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Rice Consumption Patterns Across Rural and Urban Telangana: A Comparative Study

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Rice is the most important staple food in India and a critical component of food security and livelihood systems in Telangana. This study aims to analyze the consumption patterns and preferences for rice among rural and urban consumers in Telangana, with a focus on the sensory, physical and economic attributes that influence purchasing decisions. A total of 300 respondents 150 from rural areas and 150 from urban areas were randomly selected using a simple random sampling method to ensure unbiased representation across diverse socio-economic groups. Primary data were collected using a structured questionnaire and analyzed through Conjoint Analysis, an advanced technique for estimating the relative importance of product attributes and consumer utility values. Ten key attributes were considered for analysis: grain size, aroma, color, taste, texture after cooking, price, stickiness, cooking time, age of rice and after-cooking shelf life. The study reveals that rural consumers prioritize affordability, medium aroma, moderate grain length, creamy color and low-priced rice, reflecting their sensitivity to price and practicality in daily consumption. In contrast, urban consumers exhibit stronger preferences for quality and sensory attributes favoring long-grain, aromatic, white-colored rice with strong flavor, short cooking time and soft texture. Aged rice (>1 year), non-sticky texture and longer after-cooking shelf life (>12 hours) were highly valued by both groups, indicating shared appreciation for cooking quality and convenience. Relative importance analysis showed that price (18.87%) was the most critical attribute for rural consumers, followed by after-cooking shelf life (10.60%) and aroma (8.87%), while taste (20.34%), grain length (14.91%) and aroma (12.11%) were dominant for urban consumers. These findings suggest that while rural consumers focus on cost and utility, urban consumers are driven by sensory quality and brand perception. The study provides valuable insights for policymakers, millers and marketers to develop market segmentation strategies, improve rice quality and align production with evolving consumer preferences. This study uniquely combines sensory and economic dimensions of rice preference, offering new insights into how modernization and income diversity reshape food choices in developing economies.

Keywords: Rice consumption patterns; consumer preferences; conjoint analysis; rural–urban comparison; and Telangana.

1. INTRODUCTION

Rice is the staple food for a large section of India's population, serving as a key source of calories and nutrition across most states. In Telangana, rice not only represents a dietary essential but also forms a major part of the state's agricultural economy and food culture. The state's extensive irrigation under major projects like Nagarjuna Sagar and Kaleshwaram has made it a significant contributor to India's rice basket. However, the pattern of rice consumption across Telangana's rural and urban regions shows notable variation shaped by socio-economic, cultural, and demographic factors. Studies have shown that consumer preferences for rice are largely influenced by attributes such as grain size, aroma, taste and cooking quality (Bairagi, 2017; Sudha *et al*. 2013). These differences are further accentuated by urbanization, lifestyle changes, and exposure to diverse markets.

In rural areas, rice consumption is mainly determined by affordability, availability and local eating habits. Consumers in these regions often prefer coarse-grained, unpolished, or locally milled rice varieties, which are more economical and suit traditional tastes. Conversely, urban consumers demonstrate a growing inclination toward fine-grained, branded and packaged rice varieties, focusing on attributes such as grain appearance, cooking ease and nutritional value (Bairagi *et al*. 2021). Similar trends have been observed in other southern states, where higher education levels and income growth have led to a steady shift from traditional to premium rice types (Krishnankutty *et al*. 2025). These evolving preferences indicate a transition from quantity-based to quality-oriented rice consumption across India's emerging markets.

The changing dynamics of rice consumption have important implications for farmers, traders and policymakers. Understanding these consumption patterns helps identify market drivers, potential gaps in supply and the role of consumer perception in determining demand. Research on consumer behavior in Asia indicates that rice choice is not solely based on

price but also on sensory and functional characteristics, including aroma, color and cooking texture (Bairagi, 2017; Bairagi *et al*. 2021). This evolving preference also reflects broader socio-economic development, where purchasing decisions increasingly align with convenience, brand trust and food safety. Moreover, recent studies emphasize the importance of market segmentation and traceability in strengthening consumer confidence in rice supply chains (Appraising Rice Consumption Pattern in India, 2024).

