the intrinsic characteristics of rice consumption received a mean score of 14.37 points, with an SD of 1.59 points and a CV of 11.06% (Table 2).

Table 2. Intrinsic characteristics of the different rice varieties available in the Tarapoto market according to housewives' ratings (points)

Intrinsic characteristics	Score (points)			Mean	SD	CV
	Between 5 y 10	Between 10 y 15	Between 15 y 20			
Grain separation	60	204	137	14.21	1.68	11.79%
Color	52	213	136	14.33	1.63	11.41%
Taste	27	220	154	14.76	1.57	10.62%
Aroma	33	270	98	14.17	1.47	10.40%
Mean	9.52	13.76	17.01	14.37	-	-

SD	1.06	1.23	1.24	-	1.59	-
CV	11.12%	8.92%	7.29%	-	-	11.06%

SD = Standard deviation; CV = Coefficient of variation.

According to Table 3, respondents primarily considered the image of the rice variety, followed by the place of purchase and, lastly, its origin, with mean scores of 12.82, 12.00, and 11.48 points, respectively. Their SD values were approximately 1.7 points, indicating homogeneous variation according to CV values below 15%, except for product origin, which had a CV of 15.28%. The intermediate rating level (between 10 and 15 points) accounted for the highest proportion of responses for variety image and place of purchase, representing 48.13% and 50.87% of respondents, respectively. Regarding rice origin, the highest proportion of responses was concentrated in the low rating level (between 2 and 10 points), representing 48.63% of respondents.

The second-highest rating category for both variety image and place of purchase was the low level (between 2 and 10 points), accounting for 30.42% and 38.40% of responses, respectively. In contrast, for rice origin, the second-highest category was the intermediate level, accounting for 41.40% of responses. The high rating level (between 15 and 20 points) was the least frequent for the three extrinsic characteristics, representing 21.44%, 9.97%, and 10.73% of respondents for variety image, origin, and place of purchase, respectively.

Respondents were divided into three groups according to their ratings of the extrinsic characteristics of rice. Those in the low-rating group had a mean score of 9.22 points and an SD of 1.58 points; those in the intermediate group had a mean score of 13.04 points and an SD of 1.28 points; and those in the high-rating group had a mean score of 17.03 points and an SD of 1.45 points. The low-rating group showed heterogeneous variation (CV > 15%), with a CV of 17.11%, unlike the other groups. Overall, the extrinsic characteristics of rice obtained a mean rating of 12.10 points and an SD of 1.72 points, corresponding to homogeneous variation of 14.24% according to the CV. These results indicate that the extrinsic characteristics of rice were rated at an intermediate level by the housewives surveyed.

Table 3. Extrinsic characteristics of the different rice varieties available in the Tarapoto market according to housewives' ratings (points)

Extrinsic characteristics	Score (points)			Mean	SD	CV
	Between 2 and 10	Between 10 and 15	Between 15 and 20			
Variety image	122	193	86	12.82	1.72	13.42%
Origin	195	166	40	11.48	1.75	15.28%
Place of purchase	154	204	43	12.00	1.69	14.12%
Mean	9.22	13.04	17.03	12.10	-	-
SD	1.58	1.28	1.45	-	1.72	-
CV	17.11%	9.82%	8.54%	-	-	14.24%

SD = Standard deviation; CV = Coefficient of variation

Women represented a higher proportion of respondents (88.28%) than men (11.72%). For both groups, ratings tended to fall within the intermediate level (between 10 and 15 points), with a mean score of 13.71 points, and the high level (between 16 and 20 points), with a mean score of 16.79 points. Both levels had the same SD of 1.22 points, although they showed slight differences in their CV values. The low rating level (between 6 and 10 points) had a mean score of 9.05 points and the highest SD, at 1.43 points, resulting in heterogeneous variation of 15.82% according to the CV.

Regarding the price-quality relationship of rice, respondents gave a mean rating of 14.61 points, with an SD of 2.32 points and a CV of 15.86%. These results indicate a favorable assessment of this indicator, although responses were heterogeneous because the CV exceeded 15% (Table 4).

