A Comprehensive Study of Shopper Profiles and Purchasing Patterns for Rice at Reliance Mall

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Authors' contributions

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

Original Research Article

ABSTRACT

Rice, a fundamental staple for over half the global population, was predominantly produced by Oryza sativa and ranked fourth in global crop production. Despite its significant role, only a small percentage was traded internationally, with major consumption concentrated in China, India, and Indonesia. This study investigated shopper profiles and purchasing patterns for rice at Reliance Mall, aiming to understand demographic influences on rice preferences and buying behaviors. Using a sample of 160 respondents, the study highlighted that the female profile was slightly over in the number of males, with a majority aged between 21 and 50 years. The respondents were

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primarily graduates with a monthly income between Rs. 30,000 and Rs. 40,000, and most lived in small households. The research revealed a strong preference for Daawat and India Gate brands, with local and Basmati rice types being the most favored. Reliance Smart Bazaar emerged as the dominant purchase source, and the 1 kg package size was the most popular among consumers. Promotional activities via TV channels had the greatest impact on purchasing decisions. This comprehensive analysis provided insights into consumer behavior, which could guide targeted marketing and improve customer experiences in retail settings.

1. INTRODUCTION

Rice, a staple food for over half of the world's population, is produced by the grass species Oryza sativa and is the fourth most produced crop after sugarcane, maize, and wheat [1,2]. In 2021, rice production reached 787 million tons, making it the fourth most produced crop after sugarcane, maize, and wheat [3]. However, only 8% of rice is traded internationally, with China, India, and Indonesia being the largest consumers [1,2].

Rice production in developing nations often faces challenges such as poor transport and storage, pests, weeds, and diseases [2]. Traditional rice polycultures and modern integrated pest management are used to control pest damage sustainably. Biotechnology has been employed to improve crop quality and productivity, creating Green Revolution rice that can yield high outputs when managed intensively with nitrogen fertilizer [4]. Rice has also been engineered to express human proteins for medicinal use and to tolerate floods, droughts, and high salinity [1,2].

Rice is used as a model organism in biology and has various types including long-grain, medium-grain, sticky short-grain, white, and golden rice [2]. It is estimated that rice production caused over 1% of global greenhouse gas emissions in 2022, and yields are expected to decrease by 20% with every 1°C rise in global mean temperature [1,2]. In India, rice is the most important crop and serves as the staple food for millions of rural households, playing a crucial role in the country's food security. To sustain rice production, it is important to focus on increasing productivity per unit of area, developing high-yielding varieties that can resist multiple stresses, and implementing crop production techniques that increase factor productivity, reduce costs, and provide a safe environment. Encouraging resource conservation technologies and cultivating climate-resilient, high-yielding varieties will be crucial for sustaining rice production in India [4].

The variety of rice in India includes 50 types including Basmati, Brown Rice, Mogra, Jasmine, Aizon, Ambemohar, Chakhao, Dubraj, Burma Black, Indrayani, Jeerakasala, Jawaful, Kalal, Joha, Kuttanad, Laxmi Bhog, Matta, Mysore Malliage, Patna, Parmal, Samba, and Wada Kolam. India primarily exports Basmati and Non-Basmati Rice, with production increasing by 25.33 in 2021-22, with exports reaching 9665 million. Major rice cultivating states include Uttar Pradesh, West Bengal, Punjab, Bihar, Assam, Haryana, Tamil Nadu, Odisha, and Chhattisgarh [2].

Local tastes are influenced by the variations in length and form of rice across different places. Granulometric measurements—such as grain length and whiteness—are crucial for grading and quality standards in rice markets. Palatability attributes of rice, such as its look, cohesiveness, softness, and flavor, are also important in assessing its quality [2].

Market segmentation is not often used in corporate operations, but it is important in marketing [5,6,7]. Target marketing involves defining target markets, creating goods and promotional strategies, and implementing market segmentation, marketing targeting, and product positioning [5,6,8,9]. When developing their marketing strategies, companies should consider resource availability, service offerings, and market diversities. Social elements affect learning and purchase habits in contemporary vs. old marketplaces, with social elements positively impacting learning, motivation, attitude learning, and public purchasing habits [3,10,11]. Market segmentation has a major impact on purchase decisions, with behavior being the primary factor influencing purchase decisions [12,6,13,14].

Businesses should focus on demographic segmentation and explore other possibilities to boost local rice production [4,11,15]. The global demand for premium rice has led to research on rice quality attributes and demography [4]. However, variations in rice quality across regions necessitate more resources and research [16]. Brand equity and purchase decisions significantly impact product, price, place, promotion, and brand equity. Producers must prioritize these aspects while improving packaging [10,17,18,19]. Big Data can enhance understanding of consumer decision-making stages, but its use may be limited due to the new data culture in marketing practice [8]. Packaging choices affect FMCG product purchases, with written content having the most impact [16]. Market segmentation tactics play a significant role in customer choices, with lower-income groups favoring unbranded goods and higher-income groups buying branded goods [19,20]. Reinforcement learning can address omnichannel retail choice by minimizing consumer interactions and achieving competitive in-store picking policies [21]. Rice quality and packaging are the primary factors influencing local and imported choices [9].

1.1 Aim

The primary aim of this study is to investigate the profiles of shoppers and their purchasing patterns for rice at Reliance Mall. The study seeks to understand the demographic influences on rice preferences and buying behaviors. Specific objectives include:

- To study the profile of respondents.
- To assess the customer journey from initial engagement to post-purchase interactions [12,22].

1.2 Research Objectives

1. To study the Profile of Respondents.
2. To assess the customer journey from initial engagement to post-purchase interactions.