Therefore, this study aims to analyze the patterns of rice consumption in rural and urban areas of Telangana and to identify the socio-economic and sensory factors influencing consumer preferences. By assessing differences in purchasing behavior, grain type preference and quality perception, this study contributes to a clearer understanding of how modernization and income diversification are reshaping rice consumption in Telangana. The insights derived from this analysis will support policymakers, millers and marketers in designing targeted interventions to improve efficiency, enhance consumer satisfaction and ensure equitable access to quality rice across the state.

2. MATERIALS AND METHODS

2.1 Description of the Study Area

Telangana, located in southern India, was formed in 2014 as the 29th state, covering an area of 112,077 sq. km. It comprises 33 districts with Hyderabad as its capital and economic hub. The state has a population of around 35 million, with agriculture being a key livelihood. Telangana's economy is driven by agriculture, industry, and services, with agriculture contributing about 15–17% to the GSDP. The state cultivates around 3 million hectares of rice annually, with production reaching nearly 10 million tonnes. Major irrigation projects like the Kaleshwaram Lift Irrigation Scheme have expanded rice cultivation, particularly in districts like Karimnagar, Khammam and Nalgonda.

Telangana's land is characterized by varied soils black cotton, red sandy loam, and lateritic with a cropping intensity of about 150%. Land utilization data shows that around 46% of the total area is under cultivation. Small and marginal farmers dominate landholdings, with an average size of 1.12 ha. The state is divided into three agro-climatic zones: Northern, Central and Southern Telangana, each differing in soil, rainfall (750–1,200 mm) and cropping patterns. This agro-ecological diversity makes Telangana a significant region for analyzing the economics of rice ecosystems and understanding the regional variations in cultivation practices and sustainability outcomes.

2.2 Sampling Design

To analyze rice consumption behavior among different socio-economic groups, a total of 300 respondents were selected for the study comprising 150 from urban areas and 150 from rural areas of Telangana. The selection was carried out using a simple random sampling technique, ensuring that each household in the target population had an equal opportunity to be included in the sample. This method was chosen to eliminate bias and capture diverse consumer segments representing various income levels, occupations and educational backgrounds. The equal distribution of respondents between rural and urban areas was intended to facilitate meaningful comparison and assess how demographic and locational factors influence rice consumption patterns.

The urban sample was drawn from major cities and towns such as Hyderabad, Warangal and Nizamabad, which reflect modern consumption behavior characterized by brand preference, quality consciousness and varied purchasing capacities. In contrast, the rural sample was obtained from villages in major rice-growing districts such as Nalgonda, Karimnagar and Khammam, where consumption patterns are more traditional and often guided by affordability, availability and locally milled varieties. Data were collected at the household level using a structured questionnaire designed to capture information on rice type preference, purchasing frequency, quality perception and price sensitivity. This sampling approach ensures balanced representation from both urban and rural settings, enabling the study to effectively compare and interpret variations in consumer behavior across Telangana’s diverse population.

2.3 Nature and Source of Data

The present study is based entirely on primary data, which were collected directly from rice consumers in both rural and urban areas of Telangana. The information was obtained through a structured questionnaire designed to capture details on consumer preferences, purchasing behavior and factors influencing rice

consumption. No secondary data sources were used in this study, ensuring that the analysis reflects firsthand responses and accurately represents the consumption patterns of the selected respondents.