Table 4. Responses of male and female housewives according to the price–quality relationship of the different rice varieties available in the Tarapoto market, based on ratings (points)

Sex	Value for money			Total
	Between 6 and 10	Between 10 and 15	Between 15 and 20	
Male	0	24	23	47
Female	21	207	126	354
Total	21	231	149	401
Mean	9.05	13.71	16.79	14.61
SD	1.43	1.22	1.22	2.32
CV	15.82%	8.91%	7.28%	15.86%

SD = Standard deviation; CV = Coefficient of variation.

Purchasing at the same place (“I have a preferred place to shop”) and repurchasing (“I always buy the same rice variety”) were the most highly rated emotional responses, with mean scores of 13.19 and 12.53 points, respectively, placing them at an intermediate rating level. They also showed the greatest variability, with SD values of 3.12 and 3.10 points and heterogeneous CV values of 23.65% and 24.77%. In contrast, immediate purchasing (“I immediately buy rice when I see the variety”) and impulse purchasing (“I saw it, liked it, and bought it”) received the lowest mean ratings, at 10.46 and 10.21 points, respectively. Their SD values were 1.74 and 3.06 points, with CV values of 16.68% and 30.01%. Impulse purchasing therefore showed the greatest variability and heterogeneous responses (CV > 15%).

Immediate and impulse purchasing showed similar patterns across rating levels. The largest proportions of responses were concentrated in the low level (between 5 and 10 points), at 49.13% and 52.37%, respectively, followed by the intermediate level (between 10 and 15 points), at 37.66% and 35.66%. The very low level (below 5 points) accounted for 8.73% and 9.48%, while the high level (between 15 and 20 points) represented 4.48% and 2.49%, respectively. For purchasing at the same place and repurchasing, the greatest similarity was observed in the intermediate level, representing 50.62% and 52.62% of responses, respectively, and in the very low level, representing 2.00% and 2.99%. Four groups of housewives were identified according to the rating level of their emotional response when purchasing rice. Those with the lowest response to this stimulus had a mean score of 4.74 points and an SD of 1.00 point, corresponding to heterogeneous variation of 20.99%. The next group had a mean score of 9.11 points and an SD of 1.33 points, with a CV of 14.63%. The groups with greater sensitivity obtained mean scores of 13.18 and 16.75 points, with SD values of 1.29 and 1.24 points and more homogeneous CV values of 9.80% and 7.39%, respectively.

Overall, respondents’ emotional response when purchasing the different rice varieties had a mean score of 11.60 points, corresponding to an intermediate level, with an SD of 1.76 points and heterogeneous variation of 15.14% according to the CV (Table 5).

Table 5. Emotional responses of housewives when purchasing the different rice varieties available in the Tarapoto market according to ratings (points)

Purchase behavior	Score (points)				Mean	SD	CV
	Less than 5	Between 5 and 10	Between 10 and 15	Between 15 and 20			
Immediate purchase	35	197	151	18	10.46	1.74	16.68%
Impulse purchase	38	210	143	10	10.21	3.06	30.01%
Purchase at the same place	8	86	203	104	13.19	3.12	23.65%
Repurchase	12	112	211	66	12.53	3.10	24.77%
Mean	4.74	9.11	13.18	16.75	11.60		
SD	1.00	1.33	1.29	1.24		1.76	
CV	20.99%	14.63%	9.80%	7.39%			15.14%

SD = Standard deviation; CV = Coefficient of variation

The trend regarding the monetary price–benefit relationship was similar for respondents of both sexes. The highest proportion of respondents assigned scores between 10 and 15 points, representing 55.32% of male respondents and 59.32% of female respondents. This group had a mean score of 13.44 points, an SD of 1.29 points, and a CV of 9.59%. Scores between 15 and 20 points accounted for 36.17% of male respondents and 29.94% of female respondents, with a mean score of 16.65 points, an SD of 1.06 points, and a CV of 6.39%. The smallest group, comprising respondents who assigned scores between 5 and 10 points, represented 8.51% of male respondents and 10.74% of female respondents, with a mean score of 9.29 points and an SD of 1.45 points, resulting in heterogeneous variation of 15.65% according to the CV.

