MARKETING STRATEGY FOR TELANGANA SONA RICE

A project executed by **Indian School of Business**
in association with **PJTSAU** and **The Government of Telangana**

November 2020

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EXECUTIVE SUMMARY

Telangana Sona is a rice variety highly beneficial to all stakeholders involved – farmers, millers, and consumers. However, the rice currently has a small market and is primarily consumed within the State of Telangana. Given the increasing demand for healthier meal options due to the growing incidences of lifestyle diseases, the health benefits of the new paddy variety, and the interest shown by millers and farmers, the government has earmarked 10 lakh acres for cultivating the Telangana Sona rice. The ensuing logical step would be to develop a proper branding and marketing campaign for the variety to bring it to end consumers and make it a staple diet.

To achieve these objectives, we conducted marketing research that involved interviewing different stakeholders, such as agricultural research scientists, millers, and consumers. The study also included designing, collecting, and analyzing data from a survey to understand rice consumption patterns. We used the information collected to conduct a segmentation and positioning analysis and understand the general consumption patterns of rice in Telangana, Andhra Pradesh, West Bengal, and Maharashtra. These, among other states in the country, are significant rice consuming states. Our studies show that Telangana Sona rice is popular solely in Telangana, with low awareness in other states.

However, Telangana Sona's awareness, even within the state, is significantly less than other rice varieties, such as Sona Masoori and Basmati, among others. In terms of attributes, the study respondents accredit rice as healthy and nutritious, the two top parameters they use to purchase any food product. An effective approach to enable the adoption of Telangana Sona in daily consumption is through word-of-mouth by people who consume the rice variety and know about its taste and health and nutritious benefits.

Through our primary research, we identified two strong influencer channels - word-of-mouth through friends and family and product suggestions from Kirana stores. Further, data suggest that distribution channels must be strong to reach the mass market. Although e-commerce is booming in urban India, it is still at a very nascent stage. However, the e-commerce industry continues to capture young customers in the urban market.

Our segmentation analysis suggests six different consumer segments, all with different preferences for rice. The largest segment in our data, *Health Pioneers,* care the most about health and the least about taste. The other segments are more concerned about other aspects of rice, such as taste. Overall, based on our research, we recommend the following two key ideas to be communicated through the positioning plan for Telangana Sona – healthy and tasty. It is important to note that besides the *Health Pioneers* segment, almost every other segment is concerned with taste. Therefore, unless a segmentation-specific positioning strategy is employed, the rice's health and taste attributes must be emphasized to reach the mass market. More detailed recommendations on other aspects of the marketing mix, such as pricing, distribution, and branding, are provided in the report.

Rice is the staple food of a significant proportion of the Indian population. For instance, India's overall rice consumption was 102 million tons in 2019, with a per capita consumption of 72 kg/year. Further, a Business Monitor International (BMI) research report finds that expenses on food products such as rice, bread, and cereals account for 32.6% (Rs. 3.9 lakh crore) of the total expenditure and can potentially grow by 10.3% till 2024. Therefore, it is not surprising that a significant population of Indian farmers depend on rice production, and paddy is cultivated in the country at a substantial scale. For the period 2016-2019, an average of 438 lakh hectares was apportioned for rice cultivation. In these three years, 113 million tons of rice were produced on an average, with yields of about 2600 kg/hectare[1].

Procurement of cultivated rice typically happens through government bodies, local millers, and private companies. It is then distributed through the public distribution system (PDS) or traditional Kirana stores, hypermarkets, supermarkets, and convenience stores. In the non-PDS channel, traditional grocery stores (Kirana stores) account for 87% of the overall quantity distributed. The remaining quantity is split across hypermarkets (8%), supermarkets (4%), and convenience stores (1%).

Though rice was traditionally bought loose from distributors, the distribution of packaged rice is an emerging trend. Packaged rice consumption was at 3.8 million tons in 2019 and grew at 18% CAGR in the 2014-19 period. Further, it is expected to grow at a CAGR of 12% for 2019-24. The factors driving the growth of packaged and branded rice consumption are: a) a rise in urbanization, b) the spread of modern grocery retail outlets, c) a transition to a busy and hectic lifestyle, and d) an increase in health consciousness among consumers. Thus, consumers now prefer packaged and branded items for consumption because of their substantial convenience and availability. The above trends hold for both basmati and non-basmati rice varieties.[2] Sales for packaged rice amounted to Rs. 47,000 crore in 2019.

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[1] Ministry of Agriculture – Annual Report 2019-20
[2] Euromonitor Passport – December 2019 – Rice, pasta and Noodles in India

While rice is one of India's staple crops and contains several nutrients and minerals, it has been targeted recently for its role in lifestyle-based diseases such as cardiac problems, hypertension, cancer, diabetes, and obesity. An increase in the incidences of these diseases has been attributed to an increase in a sedentary lifestyle, stress levels, and pollution. It has led to a renewed focus on regular food habits. Rice has been targeted for its high carbohydrate and sugar content, as well as a high glycaemic index.

While ameliorating their eating habits, most people consider including food items and processes to improve their health. Factors like digestibility of food, high fiber content, minimal food processing, and physicochemical and cooking properties such as alkali spreading value, nutritional factors, cooking time, presence of micronutrients, etc., play a significant role in improving one's health. Hence, the way forward is to provide an alternative to people that supports their current consumption choices while simultaneously addressing their health and nutritional concerns.

Effectively, Professor Jayashankar Telangana State Agricultural University (PJTSAU)'s new paddy variety, "Telangana Sona," offers a feasible and viable solution to these concerns. Telangana Sona (RNR 15048) has several positive attributes: a distinctive flavor, higher protein composition, carbohydrates, energy, Vitamin B3, and low glycaemic index. This new healthy variant of rice needs to cater to the demands of the population migrating towards healthy variants. It should also act as a viable alternative to the large ecosystem of farmers, millers, and agricultural supply chains that depend on production, milling, and the supply of rice to the Indian households.

Telangana Sona is a climate-smart variety, which can save 2-4 thousand million cubic feet (tmc) of water and Rs. 20 crores on pesticide use for every one lakh acre of land cultivated with the rice variety. Telangana Sona is produced to replace the traditionally grown long-duration rice varieties. The rice is highly suitable for both Kharif and Rabi seasons and, being superfine, fetches a higher price over other fine-grain varieties. The rice is fine-grain, high-yielding, good quality, and has high blast resistance (making it a suitable grain for milling). Thus, Telangana Sona has proven

to be one of the excellent rice varieties in Telangana. Also, this variety is advantageous for farmers, as it grows in a relatively shorter time (30 days lesser than other varieties). The grain variety is short and slender, has good head rice recovery (a milling quality attribute), and has a high-yield potential, making it a good and premium variety suitable for cultivation. Rice millers prefer Telangana Sona as it leaves lesser-broken grains after milling, thereby lesser wastage than other varieties. It requires fewer pesticides, including nitrogen, and thus, releases fewer greenhouse gases. Furthermore, the paddy variant has a low Glycemic Index (GI) of 51.5% compared to the usual rice variant with a GI of 56.5%, making it a preferred choice for health-conscious consumers.

Telangana Sona is very rich in fiber (3g per 100g of rice), which helps develop a healthy appetite and reduces calories. It further boosts the consumer's immunity and improves their overall health. The rice variant is also very rich in protein (8g per 100g of rice), which offers health benefits, including muscle building, weight-loss, and building hormones and anti-bodies. Further, this rice is also low in fat (0.2g per 100g of rice). It contains copious quantities of protein and carbohydrates, two essential macronutrients important for the body's growth.

Substantial strides have been made under the governance of Honourable Chief Minister of Telangana, Shri K. Chandrashekar Rao, as well as APC & Secretary, Department of Agriculture, Dr. B Janardhan Reddy IAS, to increase the cultivation of this superfine variety of rice by 10 lakh acres in the cultivation seasons of 2020, from its currently modest levels. With the increase in supply, the current challenge is to create a coherent marketing and branding plan for Telangana Sona to raise awareness and stimulate demand for the rice variety in the mass markets. Accordingly, the key objectives of the study:

Objectives of the Study:

1. To study and gain insights into the consumption pattern of rice among rice consumers in India and elsewhere.

2. To create a marketing and branding plan to raise awareness of the Telangana Sona rice variety.

Key Marketing Research Questions:

The key marketing research questions to be addressed include understanding market size, rice consumption trends, purchase behavior concerning rice, consumer preferences on various attributes relevant to rice, and potential substitutes within existing rice varieties. These questions are listed below in detail.

1. **What are the current rice consumption and production patterns in India?** We will understand the current rice production and consumption in India. We also want to determine the rice quantity used for domestic consumption and the quantity exported. We will then seek to understand the different rice varieties consumed across the country.

2. **What are the key rice consumption trends across various demographics?** We will tend to derive the emerging trends and patterns in rice consumption and link them to demographics, geography, etc.

3. **What are the potential competitors to Telangana Sona?** This will help understand the consumption patterns of different rice varieties, the price points, and threats from any potential substitutes for rice.

4. **What are customer perceptions and preferences concerning rice consumption?** The research will delve into the key characteristics of rice, such as aroma, taste, cooking time, texture, etc., that are considered by customers while making their purchasing decision. We also seek to understand the growing preference for a healthy diet and lifestyle.

5. **What factors influence customer purchase behavior when it comes to rice consumption?** We seek to decipher the basis of customers' choice between premium and non-premium rice varieties. We also seek to understand consumers' purchase patterns concerning buying loose or packaged rice, consumer awareness of different rice varieties, and influences and influencers' roles on the final purchase behavior.

To obtain information on the above questions and subsequently perform analysis, we implement the following research design.