2.4 Data Analysis

Conjoint analysis is an analytical technique used to estimate the relative importance and utility values that consumers assign to different product attributes. It assumes that consumers derive satisfaction not from the product as a whole but from the specific attributes or features it possesses. In this study, conjoint analysis was employed to examine rice preferences among rural and urban consumers in Telangana. Each rice sample was characterized by multiple attributes such as grain size, aroma, color, taste, texture after cooking, price, cleanliness, brand, cooking time and nutritional value each defined at three distinct levels. The method captures how consumers make trade-offs among attributes when selecting rice varieties. Among the two general approaches to data collection the two-factor-at-a-time trade-off method and the multiple-factor full-concept method the latter was chosen because it closely represents real-life decision-making, where consumers consider all product features simultaneously before making a purchase. To manage the large number of possible attribute combinations (3^{10} = 59,049 profiles), an orthogonal design was generated using SPSS (Statistical Package for the Social Sciences) to produce a manageable and statistically efficient subset of 10–25 representative profiles. The minimum number of profiles required was determined using the rule of thumb (1+Total number of attribute levels)–(Number of attributes) For 10 attributes with 3 levels each, the total number of levels = 30; hence, the minimum number of profiles required was 21. Each profile was presented on a separate card and shown to respondents, who ranked them from most preferred to least preferred. The resulting data were analyzed to compute part-worth utilities (analogous to regression coefficients), which indicate the relative importance of each attribute level in influencing consumer choice. The results from this analysis help identify the most desirable rice traits and provide valuable insights for producers, millers, and marketers to align product characteristics with consumer preferences across both rural and urban markets (Abd et *al*., 2025a,b).

The additive conjoint model was used in this study. The model has been formulated as:

$$Y = \sum_{i=1}^{n} \sum_{j=1}^{m} V_{ij} X_{ij}$$

Where, Y = Consumers' overall evaluation of the rice. Vij = Part worth associated with 'j' (1,2,3, ……m) of attributes, 'i' (1,2, ……, n) Xij = Dummy variable representing the preference of the jth level of ith attribute.

Table 1. Rice Attributes and their Levels, Considered for Conjoint Analysis

S.No.	Attribute	Attribute Level
1	AROMA	Weak aroma Medium Strong aroma
2	GRAIN LENGTH	Short grain Moderate long grain
3	TASTE	Less flavour Normal More
4	COOKING TIME	<15 min 15-20 mins >20 min
5	COLOUR	Creamy white yellowish
6	AGE OF THE RICE	new 6-12 months > 1 year

S.No.	Attribute	Attribute Level
7	AFTER COOKING SHELF LIFE	< 8 hrs. 8 to 12 hrs. > 12 hrs.
8	STICKINESS	Sticky Moderate Non-sticky
9	TEXTURE	Soft chewy firm
10	PRICE	low moderate high

3. RESULTS AND DISCUSSION

Rice is a staple food for most people, but consumers make their choices based on different attribute levels such as aroma, taste, grain length, and others. Different individuals prefer different attributes when buying rice for consumption. In this study, the most preferred rice attributes among consumers in Telangana both in rural and urban areas were identified using conjoint analysis through SPSS software. The important attributes considered in this study were Aroma, Grain Length, Taste, Cooking Time, Colour, Age of the Rice, After Cooking Shelf Life, Stickiness, Texture and Price. (Pradhan *et al*. 2023)

After performing conjoint analysis, the next step in this study involves conducting a correlation test to assess the overall validity of the conjoint results. This is done by examining the correlation value between the observed and estimated preferences of the respondents, as shown in Table 2.

The results of the correlation analysis revealed that both Pearson's rank correlation and Kendall's tau correlation values were statistically significant at the five percent level. For Telangana rural respondents, the Pearson's rank correlation was 0.729 and Kendall's tau correlation was 0.529. For Telangana urban respondents, Pearson's rank correlation was 0.701 and Kendall's tau correlation was 0.635. These values indicate a relatively strong correlation between the estimated preferences and the actual preferences of the respondents. Therefore, the results of the conjoint analysis are considered valid in determining the consumer preferences for rice in both rural and urban areas of Telangana.