Overall, housewives rated the monetary price–benefit relationship in rice consumption at an average of 13.99 points, with an SD of 2.49 points, reflecting heterogeneous variation of 17.83% according to the CV (Table 6).

Table 6. Housewives' responses regarding the monetary price–benefit relationship of the different rice varieties available in the Tarapoto market according to ratings (points)

Sex	Monetary benefit-cost ratio (points)			Total
	Between 5 and 10	Between 10 and 15	Between 15 and 20	
Male	4	26	17	47
Female	38	210	106	354
Total	42	236	123	401
Mean	9.29	13.44	16.65	13.99
SD	1.45	1.29	1.06	2.49
CV	15.65%	9.59%	6.39%	17.83%

SD = Standard deviation; CV = Coefficient of variation

Housewives assigned a mean score of 10.96 points to the time required to find a suitable rice variety, with an SD of 2.95 points and heterogeneous variation of 26.93% according to the CV. A similar pattern was observed for the effort required to obtain the desired rice variety, which received a mean score of 10.74 points and a higher SD of 3.05 points, corresponding to heterogeneous variation of 28.36%. Regarding the benefit exchange—that is, whether the sacrifice made by the housewife was compensated by the benefits provided by the rice variety—the mean score was 11.31 points, with an SD of 2.99 points and heterogeneous variation of 26.41%.

Four groups of housewives were identified according to their assessment of non-monetary sacrifice associated with a rice variety. A total of 5.74% of respondents had a mean score of 4.70 points and an SD of 1.15 points, corresponding to heterogeneous variation of 24.57%. Another 42.23% had a mean score of 9.06 points and an SD of 1.81 points, with a CV of 19.98%. A further 45.47% had a mean score of 12.80 points and an SD of 1.21 points, corresponding to a CV of 9.42%. Finally, 6.57% had a mean score of 16.61 points and an SD of 1.16 points, with a CV of 7.00%. Overall, housewives rated non-monetary sacrifice at a mean of 10.77 points, with an SD of 1.74 points and heterogeneous variation of 16.20% according to the CV (Table 7).

Table 7. Non-monetary sacrifice of housewives regarding the different rice varieties available in the Tarapoto market according to ratings (points)

Non-monetary sacrifice	Score (points)				Mean	SD	CV
	Less than 5	Between 5 and 10	Between 10 and 15	Between 15 and 20			
Search time	24	167	185	25	10.96	2.95	26.93%
Effort required	29	175	174	23	10.74	3.05	28.36%
Benefit exchange	16	166	188	31	11.31	2.99	26.41%

Mean	4.70	9.06	12.80	16.61	10.77	
SD	1.15	1.81	1.21	1.16		1.74
CV	24.57%	19.98%	9.42%	7.00%		16.20%

SD = Standard deviation; CV = Coefficient of variation

The place where any rice variety is purchased should inspire confidence among housewives, with this characteristic receiving a mean rating of 13.40 points and an SD of 2.69 points, resulting in heterogeneous variation of 20.07% according to the CV. Likewise, purchase intention toward a familiar establishment rather than an unfamiliar one received a mean rating of 13.56 points and an SD of 2.64 points, resulting in heterogeneous variation of 19.46%. A favorable attitude toward the establishment, associated with the absence of uncertainty regarding the rice variety, received a mean score of 13.76 points and an SD of 2.65 points, corresponding to a CV of 19.25%.

Regarding perceptions of the reputation of the place or establishment of purchase, housewives were classified into low (5–10 points), intermediate (10–15 points), and high (15–20 points) rating levels. The low level represented 18.62% of respondents, with a mean score of 9.45 points and an SD of 1.24 points, resulting in a CV of 13.11%. The intermediate level accounted for 55.94% of respondents, with a mean score of 13.53 points and an SD of 1.25 points, corresponding to a CV of 9.23%. The high level represented 25.44% of respondents, with a mean score of 16.69 points and an SD of 1.08 points, yielding a CV of 6.46%.

Overall, housewives rated the reputation of the place where rice varieties were purchased at a mean of 13.57 points, with an SD of 1.63 points and a CV of 12.01% (Table 8).