Table 1: Research Design with Timelines

Sl. No.	Research Design	Timeline
1.	Exploratory and Secondary Research	July 7, 2020
2.	Interviews and Qualitative Research	August 15, 2020
3.	Survey Design	Sep 1, 2020
4.	Survey Data Collection	Oct 5, 2020
5.	Data Analysis	Oct 15, 2020
6.	Report Writing and Submission	November 2020

The results and findings from this study will be used to create a marketing and branding campaign for Telangana Sona. We now describe these steps in detail.

Our exploratory and secondary research objective was to gain a deeper insight into the marketing environment and supply-side conditions concerning the Telangana Sona rice variety. During our research, we had numerous interactions with Dr. V Praveen Rao, the Vice-Chancellor of PJTSAU. We also interacted with Dr. Jagdeshwar Rao, the Director of Research, PJTSAU, and several other team members. Besides, through the good offices of Dr. B Janardhan Reddy, IAS, we also conducted interviews with the President of Telangana Rice Millers Association, Shri Gampa Nagender, to understand their perspective of the rice market. Finally, we supplemented this information with market research reports from Euromonitor and the Ministry of Agriculture, Government of India. The following is a summary based on our interactions with the different stakeholders and the materials provided by them.

RICE VARIETIES

Given the ubiquitous rice consumption across different parts of a diverse country like India, different rice varieties are consumed in different parts of the country. Rice varieties are classified under two broad categories: basmati and non-basmati. In India, basmati holds a market share of 16%, while non-basmati rice records a whopping 81% market share. The remaining 3% is for private labels and other rice varieties. We now touch upon rice classifications based on the length and texture of the grain. This is an illustrative but not exhaustive enumeration of the different rice varieties available.

Long Grain: True to its name, long-grain rice is slim and lengthy (more than 6mm) with an L/B (length to breadth) ratio of 3 and above. This type of rice typically includes basmati in India, which is used for cooking special dishes like biryani. The grains have a firm and dry texture. Some examples in this category include Pusa, Miniket, Sharbati, Patna, Sugandha, and Gandasale (Gandhakalasa).

Medium Grain: This type of grain is usually shorter and moister (5.5mm to 6.5mm), vis-à-vis long-grain variety, and typically has an L/B ratio of 2.5 to 3.0. Post cooking,

medium-grained rice tends to hold more water. It is less starchy and easy to digest. The popular varieties are Sonamasuri, Sambamasuri, Rajamudi, Wada Kolam, Balami, and Bhutmuri.

Short Grain: This rice is only slightly longer than its width (L/B ratio less than 2.5) and has a length of less than 6mm. Post cooking, this squat, plump rice looks soft and tender and is known for sticking together and clumping. Some of the popular varieties in this category include Sannakki, Patni, Ambemohar, and Kullakar.

In addition to the rice varieties mentioned above, another paddy variant with rising popularity is brown rice. As the name suggests, Brown rice is brownish and is obtained when only the husk (the outermost layer) is removed from the whole rice. This process causes the least damage to the rice's nutritional value and avoids the unnecessary loss of nutrients. Table 2 and Table 3 provide a classification of these rice varieties based on length and breadth.

Table 2: Classification of rice, based on milled rice length and breadth

Grain type	Length	L/B ratio	Class
Long slender (LS)	More than 6mm	3 and above	Coarse
Short Slender (SS)	Less than 6mm	3 and above	Superfine
Medium Slender (MS)	5.5mm to 6mm	2.5 to 3.0	Fine
Long Bold (LB)	6mm and above	Less than 3.0	Coarse
Short Bold (SB)	Less than 6mm	Less than 2.5	Coarse

Table 3: Classification of basmati rice based on milled rice length and breadth

Grain type	Length	L/B ratio
Extra Long Slender	More than 7.5mm	3 and above
Basmati	More than 6.6mm	3 and above

VALUE CHAIN ANALYSIS

The conversations with PJTSAU have helped us understand the benefits of producing and consuming the Telangana Sona rice variety for both the farmers and the end-consumers. Understanding the attributes of the rice variety enables us to better position the rice to the end-consumers. For the Telangana Sona rice variety, the seeds are provided to the farmers in various states. The farmers benefit from the production of this variety as it can be grown in both the Rabi and Kharif season, has a shorter life cycle to harvest, and is pest resistant. The rice harvest is then directly bought by the millers, who sell it to the retailers and e-tailers in various states. It is sold further to the end-consumers through distribution channels such as Kirana stores. Figure 1 provides a visual representation of the process.

Figure 1: Telangana Sona Value Chain

The value chain analysis helped us devise our research methodology to collect further information about the specifications and details of Telangana Sona rice and consumer preference and perception analysis. We decided to speak to the various stakeholders involved in the process. In particular, we planned to speak to the millers to understand the current pricing and distribution strategy employed for the rice variant. It would help us identify the gaps and the potential scope in increasing its accessibility and availability to the end-consumers.

INTERVIEW WITH RICE MILLERS' ASSOCIATION: SUMMARY

Stocking decisions: Retailers typically ask millers to supply a larger quantity of a certain variety when its demand among consumers is more. Pricing also plays a part in stocking decisions. Currently, millers sell Sona Masoori at Rs. 35-40/kg and Telangana Sona at Rs.40-43/kg to retailers. Most middle-class and upper-middle-class consumers purchase one or more of the following varieties: Sona Masoori, HMT, Telangana Sona, and Jai Shri Ram.

Consumer purchase decisions: Typically, consumers are informed by retailers about the different rice varieties available in the market. Interestingly, consumers ask for a specific variant, such as "Sanna Biyyam" (which means "slender rice" in Telugu). The retailer/miller then sells the rice variety asked by the consumer, which is available under the miller's brand name. More recently, some millers try to sell rice through online channels to capitalize on increased online grocery purchases.

Perception of millets: At retail stores in the urban areas, millets are comparatively more expensive than rice, creating a psychological barrier in the consumer's mind to replace rice with millets. However, because millets are more filling, a much lesser quantity is consumed by a typical consumer who chooses to substitute rice with millets. The millets quantity purchased in a month will be less than that of rice. Millets, which have been a staple grain in some rural areas for generations, are now being rediscovered for their health benefits. Moreover, there is a habitual mindset amongst people that rice must be consumed at least once a day. The market share of millets is only about 10%. Some consumers prefer to consume chapatis made of wheat at night.

Perception of Telangana Sona: Most consumers are aware of Telangana Sona as diabetics-friendly rice and have tried the variety to test the difference in taste and its effect on their blood sugar levels. Some consumers found Telangana Sona tastes better than Sona Masoori and that their blood sugar levels have dropped by almost 10%.

Availability of Telangana Sona: Currently, Telangana accounts for 70% of the market for Telangana Sona, while the remaining 30% is split between Karnataka, Tamil Nadu, and Mumbai. Telangana Sona is sold in its pure form and not adulterated with other rice varieties.

Glycemic Index level and Type 2 Diabetes:
To understand the glycemic index value of Telangana Sona and its effectiveness in reducing blood glucose levels, especially in patients with Type 2 diabetes, we referred to a publication in the American Journal of Health and Nutrition by Sobhana et al. (2019). The study establishes the following facts. First, the glycemic index of Telangana Sona was determined to be low (51.72 ± 3.39). In general, foods are categorized as low-GI (≤ 55), medium- GI (56-69), high-GI (≥70), based on the ability

of foods to raise blood glucose. Further, numerous studies have shown the beneficial effects of consuming low-GI meals on blood glucose responses in healthy individuals and individuals with diabetes. Second, the dietary intervention with Telangana Sona has been effective in managing type 2 diabetes and in the long-term management of the cardiovascular disease.

Overall, our exploratory and secondary research provided us with the following information. First, Telangana Sona is an innovative new product produced under the aegis of PJTSAU with improvements in attributes such as protein composition, carbohydrates, energy, and vitamin B3, while also having a low glycemic index. Further, this variety offers significant advantages to farmers due to its shorter cultivation period, suitability for Kharif and Rabi seasons, and pest-resistant properties. Finally, millers, who are also a significant part of the value chain, benefit from Telangana Sona as it leaves lesser-broken grains after milling, thereby resulting in lesser wastage than other rice varieties. It also requires fewer pesticides and fertilizers, including nitrogen, and has a lower greenhouse gas footprint. We also conducted interviews with prospective consumers.

Our objective in conducting in-depth interviews and surveys with end-consumers was to gather information about their current purchase and consumption patterns of rice and their preferences and perception towards different rice varieties. This would help us conduct a demographic analysis to segment the rice consumers and target the right consumer groups with the appropriate positioning and communication strategy.

An in-depth interview aims to delve deeper into consumers' preferences beyond the superficial one-line or one-word answers. The focus here is to gather more information from consumers to understand their motivation behind various purchase decisions. Accordingly, we constructed a questionnaire for in-depth interviews to gain insights into the rice consumption and preference patterns among India's rural and urban consumers. The interview guide is listed in the Appendix (Figure A1).

It is important to note that the questions enlisted in this Appendix are only indicative. While conducting the interviews, there was no structure to the sequence of the questions. The key intention is to obtain detailed information. Information collected from anywhere between the 5 – 50 interviews is considered good enough to collect the insights. We interviewed consumers by meeting them face-to-face; in some cases, the interviews were conducted on audio calls. Once we observed redundancy in responses after 13 interviews, we stopped the in-depth interviews and went ahead to design the survey.

We chose to probe into the details through individual interviews instead of focusing on group interviews, considering that each individual or family's food preferences significantly differ. After a brief training session on conducting an interview, we went ahead with gathering the information. We tried collecting information on the following areas:

Demographics: We wanted to get an insight into the consumer's daily lifestyle, age, education level, income bracket, family size, and residence. It would help us learn about the differences in consumption habits of people from different demographics. We interviewed people between 21 – 60 years, with varying income levels, from Telangana, Andhra Pradesh, West Bengal, and Maharashtra.