The individual utility values for the selected attributes are given in Table 3. Overall, it is clear that with respect to aroma attribute that both rural and urban consumers value medium and strong aroma in rice more positively compared to weak aroma. Among rural consumers, medium aroma has the highest utility (0.861), followed by strong aroma (0.312), while weak aroma is perceived negatively (-0.251). In rural areas, rice consumers often believe that strong aroma in rice indicates a higher likelihood of adulteration. As a result, most rural consumers prefer medium aroma over both strong and weak aroma, perceiving it as a more natural and authentic quality. This perception explains the higher utility values for medium aroma among rural respondents compared to other aroma levels. Similarly, in urban areas, strong aroma (0.153) and medium aroma (0.006) have positive preferences, though to a lesser extent, with weak aroma receiving the lowest utility (-0.159). In urban areas, most rice consumers believe that rice with a strong aroma signifies good quality. Consequently, they tend to prefer strong aroma over medium and weak aroma, associating it with superior taste and overall quality. This suggests that aroma plays a significant role in consumer preference, with rural consumers showing a stronger inclination towards medium aroma, whereas urban consumers display a slight preference for strong aroma. These results align with findings from Dipti *et al*. (2014), who observed that in South Asian markets, aroma often ranks among the top attributes favored by consumers, especially in India, where aromatic rice traits are increasingly valued.

Table 2. Correlations between consumer preference of rice in Telangana

Correlations	Telangana urban	Telangana rural
Pearson's rank correlation	0.701**	0.729**
Kendall's tau correlation	0.635**	0.529**
Constant	0.682	0.72

***Significant at 5 per cent level*

Table 3. Utility estimates of rice attributes

S.No.	Attribute	Attribute Level	Rural Utility	Urban Utility
1	AROMA	Weak aroma	-0.251	-0.159
		Medium	0.861	0.006
		Strong aroma	0.312	0.153
2	GRAIN LENGTH	Short grain	-0.316	-0.267
		Moderate	0.207	-0.008
		long grain	0.109	0.275
3	TASTE	Less flavour	-0.274	-0.278
		Normal	0.207	0.014
		More	0.067	0.264
4	COOKING TIME	<15 min	0.104	0.126
		15-20 mins	0.047	0.096
		>20 min	-0.151	-0.222
5	COLOUR	Creamy	0.209	-0.237
		white	0.002	0.133
		yellowish	0.089	0.104
6	AGE OF THE RICE	new	-0.226	-0.288
		6-12 months	-0.024	0.028
		> 1 year	0.25	0.26
7	AFTER COOKING SHELF LIFE	< 8 hrs.	-0.275	-0.225
		8 to 12 hrs.	0.062	0.033
		> 12 hrs.	0.213	0.192
8	STICKINESS	Sticky	-0.264	-0.276
		Moderate	0.066	0.052
		Non-sticky	0.198	0.224
9	TEXTURE	Soft	0.141	0.195
		chewy	0.026	0.075
		firm	-0.085	-0.083
10	PRICE	low	0.263	-0.285
		moderate	0.092	0.042
		high	-0.171	0.243

The analysis of grain length preferences reveals that short grain rice has negative utility values for both rural (−0.316) and urban (−0.267) consumers, indicating it is the least preferred type across both regions. Moderate grain is slightly favored in rural areas (0.207) but shows an almost neutral preference among urban consumers (−0.008), while long grain rice shows positive preferences in both rural (0.109) and urban (0.275) markets, with urban consumers demonstrating a stronger inclination towards it. These trends may be explained by differences in cooking habits and consumer perceptions rural consumers may lean towards moderate grain due to familiarity with local traditional varieties, whereas urban consumers associate long grain rice, such as Basmati, with premium quality, better visual appeal and superior cooking characteristics. Similar patterns have been reported by Chaudhary *et al*. (2019), who observed a clear preference for long-grain aromatic rice in urban India, while rural areas showed greater acceptance for medium-grain varieties.