Table 8. Housewives' perceptions of the reputation of the place where rice varieties are purchased in the Tarapoto market according to ratings (points)

Reputation	Score (points)			Mean	SD	CV
	Between 5 and 10	Between 10 and 15	Between 15 and 20			
Trust	84	222	95	13.40	2.69	20.07%
Purchase intention	73	228	100	13.56	2.64	19.46%
Liking	67	223	111	13.76	2.65	19.25%
Mean	9.45	13.53	16.69	13.57		
SD	1.24	1.25	1.08		1.63	
CV	13.11%	9.23%	6.46%			12.01%

SD = Standard deviation; CV = Coefficient of variation

According to Table 9, no substantial differences were observed between male and female respondents. The most preferred place of purchase was the neighborhood store closest to the household, representing 47.38% of respondents, followed by a market stall, at 28.93%. The least preferred options were minimarkets and supermarkets, accounting for 12.97% and 6.73%, respectively.

Table 9. Housewives' responses regarding the purchase of rice varieties in Tarapoto according to type of establishment

Sex	Establishment				
	Nearest neighborhood store	Minimarket	Supermarket	Market stall	Wholesaler
Male	21 (5.24%)	7 (1.75%)	4 (1.00%)	14 (3.49%)	1 (0.25%)
Female	169 (42.14%)	45 (11.22%)	23 (5.74%)	102 (25.44%)	15 (3.74%)
Total	190	52	27	116	16

3.2. Rice purchasing decision according to variety

According to Figure 1, housewives' rice purchasing preferences varied according to rice variety. Ferón was the first-choice variety for the majority of respondents, whereas smaller groups selected Capirona, La Conquista, and Esperanza as their first preference. For the second preference, Capirona received the largest number of responses, followed by Esperanza and La Conquista, while only small groups selected Ferón and Costeño. Regarding the third preference, Esperanza received the highest number of responses, followed by Capirona and La Conquista. Finally, for the fourth preference, La Conquista received the highest number of responses, followed by Esperanza, Capirona, and Ferón.

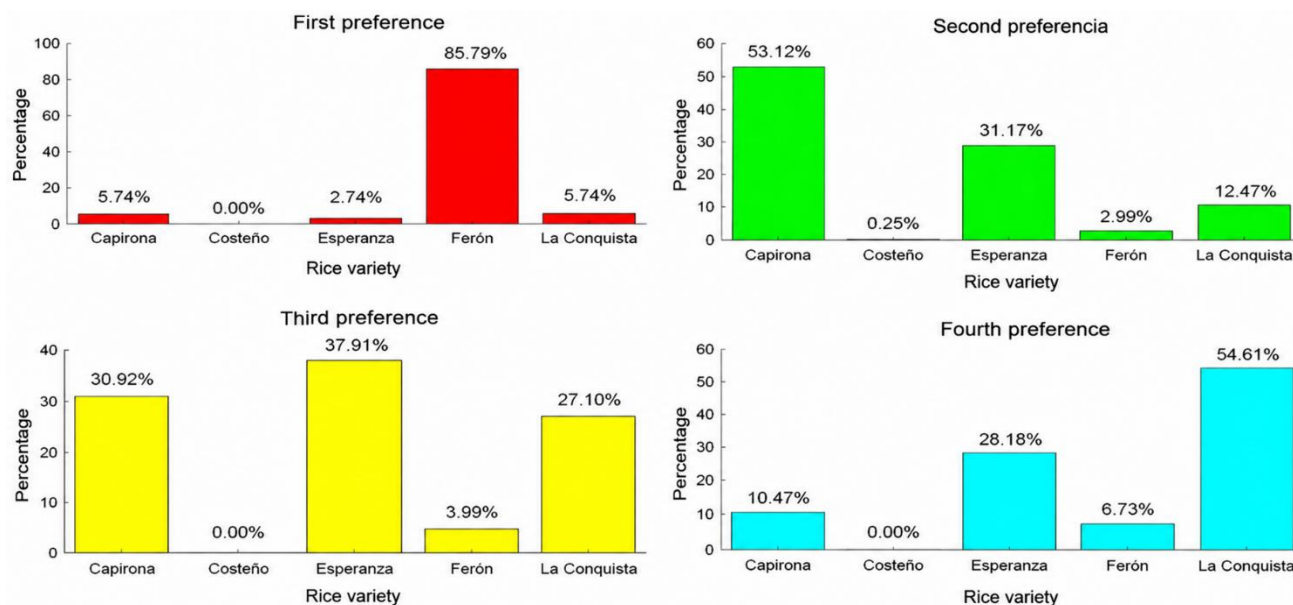


Figure 1. Housewives' preferences for purchasing rice according to variety in the Tarapoto market