Consumption & Purchase Behavior: We wanted to learn more about a consumer's daily food habits, including their number of meals in a day, their food choices, and most importantly, their rice consumption pattern. We tried finding out how and where they purchase rice and how long they have been consuming their preferred rice variant. Further, we probed and investigated the reasons for consuming a particular rice variety, the factors that influenced their choice, and the amount of rice they consume every month. We also inquired about the different rice variants consumed in a single household and whether they were bought loose or packaged.

Awareness: By interacting with consumers, we were keen on finding out their awareness levels about different rice variants available in the market and the factors that influence them to try new varieties. We tried collecting information on what prompts them to switch to the new variety or stick to a particular rice variant they have been long using.

We also wanted to know about the sources from where they learned of a newly available rice variety and changed their purchase decision in the past due to different influencing factors. If consumers had changed the type of rice they consumed, we wanted to investigate the number of times they switched to other varieties of rice or alternative grains and the switch reasons. We also wanted to know about their perceptions of 'healthy food' and "healthy" consumption patterns.

In summary, the interviews designed was to gain insights into the daily food choices of our target audience, their perceptions and purchase behaviors of rice, and the impact of the nutrition and health trends on consumer's purchase and consumption patterns, as well as introducing these consumers to the Telangana Sona rice variety and gauging their perception of it.

The following is a summary of the findings from the 13 interviews that were conducted. Individual interview transcripts are available upon request.

Food consumption behavior: The staple meal varies by region but typically includes rice in at least one meal a day. In Telangana and Andhra Pradesh, rice is consumed during meals, with breakfast typically being leftover rice from the previous night, and lunch and dinner consisting of rice with vegetables, meat, curries, and pulses. For periodic indulgence, the people of these states typically consume biryani made of basmati rice. There is a significant shift toward consciously eating healthier meals. Focus has shifted to healthy breakfast options, such as oats, and substituting rice with wheat chapatis, raagi, sorghum, or other millets for dinner. For example, a 35-year old male respondent stated that his family mostly consumes cornflakes with milk, oatmeal, eggs, idly, millet dosa, suji, and atta noodles for breakfast.

Awareness of rice varieties: People aware of Telangana Sona were also aware of other rice varieties such as BPT, MTU, and Jai Shri Ram. It was observed that the rice varieties primarily consumed are Sona Masoori (30 % of Telangana/Andhra Pradesh respondents), Sambha Masoori (20% of Telangana/Andhra Pradesh respondents), and Wada Kollam (70% of Maharashtra respondents). Respondents were introduced to these rice varieties by friends/family, or had been consuming these for years, or discovered these varieties at their local grocer and decided to try them. On the other hand, respondents who consumed Telangana Sona rice were recently made aware of this variety through village extension services or workplaces or their contacts at PJTSAU (the developer of this rice variety). The key factor that persuaded the respondents to try this new variant is the health benefits it entails. For other varieties, the key factors leading to consumption are taste, availability, and affordability.

Characteristics of rice: Before purchasing a rice variant, respondents typically look for slender grain that looks old and has a medium polish. Post-purchase, respondents prefer rice that is quick to cook and easy to digest. While in certain parts of Maharashtra, respondents looked for sticky rice, the respondents from Telangana and Andhra Pradesh preferred non-sticky grains. For example, a 50-year old

respondent from Maharashtra preferred the Indrayani and Ambemohar varieties for their stickiness. However, a 53-year old respondent from Telangana said that he and his family stopped consuming a particular rice brand, called Cluster, as it became like a paste after cooking. Taste is also a crucial factor for rice that consumers use for everyday consumption; however, the aroma is not.

Perception towards healthy food: Nearly all respondents responded positively to making changes to their diet for a healthier lifestyle. They are actively considering replacing their current diet with healthier substitutes, provided the taste is not much compromised. Respondents believe that a 'healthy' rice variant has lesser sugar, carbohydrates, and fat content than other 'non-healthy' varieties. Although some of them had tried brown rice, they stopped consuming it as the taste was unpalatable. In a bid to eat healthier, respondents sometimes have oats at breakfast or millets at dinner instead of rice. However, according to them, neither of these are suitable substitutes for rice. For example, a 27-year old male respondent said that his family sometimes consumed wheat or jowar chapati and fruits during dinner but never replaced rice with other grains. A 50-year old female respondent said that her family had stopped consuming rice every alternate day due to health reasons.

Purchase behavior: The average quantity of rice consumed by a consumer is between 7 and 15 kg a month. Most families prefer buying rice in large quantities of up to 50 to 100 kg in a single purchase. Rice is typically purchased from hypermarkets or grocery stores, sourced from farms owned by self or by family/friends, or directly from millers. Sourcing rice directly from farms or millers is preferred for its low prices and quality assurance. For example, a 38-year old male respondent said that he preferred to buy directly from his village as he was sure of the quality. Rice is typically purchased loose, often in gunny sacks, as commercially packaged rice is usually not available in such high quantities that consumers buy.

Additionally, rice sellers tend to stock and sell local varieties in loose form at a lower rate. Respondents had a strong sense of trust in the place they purchase rice from and tend to be loyal to that source. They are similarly loyal to the brand and variety they buy. Lastly, the purchase decision is mostly made by the female head member of a typical family.

Purchase influencers: The most important influencer for purchase is recommendations from friends or family. Respondents stated that they also consider their local grocer or miller's recommendations from whom they regularly purchase. Availability of rice is a major influencer, with respondents choosing the variety that is easily available in the desired quantity and price they wish to purchase. Television ads are the most effective and preferred form of advertising. Social Media and YouTube ads are also increasingly becoming influential, particularly for the younger generations or the women of the house who watch culinary videos on YouTube. For example, a 50-year old female respondent said she follows food channels on YouTube, such as Kabita's Kitchen, for food recommendations. In contrast, a 35-year old male respondent said he finds out about new food products through social media platforms like YouTube, Instagram, and television ads.

Perception of Telangana Sona: The respondents who have tried or are currently using Telangana Sona stated that they chose the variant due to the health benefits associated with it. For example, a 46-year old male respondent said that his family has shifted to using Telangana Sona after learning about its low sugar content. Consumers perceive it as a superfine variety that is especially good for people with diabetes or looking for a healthy diet. Respondents liked the taste and the soft texture of the rice. However, some respondents did not like what they perceived as the sticky texture of the rice and its long cooking time. Interestingly, some respondents thought it was just a variant of Sona Masoori. Finally, most respondents found out about it from the recommendation of extension services in their towns/villages.

Summary: One key takeaway from the primary research interviews was that rice is not substitutable by any other grain for India's rice-eating population. However, consumers are aware of the drawbacks of eating rice every day and are looking for healthier rice options and their overall nutrition. The key aspects they look for in rice are a slender grain and either separate grains (in Telangana and Andhra Pradesh) or sticky grains (in Maharashtra), depending on their location. We have also understood that families tend to buy rice in large quantities from trusted sources to avail of low prices and quality assurance. When it comes to rice and other such important food products, respondents value recommendations from friends/family

and trusted sellers but are also open to recommendations from other sources such as Social Media, YouTube, and village extension services. Finally, among the people who know Telangana Sona, the rice is very well received for its health benefits and taste. Thus, our findings clearly suggest the need for extensive promotion of the rice variant for mass adoption.

PRIMARY RESEARCH –SURVEY QUESTIONNAIRE

After conducting in-depth interviews, our next step was to design a survey questionnaire and collect information from a representative sample of Indian consumers. Our objective with the survey design, collection, and analysis was to: a) complement and reinforce the analysis and findings from the in-depth interviews with the quantitative analysis of the data collected from the survey, b) obtain insights on perceptions and rice preferences and the different rice brands, and c) develop segmentation, targeting, and positioning plans for Telangana Sona rice. We used a blend of stratified and judgment sampling methodology for prospecting our respondents. The primary channel for data collection was social media, with requests sent through all friend and professional networks. Through the survey, we aimed to collect the following information:

➢ Identify various user groups, their characteristics, and the forces that drive their behavior about food and eating habits

➢ Identify the factors that influence a consumer's different food choices

➢ Understand the association/mindset of a consumer about healthy foods

➢ Understand the importance consumers attribute to different aspects of rice during the purchase and consumption of a rice variety

➢ Identify consumer perceptions for several rice varieties related to their various attributes, such as short-grained, medium-grained, and long-grained rice, millets, and brown rice

➢ Understand the familiarity, awareness, and perception of consumers toward different rice brands to enable the creation of a perceptual positioning map with respect to other food varieties

In general, obtaining consumer perceptions, importance, and familiarity concerning rice consumption and different attributes will help uncover factors that affect consumers' preferences for different rice varieties. The results obtained from this survey will help us form the marketing and branding strategy by understanding consumers' perception of rice and different substitutable varieties. It will also help us understand the rice consumption patterns of consumers from different regions and income groups.

Our sample size for the survey was 340 respondents, primarily from Andhra Pradesh, Karnataka, Maharashtra, Telangana, and West Bengal (Exhibit 1A in the Appendix). Out of the 340 responses, 156 completed the entire survey, while the remaining completed it in parts. 70% of the respondents were between the ages of 22 and 35, and 25% above the age of 35. Out of the 340 respondents, 260 had substantially completed the form, whose data forms the crux of our analysis. Details on the final survey that was implemented are provided in the Appendix. The key findings from the primary survey are described in the following.