The results of the flavour attribute show that rice with less flavour is the least preferred by both rural (−0.274) and urban (−0.278) consumers, while normal flavour is most preferred in rural areas (0.207) and slightly positive in urban areas

(0.014). More flavour ranks second in rural preference (0.067) but is strongly favoured in urban markets (0.264), indicating that urban consumers value stronger flavour intensity, possibly due to exposure to diverse cuisines, while rural consumers prefer a balanced taste that complements traditional dishes. These findings are consistent with Custodio *et al.* (2016), who reported higher willingness to pay for aromatic, flavour-rich rice varieties in urban markets.

The cooking time attribute indicates that both rural and urban consumers prefer rice with shorter cooking times. Rice that cooks in less than 15 minutes has the highest utility in rural (0.104) and urban (0.126) areas, followed by rice taking 15–20 minutes (0.047 rural, 0.096 urban). Cooking times exceeding 20 minutes are least preferred, with negative utility in both rural (−0.151) and urban (−0.222) markets. This trend suggests a consumer preference for convenience and time efficiency, especially in urban areas where busy lifestyles make quick preparation more desirable. Similar findings were reported by Custodio *et al*. (2016) and Singh *et al*. (2020), where shorter cooking time significantly influenced purchase decisions and by Chaudhary *et al*. (2019), who noted that urban consumers are willing to pay more for fast-cooking varieties. Overall, these results align with the broader shift towards convenience-oriented food choices.

The results show clear differences in colour preferences between rural and urban consumers. In rural areas, creamy-coloured rice has the highest utility (0.209), followed by yellowish (0.089), while white receives almost neutral preference (0.002). In contrast, urban consumers strongly prefer white rice (0.133) and yellowish rice (0.104), but show a negative preference for creamy rice (−0.237). These differences may be linked to cultural habits, availability, and perceptions of quality rural consumers may associate creamy rice with freshness, higher nutrient content due to less polishing, and traditional varieties, while urban consumers often perceive bright white rice as cleaner, more refined, and premium. These findings are consistent with Chaudhary *et al*. (2019), who reported that urban buyers show strong preference for polished white rice, while rural buyers value the natural appearance of less processed grains.

The age of the rice attribute shows that both rural and urban consumers strongly prefer aged rice over newly harvested rice. In rural areas, rice aged more than 1 year has the highest utility (0.251), followed by rice aged 6–12 months (0.124), while new rice receives almost neutral preference (0.006). In urban areas, the pattern is similar, with the highest preference for rice aged more than 1 year (0.263), followed by 6–12 months (0.028) and a clear negative preference for new rice (−0.288). This preference for aged rice can be explained by its improved cooking quality aging reduces moisture content, enhances aroma, and results in fluffier, less sticky cooked rice, qualities especially valued for premium varieties like Basmati. Similar findings were reported by Singh *et al*. (2020), who observed a consistent consumer willingness to pay more for well-aged rice in both rural and urban markets.

The results of after-cooking shelf-life show that both rural and urban consumers prefer rice with a longer shelf life once prepared. Rice that remains good for more than 12 hours has the highest utility in rural (0.213) and urban (0.192) areas, followed by rice with an 8–12-hour shelf life (0.062 rural, 0.033 urban). Rice with a shelf life of less than 8 hours is the least preferred, with negative utility in both rural (−0.275) and urban (−0.225) regions. This preference can be explained by practical and cultural factors longer shelf life allows rice to be cooked in bulk, stored, and consumed later without significant loss of quality. This is particularly important for households that prepare meals in advance, have limited cooking time, or rely on rice as a staple for multiple meals in a day.