Discussion

The results obtained in the present study show that consumer perception influences rice purchasing decisions. These findings are consistent with those reported by Rodríguez et al. (2010), whose study was conducted to promote bean production in Mexico in response to high demand. Their results showed that consumers have preferences and tastes according to variety, type, commercial brand, and presentation, with a strong preference for value-added products. Likewise, consumers make choices based on quality, color, size, health-related attributes, and the substitution effect resulting from price changes. These findings are consistent with the present study regarding the intrinsic characteristic of color for the La Conquista variety as the first choice (Model 1), Esperanza as the third choice (Model 3), and Capirona as the fourth choice (Model 4). Similarly, the price-quality relationship was another factor associated with the selection of Esperanza and La Conquista as fourth-choice varieties (Model 4). The substitution effect resulting from an increase in price was immediately reflected in Ferón, Capirona, La Conquista, and Esperanza as first-choice varieties (Model 1), where the price paid was related to the benefits obtained from consumption. This pattern was also observed for the Esperanza variety as the third and fourth choice (Models 3 and 4).

Likewise, Belmartino et al. (2012) examined the attributes considered by current and potential consumers before purchasing clothing in the Argentine market. Their study showed that purchasing decisions respond to attributes such as design and quality, consumer-specific characteristics, and trust in the place of purchase. For a consumer with an average age of 42 years, the probability of satisfaction increased by 70% with respect to garment quality, by 63% with respect to garment design, and by 31% when the consumer was a loyal customer of the establishment. These findings are also consistent with the present study, because housewives in Tarapoto consider the rice variety and both intrinsic and extrinsic quality attributes.

However, no statistically significant evidence at the 1% level was found that purchasing from the same establishment influenced the decision. Regarding consumers' socioeconomic factors, age, sex, and residential location (non-central and Cercado areas) were found to influence the first choice (Model 1); sex influenced the second choice (Model 2); and monetary income and sex influenced the fourth choice (Model 4).

Rivas Torrez (2014) demonstrated that consumers make purchasing decisions by considering their culture, their prior knowledge or reference regarding the product, and their needs. In comparison with the present study, these aspects were captured through variables such as repurchase behavior (always purchasing the same rice variety), the monetary price-benefit trade-off, the time required for housewives to search for their preferred variety, the effort involved, whether the sacrifice involved in the search is compensated by the benefits obtained, and a favorable attitude toward the purchase establishment. These factors were found to provide statistically significant explanatory contributions.

Sánchez and Vigaray (2009) studied individuals as consumer agents and examined their product preferences when making purchasing decisions. They considered shopping both a leisure activity and a means of maintaining social relationships. Differences in product choice were observed between women and men, as well as between younger and older individuals, while places offering a greater variety of products were preferred. The present study similarly shows that sex and age are important factors in the selection of a rice variety. Female consumers were more selective than male consumers, while increasing age reduced the probability of choosing a preferred variety. Monetary income also affected this choice, exerting a negative influence on the probability of purchasing a particular variety.

CONCLUSIONS

Consumer perception influences the choice made by housewives in the city of Tarapoto when deciding to purchase one of the available rice varieties. Likewise, consumers select a rice variety according to perceived quality (color, taste, and aroma), emotional response ("I saw it, liked it, and bought it" and "I always buy the same rice variety"), monetary price, non-monetary sacrifices, reputation, and socioeconomic factors, including average monetary income, age, sex, and residential location (non-central and Cercado areas).

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest related to the subject matter of this study.

AUTHOR CONTRIBUTIONS

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