Rice Consumption: Approximately 74% of the respondents consume rice daily, and 17% consume it between once to thrice a week. These figures give us an insight into the extent of weekly rice consumption in a household.
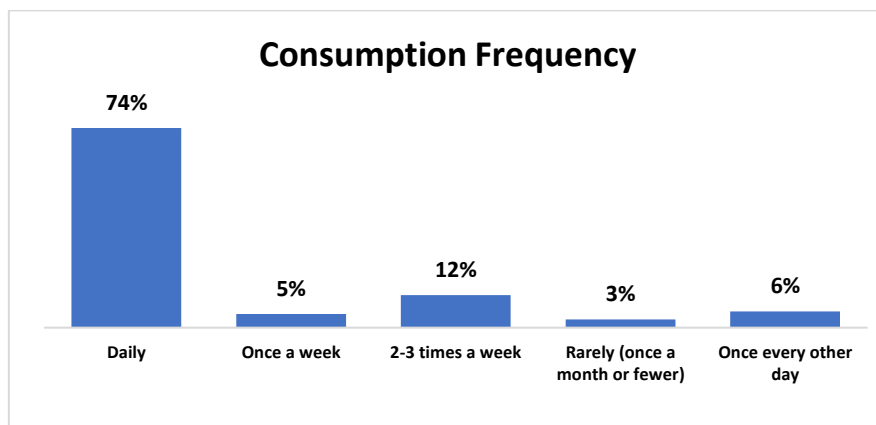
Figure 2 Frequency of consumption of Rice

Purchase Quantity: The most purchased rice quantity is between 5 and 15 kg per month, as evidenced by 36% of the respondents. The average purchase quantity is 16 Kg, with 59% of the respondents purchasing 5-15 kg per month, and only 18% of respondents purchasing more than 25 kg of rice per month. This is in line with our findings from the in-depth interviews.
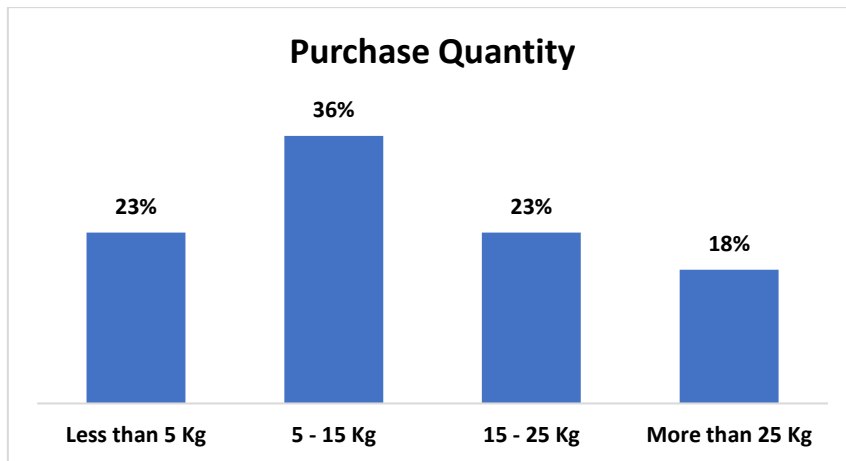
Figure 3 Purchase quantity per month

Influence on Purchase Decision: Nearly 73% of the respondents purchase a certain rice variety based on their family or friends' recommendations. Around 36% purchase rice varieties on recommendations of local Kirana store owners. The Telangana Sona rice distribution to local Kirana stores should be a prime focus, with good incentives given to these store owners to push the rice variety to the consumers.
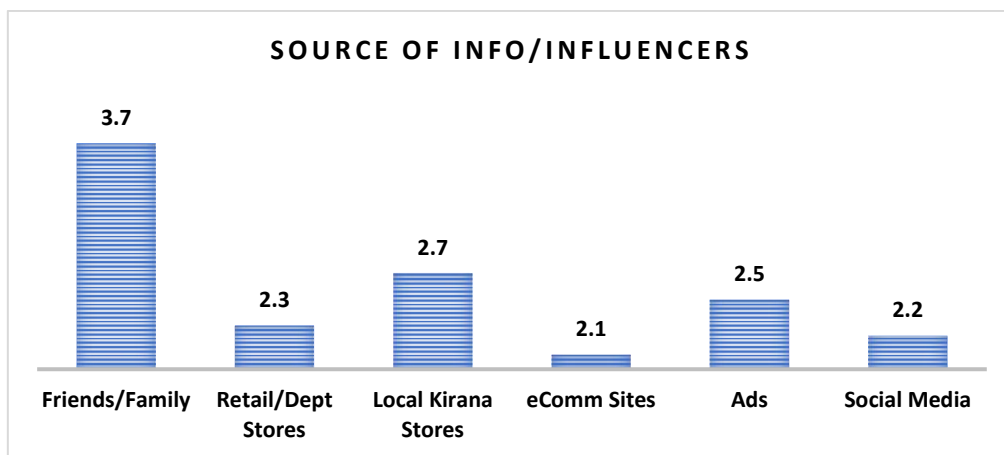
Figure 4 Source of Information to consumers

Purchase Channel: According to the respondents, the primary purchase channel for rice is the local Kirana stores, followed by departmental stores. Therefore, the distribution strategy for Telangana Sona should focus on these channels.
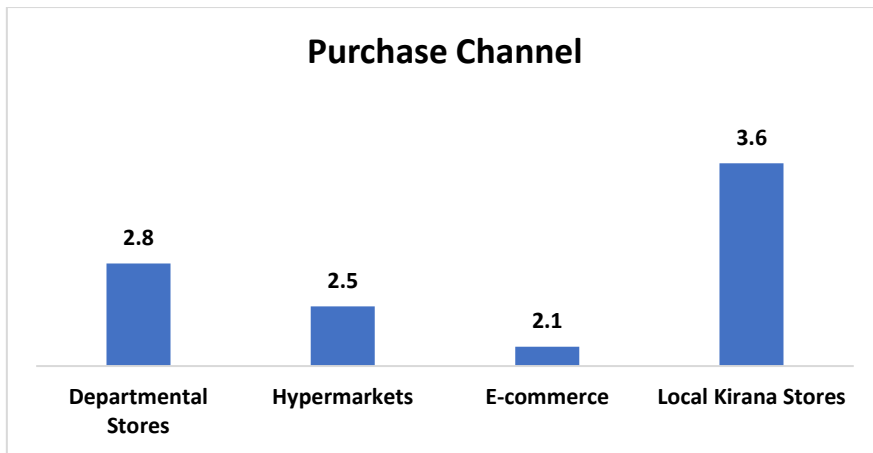
Figure 5 Preferred Purchasing Channel

Packaging Preference: Respondents prefer to purchase packaged rice, irrespective of the quantity they buy. Packaging may be in plastic bags or gunny sacks, as evidenced by primary interviews.
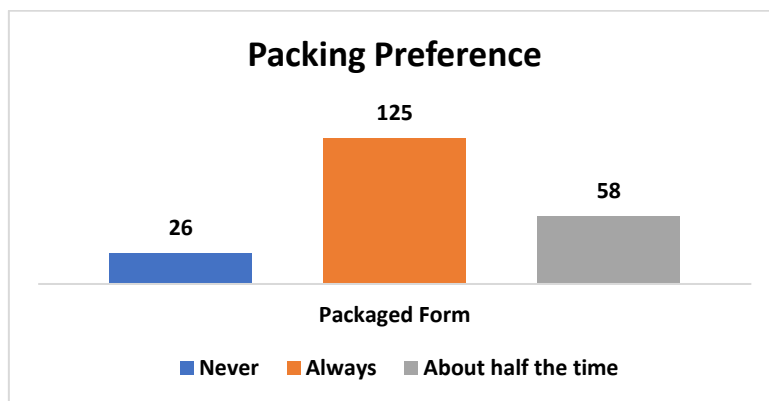
Figure 6 Preference for packaged rice

Perception of 'Healthy Food': As seen in the graph below, nearly 43% of the respondents associate healthy food with nutritious products that support an active lifestyle. Contrastingly, around 26% of the respondents associate the need to consume healthy food with sick or older people or those suffering from a pre-disposed condition such as diabetes and low blood sugar. This gives us insight into consumers' perception of 'healthy food,' which can be leveraged to position the Telangana Sona rice variety as a staple to promote a healthy and active lifestyle.
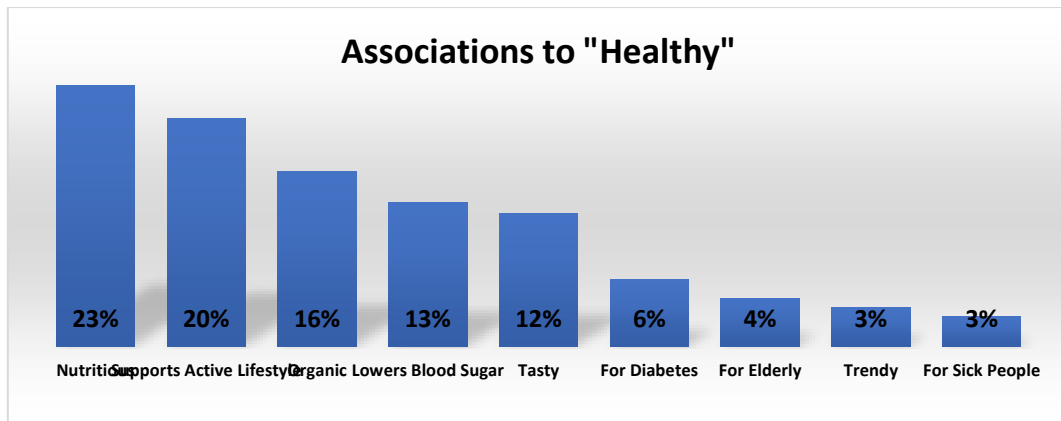
Figure 7 Associations of consumers to "Healthy"