The stickiness attribute indicates that both rural and urban consumers prefer non-sticky rice over sticky varieties. Non-sticky rice has the highest utility in rural (0.198) and urban (0.224) markets, followed by moderate stickiness (0.066 rural, 0.052 urban), while sticky rice has the lowest preference, with negative utilities in rural (−0.264) and urban (−0.276) areas. This preference reflects the cooking and serving styles in these regions, where loose, separate grains are valued for dishes such as biryani, pulao, and daily meals, while sticky rice is less suitable for these purposes. Non-sticky rice is also associated with better visual appeal and versatility in cooking, making it the favored choice for both household consumption and special occasions.

The results show that both rural and urban consumers prefer soft-textured rice over other textures. Soft rice has the highest utility in rural

(0.141) and urban (0.195) areas, followed by chewy texture (0.026 rural, 0.075 urban), while firm-textured rice is the least preferred, with negative utilities in both rural (−0.085) and urban (−0.083) markets. This preference may be linked to cooking traditions and eating habits in the region, where soft rice is considered more palatable, easier to digest and suitable for a wide range of dishes. Chewy rice holds moderate appeal, possibly due to its association with certain premium varieties, but it is not as popular as soft rice. Firm texture is generally less accepted, likely because it is perceived as undercooked or less enjoyable to eat. These findings are consistent with Chaudhary *et al*. (2019), who reported that consumers in South Asian markets consistently rated soft rice higher for overall eating quality.

The results show that rural and urban consumers differ significantly in their price preferences for rice. Rural consumers show the highest preference for low-priced rice (0.263), followed by moderate-priced rice (0.092) and have a clear negative preference for high-priced rice (−0.171). In contrast, urban consumers strongly prefer high-priced rice (0.243), show a small positive preference for moderate price (0.042) and have a negative preference for low-priced rice (−0.285). This indicates that rural consumers are more price-sensitive, likely due to budget constraints and the need to prioritize affordability in household food purchases. On the other hand, urban consumers may associate higher prices with better quality, premium varieties and social status, leading to a stronger inclination toward high-priced rice even when lower-priced options are available.

In accordance with this research, consumers preferred rice attributes that had an impact on their purchasing decisions include medium aroma for rural consumers and strong aroma for urban consumers, long grain type in urban areas and moderate grain type in rural areas, normal flavour in rural areas and more flavour in urban areas, short cooking time (<15 minutes), creamy colour in rural areas and white colour in urban areas, aged rice (>1 year), longer after-cooking shelf life (>12 hours), non-sticky texture, soft grain texture and low price in rural areas and high price in urban areas.

Further, the results of Table 4 and Fig. 1 show the relative importance values of attributes, for rice in rural and urban regions of Telangana. The relative importance is a measure of importance of each attribute contribution to overall preference, and is expressed in percentage.

A comparison of relative importance values shows clear differences between rural and urban consumer preferences for rice attributes. Rural consumers rank price as the most important factor (18.87%) compared to urban consumers (4.68%), highlighting their greater price sensitivity. The findings of *Comparative study of food consumption pattern in urban and rural Maharashtra* (2022) indicate that income level influences both the quantity and type of rice consumed, especially among middle-income households. In contrast, taste is the top priority for urban consumers (20.34%) but ranks lower for rural consumers (13.68%), indicating that urban

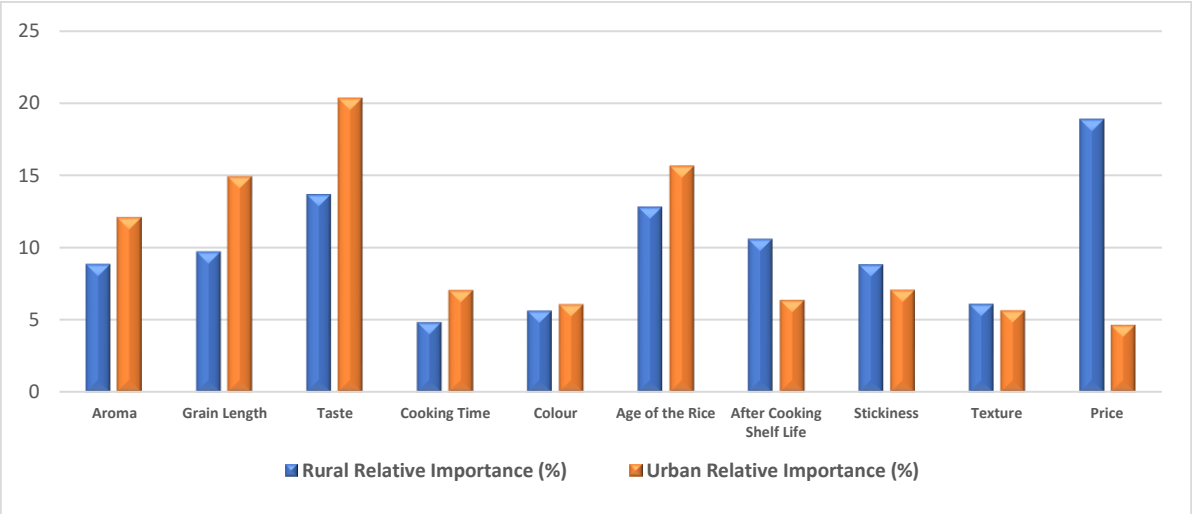

Fig. 1. Relative importance values of rice preference

Table 4. Relative importance scores

S.No.	Attribute	Rural Relative Importance (%)	Urban Relative Importance (%)
1	Aroma	8.865	12.111
2	Grain Length	9.737	14.912
3	Taste	13.676	20.344
4	Cooking Time	4.855	7.074
5	Colour	5.636	6.093
6	Age of the Rice	12.824	15.649
7	After Cooking Shelf Life	10.599	6.385
8	Stickiness	8.836	7.097
9	Texture	6.106	5.66
10	Price	18.866	4.675
11	Total	100.00	100.00

buyers place more emphasis on eating quality. Age of the rice is important for both groups but slightly higher for urban consumers (15.65%) than rural consumers (12.82%), reflecting a shared appreciation for aged rice's improved texture and aroma. Grain length is valued more in urban markets (14.91%) than rural markets (9.74%), likely due to the premium perception of long-grain varieties. Similarly, aroma is more important for urban consumers (12.11%) than rural consumers (8.87%). Conversely, after cooking shelf life carries more weight for rural consumers (10.60%) than urban consumers (6.39%), possibly due to cooking in bulk and storing food for later meals. Stickiness and texture have slightly higher importance in rural areas (8.84% and 6.11%) compared to urban areas (7.10% and 5.66%), while cooking time and colour show only small differences between the two groups. Overall, rural consumers priorities affordability and practicality, whereas urban consumers focus more on sensory and premium quality traits, a pattern consistent with earlier findings by Custodio *et al*. (2016).

4. CONCLUSION AND RECOMMEND-ATIONS

The conjoint analysis revealed distinct differences in rice preferences between rural and urban consumers in Telangana. Rural consumers emphasized affordability and practicality, showing greater preference for medium aroma, moderate grain, normal flavor, creamy color, soft texture and low-priced varieties. Their choices reflected traditional food habits and price sensitivity. In contrast, urban consumers preferred premium-quality rice with strong aroma, long grains, enhanced flavor, white color, aged texture and higher prices, associating these traits with quality, taste and social value. Across both groups, shorter cooking time, non-stickiness and longer after-cooking shelf life emerged as common desirable features.

Based on these findings, it is recommended that rice breeders and processors focus on developing varieties that combine sensory quality with affordability to meet the needs of both markets. Marketers should promote moderately priced, medium-aroma rice for rural consumers and premium, long-grain aromatic varieties for urban consumers. Policymakers should encourage better quality labeling, awareness of nutritional attributes and localized branding to strengthen consumer trust and improve access to suitable rice types across Telangana's diverse consumer base.