Rice Substitutes: Nearly 54% of the respondents 'sometimes' substitute white rice with wheat in their meals. The remaining respondents mentioned that they 'sometimes' substitute white rice with millets or brown rice.
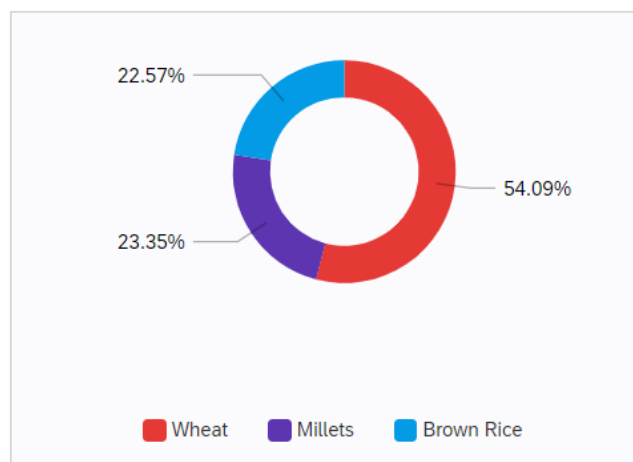
Figure 8 Substitution preferences for white rice

Importance of Rice Attributes: The most important attributes that respondents consider while purchasing rice are **health, taste,** and **availability.** Customers do not have a strong preference for lesser cooking time and aroma while choosing a particular rice variety for regular consumption.
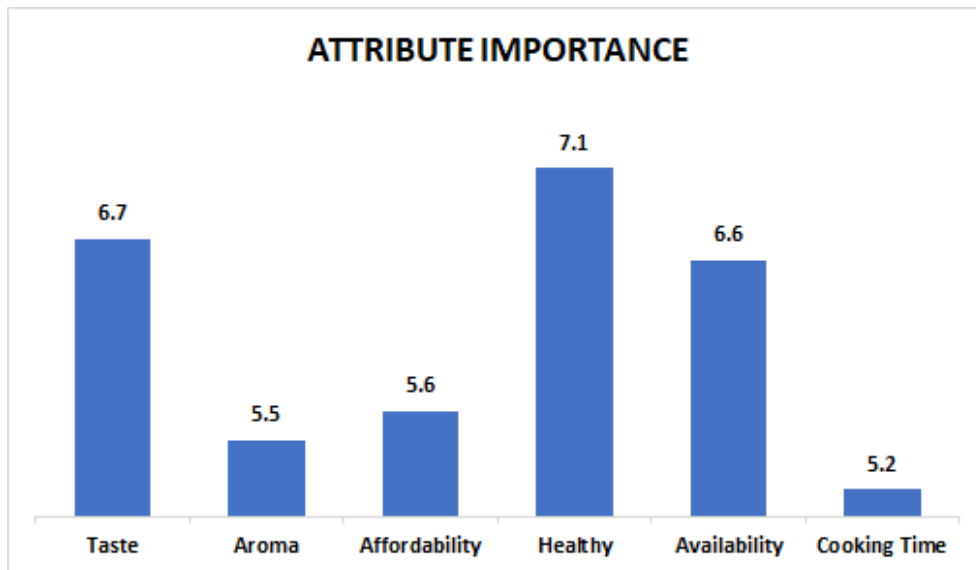
Figure 9 Importance of various attributes to consumers

Awareness of Telangana Sona: Around 56% of the respondents were extremely unfamiliar with the Telangana Sona rice variant. Approximately 40% were slight to moderately familiar with the rice variety.
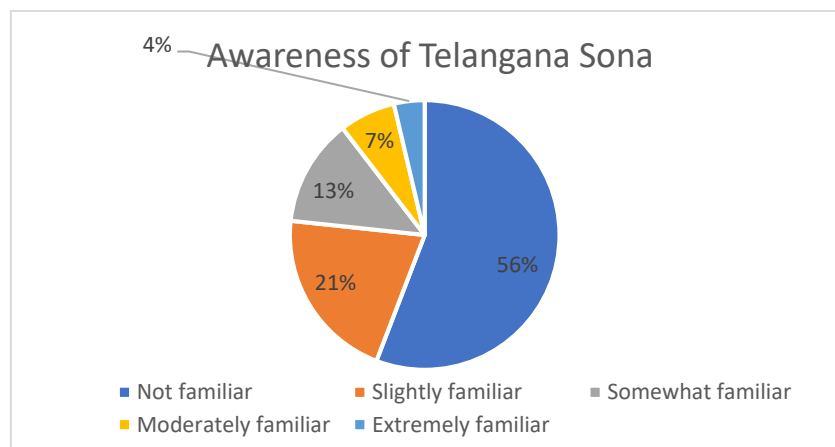
Figure 10 Respondents' awareness of Telangana Sona

Attribute Importance and Perception: As seen earlier, health and taste are the most important attributes consumers consider while purchasing a particular rice variant. We conducted a perception analysis amongst the consumers regarding different food varieties based on different attributes. The respondents' perception of Telangana Sona on taste and health attributes were the least amongst all other food varieties such as Basmati rice, Sona Masoori rice, Brown rice, and Millets. Based

on this map, Telangana Sona should be positioned as both tasty and healthy in consumers' minds. This will be in line with the positioning that consumers prefer and the strengths of the rice variety.
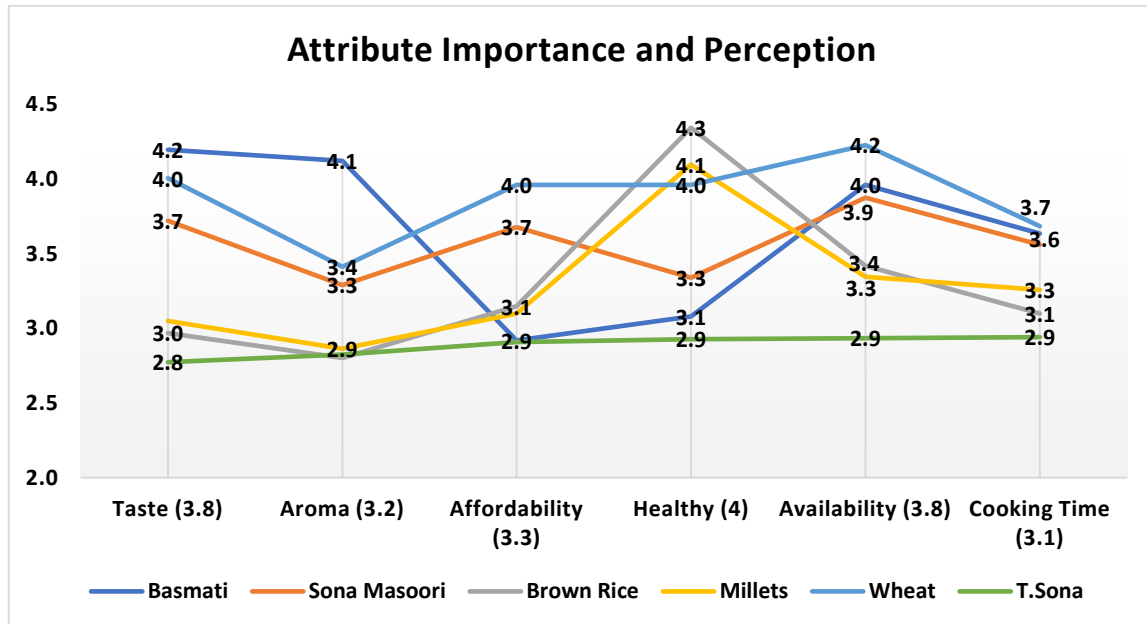

Figure 11 Ranking of consumers' perception of attributes (within bracket on X-Axis is the importance of each attribute)

Current & Desired Behavior and Mindset about Telangana Sona

	CURRENT	DESIRED
MINDSET	Telangana Sona is mostly unknown by 96% of the population. The segment that knows about it thinks it is healthier but wonder if it's only for diabetics	Target audience is very familiar with Telangana Sona and its benefits. They believe it's better than their current rice variety in both taste and health, and that it's the best choice for their family.
BEHAVIOR	Target audience does not try or purchase Telangana Sona	Target audience regularly consumes Telangana Sona instead of their current rice variety. Telangana Sona fulfils all their rice requirements

MARKET ANALYSIS:

Size & Trends: The overall rice consumption in India in 2019 was 102 million tons. There is an emerging trend for packaged rice consumption at 3.8 million tons, which is expected to have a CAGR of 12% during the 2019-2024 period. As seen in the market research, we observe the trends shifting toward healthy food consumption.

Competition: The primary competitors for Telangana Sona are Sona Masoori, Sambha Masoori, Wada Kollam, BPT, Kurnool Sona, and Jai Shri Ram.

Customer Segmentation:

Using the information about important attributes obtained from the consumer survey, we could conduct a segmentation analysis (k-means clustering) that identified six key segments. These segments are *health pioneers* (27% of the sample), *health foodies* (18% of the sample), *pragmatists* (10% of the sample), *bystanders* (12% of the sample), *connoisseurs* (14% of the sample), and *early birds* (19% of the sample). Descriptions of the different segments are given below.

- **Health Pioneers -** 63% of the respondents were in the age group of 22-35 years, and 23% were in the age group of 36-49 years. Customers in this group give the highest preference to the health attribute and least preference to taste while purchasing and consuming a rice variant. More than 75% of the respondents in this segment consume rice daily, on an average of 17 kg per month. The family size of the respondents is, on average, two persons for each household. However, each respondent's house size varies, with 41% living in a house with 1000-2000 sq. ft., 29% living in an area of 500-1000 sq. ft., and 20% in an area of 2000-3000 sq. ft. Average annual incomes are in the range of >15 lakhs for 39% of the respondents, 10-15 lakhs for 17% of the respondents, and the remaining are split across different 'less than 10lakhs' annual income groups. Geographically, 59% of the customers reside in Andhra Pradesh and Telangana, and 34% in Karnataka, Maharashtra, and West Bengal.