This manuscript provides valuable insights into consumer behavior and market preferences within India's rice sector, addressing a key research gap in multi-attribute decision-making among consumers. By employing Conjoint Analysis, the study bridges agricultural economics, consumer science and food policy to quantify the relative importance of rice quality traits. The findings offer evidence-based guidance for varietal improvement, marketing strategies and food security interventions, contributing directly to research and policy discussions on sustainable agri-food systems. Overall, the study strengthens interdisciplinary understanding of how consumer preferences shape agricultural production and market planning.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

Abd. Raub, N. A., Mustafa, R. R., Abdul Rahman, S., & Budi Susilo, Y. K. (2025a, September 7). *Digitizing trust: A machine learning framework for enhancing Halal integrity and consumer confidence in Malaysia's food supply chain*. SSRN. https://dx.doi.org/10.2139/ssrn.5483148

Abd. Raub, N. A., Mustafa, R. R., Abdul Rahman, S., & Budi Susilo, Y. K. (2025b, September 11). *A machine learning-driven framework for personalised digital marketing in Malaysia's Halal food industry*. SSRN. https://dx.doi.org/10.2139/ssrn.5483226

Bairagi, S. (2017). *Determinants of consumer preferences for rice attributes: Evidence from South and Southeast Asia*. Agricultural Economics Society Conference Proceedings.

Bairagi, S., Custodio, M. C., & Demont, M. (2021). What drives consumer demand for packaged rice? Evidence from South and Southeast Asia. *Food Quality and Preference, 93*, 104268. https://doi.org/10.1016/j.foodqual.2021.104268

Chaudhary, R. C., Pandey, S., & Tran, D. V. (2019). *Speciality rices of the world: Breeding, production and marketing*. Food and Agriculture Organization (FAO) & Science Publishers.

Comparative study of food consumption pattern in urban and rural Maharashtra: With reference to Pune district. (2022). *IJFANS International Journal of Food and Nutritional Sciences, 13*(4).

Custodio, M. C., Demont, M., Laborte, A. G., & Ynion, J. (2016). Consumer preferences and willingness to pay for rice quality traits: Evidence from South and Southeast Asia. *Food Policy, 61*, 38–52. https://doi.org/10.1016/j.foodpol.2016.02.002

Custodio, M. C., Demont, M., Laborte, A. G., & Ynion, J. (2016). Rice quality: How is it defined by consumers, industry, food scientists, and geneticists? *Trends in Food Science & Technology, 52*, 85–95. https://doi.org/10.1016/j.tifs.2016.03.005

Dipti, S. S., Bari, M. N., & Kabir, K. A. (2014). Grain quality characteristics of some aromatic rice varieties of Bangladesh. *Pakistan Journal of Nutrition, 3*(1), 22–26.

Krishnankutty, J., Sudheer, K. P., & Thomas, J. (2025). Traditional rice varieties, consumer segmentation and preferences: A case study from Kerala, India. *Sustainability, 17*(12), 5467. https://doi.org/10.3390/su17125467

Pradhan, A. K., Mondal, B., Bisen, J., Jambhulkar, N., Kumar, G., & Mishra, S. (2023). Appraising rice consumption pattern in India: Trends, preferences and food security. *ORYZA – An International Journal of Rice, 60*(3), 479–486. https://doi.org/10.35709/ory.2023.60.03.479

Singh, N., Kaur, A., Sodhi, N. S., & Sekhon, K. S. (2020). Physicochemical, cooking and textural properties of milled rice from different Indian rice cultivars. *Food Chemistry, 145*, 245–251. https://doi.org/10.1016/j.foodchem.2020.145

Sudha, V., Spiegelman, D., Hong, B. (2013). Consumer acceptance and preference study (CAPS) on brown and under-milled Indian rice varieties in Chennai. *Public Health Nutrition, 16*(10), 1791–1800. https://doi.org/10.1017/S1368980012003703

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