- **Health Foodies -** 82% of the respondents in this segment belong to the 22-35 years age group. Health-conscious consumers have the highest preference for health and taste and the least preference for cooking time. 71% consume rice daily, and 21% two to three times a week. The average rice consumption in this segment is 15 kg per month. Each household has two persons, and 33% of the houses are of the size 500-1000 sq. ft. and 39% are of 1000-2000 sq. ft. In this segment, the average annual income for 50% of the respondents' households is above 15 lakhs and 10-15 lakhs for 21%. 54% of the respondents are from Andhra Pradesh and Telangana, and 21% each from Maharashtra and West Bengal.

- **Pragmatists** - All the consumers in this segment belong to 22-35 years. Affordability and availability are the highest preferred attributes, while the aroma is the least preferred. 82% of the respondents consume rice daily, and an average consumption of rice within this group is 20 kg per month. Family size is two persons per house. The size of each house is between 1000 and 2000 sq. ft. for 50% of the respondents, and between 500 and 1000 sq. ft. for 35% of them. Average annual income for households in this segment is split equally: <Rs. 3 lakhs, 3-5 lakhs, 5-10 lakhs, 10-15 lakhs, and >Rs. 15 lakhs.

71% of the respondents belong to Andhra Pradesh and Telangana, and the remaining are split across Maharashtra, Delhi, and West Bengal.

- **Bystanders -** Consumers' preferences are indifferent to Affordability (-1.01) and Health (0.0267). While 82% of the respondents consume rice daily, 30% purchase rice in the SKU size between 5 and 15 kg while another 30% purchase between 25 and 34 kg. 65% of the respondents belong to the age group of 22-35 years. Geographically, 44% of the survey respondents in this segment are from Telangana and Andhra Pradesh, 17% are from Maharashtra, and 9% each from Karnataka, Rajasthan, and West Bengal. 65% of the respondents have an average family size of two persons. The average size of each house is between 1000 and 2000 sq. ft. for 43% of the segment and between 2001 and 3000 sq. ft. for 26% of the segment. The income group is mostly above Rs. 15 lakhs per annum, with 57% of the segment falling in this bucket.

- **Connoisseurs -** Taste (1.11) and aroma (0.667) are the two most important attributes consumers consider while making their consumption and purchase decisions concerning rice. However, they are indifferent to availability (-0.402) and cooking time (-1.54). 69% of the respondents consume rice daily, and 47% purchase rice in the SKU (stock keeping unit) size between 5-15 kg. 63% of the respondents belong to the age group of 22-35 years. Geographically, survey respondents in this segment belong to Telangana and Andhra Pradesh (42%), Maharashtra (21%), and Karnataka (10%). The family size, on average, is two persons for 74% of the respondents. The average size of each house is between 1000-2000 sq. ft. for 58% of the segment. The annual income group is above Rs. 15 lakhs for 47% of the segment and between 5 and 10 lakhs per annum for 26% of the segment.

- **Early Birds -** Consumers consider cooking time (0.233) to be the most important attribute while making consumption and purchase decisions. 78% of the respondents consume rice daily, and 40% purchase rice in the SKU size between 5 and 15 kg. 78% of the respondents belong to the age group of 22-35 years. Geographically, survey respondents in this segment belong to

Telangana and Andhra Pradesh (59%), West Bengal (19%), and Maharashtra (11%). The average family size is two persons for 56% of the respondents. The average size of each house is between 1000 and 2000 sq. ft. for 56% of the segment and between 2001 and 3000 sq. ft. for 26% of the segment. The annual income group is above Rs. 15 lakhs for 41% of the segment and up to Rs. 3 lakhs for 26% of the segment.

Positioning Analysis:

We conducted a positioning analysis to identify the right link between Telangana Sona and its consumers. The goal was to discern a central or differentiation positioning strategy. A central positioning strategy appeals to dominant products or "me-too"/clone products, which deliver similar benefits as the market leader and help consumers discern benefits easily while offering value on other dimensions. On the other hand, a differentiation strategy or edge strategy requires brands to focus on attributes that differentiate and offer a new value proposition. To obtain the positioning statement, we wanted to understand the dimensions of customers perceiving different rice brands using perceptual maps.
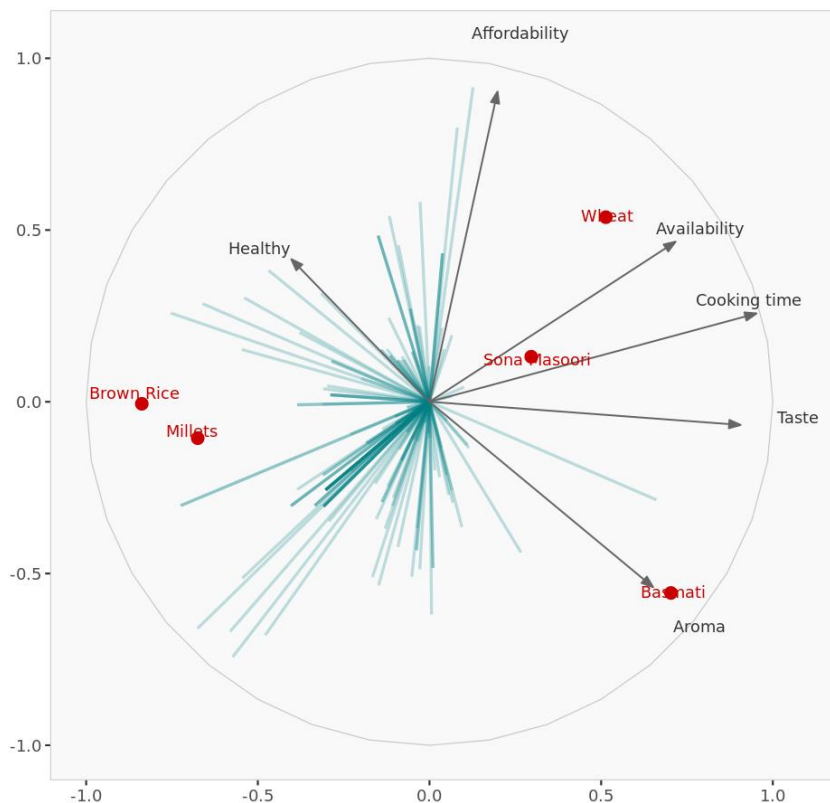
Figure 12: Joint Space Map for Rice consumption

The perceptual map (Figure 12) helps us visualize the competing offerings as viewed by customers. For example, in our analysis, brown rice and millets are considered competing, while Basmati rice and wheat are considered different from other rice varieties. Our analysis suggested two dimensions with the factor loadings for the two dimensions shown in Table 4. Based on the map, certain important inferences emerge. Brown rice and millets are considered high on the health dimension, while wheat and Sona Masoori are high on the affordability dimension. Basmati is considered high on the aroma dimension but is not considered healthy. When consumer preferences are imposed on the perceptual map, there emerges a substantial preference for affordable, healthy options.

Table 4: Coordinates and Dimensions for Perceptual Map

Attributes coordinates

	Dimension I	Dimension II
Taste	0.91	-0.07
Aroma	0.65	-0.54
Affordability	0.20	0.90
Healthy	-0.40	0.42
Availability	0.72	0.47
Cooking time	0.95	0.26

Attributes coordinate position

	Dimension I	Dimension II
1	Cooking time	Affordability
2	Taste	
3	Availability	

COMMUNICATION STRATEGY

Positioning statement: Telangana Sona is a tasty, healthy white rice for everyday consumption for India's rice-eating population who want to switch to a healthier lifestyle. It is important to note that the positioning statement is non-comparative against any other rice varieties. This is because our preference data reveals a market that prefers healthy options currently not being served by any of the existing healthier options (brown rice, millets) or other rice varieties.

- *As tasty as their current choice of rice*
- *Healthier than their current choice of rice*
- *Available at a store near you*

MARKETING STRATEGY MIX:

PRODUCT STRATEGY:

Telangana Sona rice is a medium-fine-grained rice variety that has a low glycemic index. Based on our findings from the interviews and the survey, we conclude that 5-15 kg is the most preferred SKU (36% survey respondents). Hence, we recommend the SKU (stock keeping unit) sizes in this range. 60% of the respondents preferred packaged rice, and, hence, we recommend Telangana Sona be sold in a packaged form. However, interview respondents also indicated a preference for loose rice for higher quantity purchases; the same should also be available with millers and stores.

PRICING STRATEGY:

The millers decide the price, but the overall pricing strategy for Telangana Sona should be competitive or marginally higher, owing to its positioning as a tasty and healthy rice variant. Currently, Telangana Sona is at a premium pricing of nearly Rs. 5/kg more than that of Sona Masoori. We recommend testing this premium over a range to arrive at the most profitable pricing.

PROMOTION STRATEGY:

The following promotion strategy should be employed to increase brand awareness and reach the target markets:

- At a score of 3.7 out of 5, the survey indicates that 'Recommendations from friends and family' have the highest influence on consumers' decision to try a new rice variant.

- Local Kirana stores are the next largest influencing factor with a score of 2.7 out of 5 since they play a key role in new product adoption. Additionally, this is the most preferred purchase channel for consumers (score of 3.6 out of 4). Incentivizing and offering trade discounts to the local Kirana store owners will enable them to push this new rice variant to their existing and new consumers.

- In the interviews, all consumers who purchase rice in large quantities indicated that they buy it from millers or directly from the farmer. These consumers look up to their local, trusted sellers and millers for recommendations. For building a stronger customer-miller relationship, trade discounts, sampling, and incentives for verbal promotion should be employed.

- After the Kirana store, the departmental store is the next preferred purchase channel (score of 2.8 out of 4). Sampling and stocking activities at departmental stores will help increase brand awareness and adoption.

- According to our survey, advertising is the third most influential communication method, with a score of 2.5 out of 5. Print ads in the local, regional newspapers and door-to-door pamphlets can be explored in short bursts to stimulate demand.

- One interviewee indicated that he found out about Telangana Sona from the village extension services. These are vital in introducing a rice variant to rural consumers and must be activated at regular intervals for creating awareness at the grassroots levels.

- Two interviewees, aged 27 and 35, indicated their preference for social media channels to discover new food products. For expanding reach to a younger Internet-savvy audience, e-commerce grocery platforms such as Grofers and BigBasket can be leveraged to target the younger dual-income couples and working professionals. Sampling and sponsored product ads on these platforms will help in product discovery.

- Three interviewees, aged 27, 35, and 50, indicated that they watch food videos on YouTube for recommendations. Urban and rural women are increasingly being interested in watching YouTube videos on food. Therefore, ads on YouTube and partnerships with food and lifestyle influencers should be explored.

DISTRIBUTION STRATEGY:

The distribution strategy must be the prime focus to increase the awareness and adoption strategy for the Telangana Sona rice.

- According to our research findings, the respondents strongly preferred local Kirana stores and millers, with a score of 3.6 out of 4, as their primary purchase channels. Expanding our availability to these channels will help increase Telangana Sona's accessibility and reach across all target states.

- With a score of 2.8 out of 4, modern trade (MT) channel such as departmental stores, supermarkets, and hypermarkets is the next preferred purchase channel. Availability of the rice at MT channels in 5-15 kg SKU sizes and loose form will enable accessibility for urban consumers.

- Although e-commerce is currently not the most preferred channel, availability on e-commerce channels will help target the urban youth – the growing consumer segment of tomorrow that might otherwise not be exposed to the Telangana Sona rice variety.

BRANDING STRATEGY:

In Marketing, Telangana Sona is in the introductory stage. A substantial amount of our survey respondents and interviewees were unaware of the existence of the product. Branding campaigns should focus on communicating the places where the product is available and its tasty and healthy attributes. Additionally, given the

nascent stage of the product introduction in the market, it is essential to create powerful brand symbols to derive long-term benefits from the advertising campaigns. A strong brand symbol can be created by creating a brand logo associated with Telangana Sona.

The sensitivity of the report:

In the primary research interviews, there is a possibility of biased responses as there is no suggested size or benchmark sample size for the number of interviews. In considering various logistical constraints, the interviews were limited to Telangana, Andhra Pradesh, West-Bengal, and Maharashtra. Random sampling has been done with the view to negate any possible bias.

Though there were about 350 respondents in the primary research survey, the choice to answer a particular question was left to the individual's discretion. Hence, the number of responses to various questions varied between 150 – 260, suggesting that these responses are sufficient to represent the total population. Random sampling has been followed to negate any possible errors, at least partially. However, care has been taken to ensure that we have a statistically significant sample size. One other note of caution concerning survey responses relates to the language of delivery. The survey instrument was primarily delivered in the English language and targeted to individuals using social media and web-based platforms. Additional surveys using different regional languages and respondents from Tier 1 and Tier 2 cities must be obtained to confirm these findings' robustness and generalizability.

Segmentation analyses were performed with various marketing tools and software, including certain error percentages.

Market research is a detailed procedure of data collection and analysis and is time-consuming. The current market survey was performed in a given time frame. There is a need to make quick decisions about the product's launching to gain a competitive edge, availing the available market opportunity before the consumers' preferences change. Finally, performing extravagantly large market research for exhaustive results in the constrained time available is difficult. Hence the results of our research may be subject to limitations.

CONCLUDING REMARKS

In conclusion, Telangana Sona rice has strong market potential. The cornerstones of its potential are its favorableness with farmers and millers, an affordable price point, preferred grain size, and the growing consumer interest in shifting to healthier diets. The key gaps to look for are the name similarities between Telangana Sona and Sona Masoori, post-cooking textures that may not appeal to certain consumers, and a strong association with diabetics that may deter normal consumers from associating with it. The strongest markets for Telangana Sona will include consumers who prefer separate and slender grains and healthier lifestyles. A robust marketing strategy for the rice will combine uplifting messaging with promotional pushes at the village, miller, Kirana store, and digital touchpoints.

Sampling and recommendations from trusted sellers will be key in getting the ball rolling for creating increased awareness and usage. Also, if the sellers can provide quality assurance to Telangana Sona, it will add value to the consumers. This can be achieved by tying up with various certification agencies (or laboratories) that certify the product's nutritional values such as Glycemic Index, carbohydrates, sugar content, etc.

With the recommended marketing strategy and widespread availability, Telangana Sona will be poised to become an addition to an Indian rice consumer's regular food list. Over time, we believe that Telangana Sona will also have significant potential in overseas markets such as the United States that already have a strong health revolution underway and have a significant population of the Indian diaspora.

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	Consumption Frequency	Purchase Quantity	Importance of rice attributes					
			Taste	Aroma	Afforda bility	Healthy	Availabi lity	Cooking Time
	1 - Daily 2 - Once every other day 3 - 2 to 3 times a week 4 - Once a week 5 - Rarely (once a month or fewer)	Values in kg	Importance scale from 1-5					
State								
Andhra Pradesh	1.38	19.21	3.56	3.06	3.29	4	3.88	2.97
Karnataka	1.67	11.33	3.75	3.08	3	4.17	3.75	3.33
Maharashtra	2.09	7.59	3.86	3.18	3.23	3.77	3.59	2.77
Telangana	1.08	23.18	3.94	3.26	3.4	4.14	3.78	3.34
West Bengal	2.26	9.53	3.42	3.05	3.26	3.79	3.53	2.95
Age								
< 21	2.6	9.6	3.4	3.2	3.6	4.2	4	3.8
22-35	1.55	17.16	3.73	3.04	3.24	4.01	3.78	2.98
36-49	1.48	15.67	4.11	3.7	3.33	3.96	3.74	3.19
> 50	1.55	9.45	3.73	3.45	3	4.09	3.27	3.36
Income								
Up to 3 Lakhs	1.33	22.88	3.67	3.33	3.33	4.42	3.58	3.46
3-5 Lakhs	1.47	12.88	3.76	3.18	3.82	3.88	4.18	3.82
5-10 Lakhs	1.58	18.96	3.75	3.25	3.33	3.88	3.58	2.88
10-15 Lakhs	1.43	14	3.67	2.95	3.43	3.95	3.62	2.9
> 15 Lakhs	1.72	14.2	3.88	3.2	3	3.97	3.78	2.87
House Size								
Less than 500 sq. ft	1.22	22.33	3.67	3.11	3.78	4.56	4.11	3.33
501-1000 sq. ft	1.33	18.26	3.41	2.87	3.49	3.97	3.69	2.97
1001-2000 sq. ft	1.73	14.61	3.85	3.25	3.18	4.07	3.72	3.1

2001-3000 sq. ft	1.86	15.68	3.91	3.41	3	3.64	3.82	2.82
More than 3000 sq. ft	1.21	12.88	4.43	3.5	3	4.07	3.64	3.43
Family Size								
1	1	12.8	4.6	4.2	3.8	3.6	3.2	3.2
2 to 4	1.48	17.04	3.03	3.68	3.96	3.23	3.13	3.8
5 to 6	1.17	11.59	3.07	3.86	4.07	3.14	3.21	3.76
> 6	1.04	20.27	3.45	3.64	4.27	3.55	3.64	4

Exhibit 1A

	In which form do you purchase rice - Packaged or Loose?		How likely are you to buy from the following?				I select food varieties based on recommendations from					
	Loose	Packaged	Departmental Store	Hypermarkets	E-commerce	Kirana	Family & Friends	Retail/ Departmental	Kirana	E-commerce	Ads	Social Media
	1- Never 2 - About half the time 3 - Always		1 - Strongly disagree 2- Somewhat disagree 3 - Neither agree nor disagree 4 - Somewhat agree 5 Strongly agree				1 - Strongly disagree 2- Somewhat disagree 3 - Neither agree nor disagree 4 - Somewhat agree 5 Strongly agree					
State												
Andhra Pradesh	1.68	2.53	2.59	2.35	1.76	3.68	3.59	2.26	2.53	1.94	2.53	2.47
Karnataka	1.83	2.33	2.25	2.5	2.42	3.83	3.92	2.33	2.92	2.5	2.75	2.5
Maharashtra	1.55	2.55	3	2.73	2.55	3.18	3.73	2.32	2.32	2.18	2.64	2.27
Telangana	1.54	2.44	2.66	2.08	1.86	4.02	3.54	2.3	3.08	2.02	2.32	2
West Bengal	1.32	2.74	3.05	2.84	2.58	3.11	3.58	2.37	2.95	2.89	2.68	2.47
Age												
Below 21	1.6	2.4	3.8	4.2	3.4	3	3.4	3.8	2.6	2.8	2.8	3.2
22-35	1.59	2.52	2.67	2.32	2.07	3.79	3.63	2.25	2.73	2.17	2.63	2.35
36-49	1.33	2.56	2.59	2.37	2.15	3.56	3.74	2.41	3	2.3	2.07	1.81
Above 50	1.82	2.36	3	3.36	2	3	3.18	2	2.27	1.82	2.45	2
Income												
Up to 3 Lakhs	1.63	2.38	2.71	1.83	1.83	3.58	4.17	2.63	2.54	2.13	2.63	2.42
3-5 Lakhs	1.59	2.35	3.18	3	2	4.06	3.18	2.88	2.94	2.18	2.94	2.65
5-10 Lakhs	1.46	2.58	2.71	2.46	1.75	3.67	3.46	2.75	3.21	2.21	2.33	2.25
10-15 Lakhs	1.62	2.38	2.38	2.48	2.62	3.38	3.9	1.86	2.67	2.43	2.43	2.57
Above 15 Lakhs	1.55	2.58	2.71	2.55	2.23	3.7	3.48	2.04	2.62	2.13	2.49	2.01
House Size												
Less than 500 sq. ft	1	2.78	2.89	2.78	2.22	4.22	4	2.89	2.44	1.78	2.56	2.67

501-1000 sq. ft	1.77	2.36	3	2.64	2.08	3.46	3.46	2.15	2.62	2.13	2.9	2.46
1001 - 2000 sq. ft	1.59	2.54	2.45	2.48	2.06	3.73	3.73	2.31	2.85	2.27	2.51	2.11
2001- 3000 sq. ft	1.59	2.55	2.77	2.18	2.27	3.32	3.5	2.27	2.59	2.23	2.05	2.32
More than 3000 sq. ft	1.14	2.57	3.07	2.14	2.29	4.14	3.29	2.43	3	2.14	2.36	2.07
Family Size												
1	1.4	2.2	3	3	1.8	4.4	3.8	2.2	2.8	1.8	2.8	2.6
2 to 4	1.55	2.5	2.65	2.45	2.07	3.61	3.64	2.27	2.71	2.12	2.45	2.28
5 to 6	1.69	2.48	2.79	2.41	2.34	3.86	3.52	2.41	2.83	2.38	2.72	2.1
More than 6	1.36	2.82	3.09	2.55	2.18	3.45	3.45	2.45	2.82	2.55	2.73	2.27

Exhibit 1B

Interview instruments: Indicative list of questions designed for an interview.

Introduction Key Components:	Thank you for taking the time to meet with me today. My name is _____ and I would like to talk to you about the role of rice in your life. The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to speak up so that we don't miss your comments.
• Thank you	
• Your name	
• Purpose	
• Confidentiality	
• Duration	
• How interview will be conducted	All responses will be kept confidential. This means that your interview responses will only be shared with research team members, and we will ensure that any information we include in our report does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to, and you may end the interview at any time. Are there any questions about what I have just explained? Are you willing to participate in this interview?
• Opportunity for questions	
• Signature of consent	
	_____ _____ Interviewee Witness Date
Questions	1. Tell me about you and your family (age, occupation, education)
• No more than 15 open-ended questions	a. Can you tell me what a usual day in your life looks like and how you spend your free time?
• Ask factual before opinion	2. Let's talk about you and your family's food habits - what do you generally eat in the day?
• Use probes as needed	a. How do you decide what to cook for your family?
	3. Which rice variety are you eating now?
	a. How long have you been eating this rice? How did you find out about it?
	b. Why do you like eating this rice?
	4. Can you tell me some words, feelings, and memories that come to your mind when you think about eating rice?

5. Have you purchased other varieties of rice in the past? What were some reasons you stopped purchasing them?
    a. What are some reasons you would switch to a different type of rice from the one you're eating today?
    b. Do you ever switch rice for some other substitutes? If yes, what and why?
6. Do you try finding healthy alternatives for the food you consume daily? Why/why not?
    a. What is your opinion on healthy rice?
7. How frequently do you buy rice, and how much do you buy at each time?
    a. Where do you usually purchase rice from? Why do you purchase it from there?
    b. What do you prefer - loose or packaged rice? Branded or unbranded? Why have you chosen these options?
    c. For loose Rice, how do you establish the quality of the Rice?
    d. How do you differentiate one rice variety from the other in loose rice?
    e. Do you eat multiple varieties at your house? If yes, then how many and why?
    f. Generally, who decides what groceries to buy and buys them?
8. How do you know about new essential food items (like rice, wheat, oil, etc.)?
9. What rice varieties are you aware of? What do you think about Telangana Sona rice?

Closing Key Components:	Are there any other thoughts on rice that you would like to share with us?
• Additional comments • Next steps • Thank you	I'll analyze the information you and others gave me and submit a draft report to the organization in one month. I'll be happy to send you a copy to review at that time if you are interested. Thank you for your time.

Survey Instruments: Indicative list of questions.

Q1. How often do you consume rice in a week?

(Daily, Once Every other day, 2-3 times a week, once a week, rarely)

Q2. How much rice do you purchase in a month?

Q3.

Please rate the following attributes of rice based on the importance you give for purchase and consumption of rice.

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Taste	○	○	○	○	○
Aroma	○	○	○	○	○
Affordability	○	○	○	○	○
Healthy	○	○	○	○	○
Availability	○	○	○	○	○
Cooking time	○	○	○	○	○

Q4. In which Form do you purchase the rice? Packaged – Always, Never, Sometimes.

Q5.

How likely are you to agree or disagree with the following statements?
Here we wish to understand where you purchase rice from.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I mostly purchase rice from Departmental stores (such as Apna Bazaar, Nature's basket, Reliance Fresh)	○	○	○	○	○
I mostly purchase rice from Hypermarkets (like Dmart, Big Bazaar, Hypercity)	○	○	○	○	○
I mostly purchase rice from E-commerce sites (such as BigBasket, Grofers, Amazon)	○	○	○	○	○
I mostly purchase rice from Local Kirana stores	○	○	○	○	○

Q6.

How likely are you to agree or disagree with the following statements regarding food recommendations?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I select food varieties based on recommendations from friends or family	○	○	○	○	○
I select food varieties based on recommendations made by retail stores/departmental stores (such as Dmart, Apna Bazaar, Nature's Basket, Reliance Fresh)	○	○	○	○	○
I select food varieties based on recommendations made by local kirana stores	○	○	○	○	○
I select food varieties based on recommendations suggested on eCommerce stores (such BigBasket)	○	○	○	○	○
I select food varieties based on promotions through Ads (TV, Print, Online)	○	○	○	○	○
I select food varieties based on promotions on Social media (Facebook, YouTube, etc)	○	○	○	○	○

Q7. Which of the following do you associate with 'healthy' food?

(Tasty, Lowers Blood Sugar, Nutritious, For Diabetes, Organic, For the elderly, For sick people, Supports active lifestyle, Trendy) – Multi option

Q8.

How familiar are you with the following food varieties?

	Not at all familiar	Slightly familiar	Somewhat familiar	Moderately familiar	Extremely familiar
Basmati	○	○	○	○	○
Sona Masoori	○	○	○	○	○
Brown Rice	○	○	○	○	○
Millets	○	○	○	○	○
Wheat	○	○	○	○	○

How do you rate Basmati rice on the following attributes?
(On this scale, 1 is the lowest score and 5 is the highest score)

More about Long Grain Rice varieties:
True to its name, long-grain rice is slim and lengthy. This type of rice typically includes basmati rice in India which is used to cook special dishes like Biryani. The grains have a firm and dry texture. Eg. Pusa, Miniket, Sharbati, Patna, Sugandha, Gandsale, Miniket are some examples of this rice variety.

	1	2	3	4	5
Taste					
Aroma					
Affordability					
Healthy					
Availability					
Cooking time					
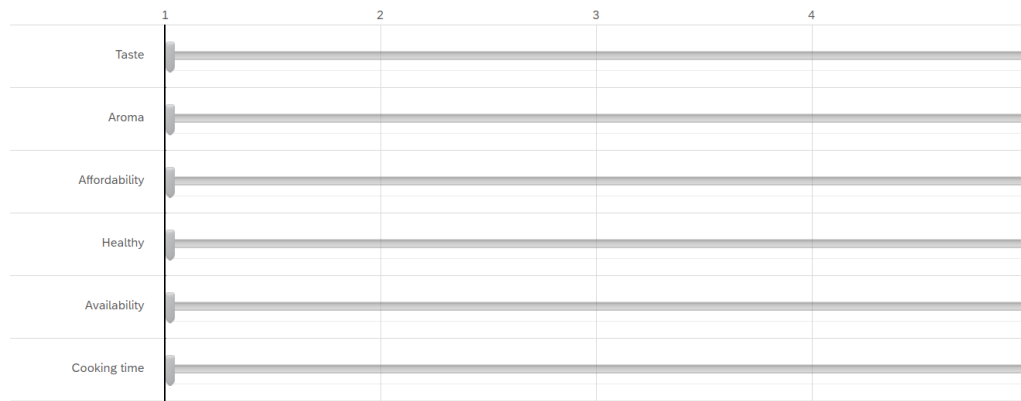
Q9.

Q10 to Q13: Repetition of Q9 for Sona Masoori, Brown Rice, Millets, and Wheat

Q14.

Rank these food varieties based on your consumption preference
(Rank 1 - Most consumed, Rank 6 - Least consumed)

[ ] Basmati

[ ] Sona Masoori

[ ] Telangana Sona

[ ] Brown rice

[ ] Millets

[ ] Wheat

Q15.

How frequently do you consume the following grains INSTEAD of white rice? (select one answer per row)

	Never	Rarely	Sometimes
Wheat	○	○	○
Millets	○	○	○
Brown Rice	○	○	○

Q16. How long have you been consuming rice?

Q17. How satisfied are you after consuming a specific variety?

Q18. How likely are you to recommend a specific variety to someone else?

Q19.

In this section, we aim to understand your perception about Telangana Sona Rice variety.

Telangana Sona is a short-grain rice variety. Short grain rice, named for its size, is only a tiny bit longer than its width. This squat, plump rice cooks up soft and tender, and is known for sticking together and clumping.

How familiar are you with the Telangana Sona Rice variety?

	Not at all familiar	Slightly familiar	Somewhat familiar	Moderately familiar	Extremely familiar
	○	○	○	○	○

Q20. Repetition of Q9 for Telangana Sona.

Q21 – 26: Demographics for segmentation: Age, Income level, Size of family, size of house, city, and state of residence.

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