2. METHODOLOGY

The study aimed to understand customer profiles and purchasing patterns for rice at Reliance Mall using a survey methodology [14]. The research involved interviews with 160 respondents from the Reliance Modern Market, using simple random sampling [12]. The interview schedule involved determining necessary information,

identifying respondents, choosing contact methods, selecting inquiry topics, crafting questions, arranging questions in a logical structure, verifying questionnaire length, pretesting, and creating a completed survey form. The findings could help improve customer segmentation and the customer experience at Rice [23]. The study's findings could help improve customer segmentation and the overall customer experience at Reliance Mall [14].

3. RESULTS AND DISCUSSION

3.1 During the Research Following Observations were Recorded Regarding the Demographic Profile of the Respondents

Based on a demographic profile, I can analyze that.

1. The gender distribution of respondents at Reliance Mall. In modern trade, 48 % of respondents were male (76 Individuals), while 52 % of respondents were female (84 Individuals). This data indicates a slightly higher proportion of female respondents compared to male respondents at Reliance Mall.
2. The age distribution of respondents at Reliance Mall. In Reliance Mall, most of the respondents were in the 21–35 age group, which comprised 46% of the total respondents. The 36–50 age group represents the second-largest segment, made up 42% of the respondents. Respondents above 50 years old are the smallest group, accounting for 12% of the total respondents.
3. The educational qualifications of respondents at Reliance Mall. In Reliance Mall, the largest group of respondents were graduates, which made up 55% of the total. Those with qualifications below graduation form the second-largest group, at 29%. Postgraduates constitute 16% of the respondents.
4. The income diversity among respondents from Reliance Mall. In Reliance Mall, the largest group of respondents belong to families with a monthly income between Rs. 30,000 and Rs. 40,000, making up 43% of the total. The second-largest group had a monthly income between Rs. 20,000 and Rs. 30,000, accounting for 31%. Families with a monthly income above Rs. 40,000 constitute 16% of the respondents. The smallest group had a monthly income

below Rs. 20,000, which represented 10%.
5. The household sizes of respondents from Reliance Mall. Most of the respondents came from small households (up to 4 members), which made up 66% of the total.

Medium-sized households (between 4 to 6 members) account for 32% of the respondents. Large households (greater than 6 members) constitute the smallest group, representing 2% [24,25].

Table 1. Demographic Profile of Respondents (n=160)

Sr. No.	Parameter	Respondents	Percentage (%)
1	**Gender**		
I.	Male	76	48
II.	Female	84	52
2	**Age**		
I.	21- 35	73	46
II.	36- 50	67	42
III.	Above 50	20	12
3	**Educational Qualification**		
I.	Below Graduation	47	29
II.	Graduate	88	55
III.	Post Graduate	25	16
4	**Monthly Income of the family**		
I.	Below Rs. 20000	17	10
II.	Rs. 20000- Rs.30000	49	31
III.	Rs. 30000- Rs.40000	69	43
IV.	Above Rs. 40000	25	16
5	**Household Size**		
I.	Small (up to 4 members)	106	66
II.	Medium (Between 4 to 6 members)	51	32
III.	Large (Greater than 6 members)	3	2

Table 2. The customer journey from Initial engagement to Post-Purchased Interaction

Sr. No.	Parameter	Respondents	Percentage (%)
1.	**Brand Category***		
1	Fortune	48	30
2	India Gate	55	34.4
3	Kohinoor	35	21.9
4	Devaaya	2	1.3
5	Good Life	24	15
6	Daawat	60	37.5
7	Unity	1	0.6
8	Local	3	1.8
2.	**Rice Category***		
1	Basmati	63	39.40
2	Non-Basmati Rice (Wada Kolam,Sona Masoori)	42	26.30
3	Broken Rice (Dubar, Tibar)	17	10.60
4	Local Rice (Jirasar, Mini Mogra,Boild Kolam)	70	43.70
5	Gujarat Sattar	1	0.60
3.	**Period**		
1	Regularly	48	30.00
2	Two Times a Week	28	17.00
3	Weekly	44	28.00
4	Biweekly	21	13.00
5	Monthly	10	6.00

Sr. No.	Parameter	Respondents	Percentage (%)
6	Never Had Used	4	3.00
7	Occasionally	5	3.00
4.	**Source**		
1	D- Mart	31	19.40
2	Reliance Smart Bazaar	111	69.40
3	Star Bazaar	3	1.90
4	Wholesaler Market	3	1.90
5	Grocery Shop	30	18.75
6	Farm	1	0.60
5.	**Purchased the Brand Rice***		
1	Fortune	44	27.50
2	Kohinoor	34	21.30
3	India Gate	38	23.80
4	Devaaya	4	2.50
5	Good Life	33	20.60
6	Unity	2	1.30
7	Daawat	42	26.30
8	Loose Rice	19	11.80
9	Apple	1	0.60
6.	**Packaged Size (Kg)**		
1	1	83	51.90
2	5	34	21.30
3	10	8	5.00
4	20	17	10.60
5	25	12	7.50
6	30	6	7.50
7.	**Rice Category Promotion***		
1	TV Channel	117	73.10
2	Radio Channel	17	10.60
3	Newspaper	57	35.60
4	Hoarding of Different Public Places	52	32.50
5	In the cinema Theatre (Beginning, Interval, Post Interval)	17	10.60
6	Wall Painting	6	3.80
7	Hoarding at shop	58	36.30
8	On Bus/ Vehicle	7	4.40

3.2 To Assess the Customer Journey from Initial Engagement to Post-Purchased Interaction(n=160)

I can analyze the customer journey from Initial engagement to Post-Purchase Interaction.

1. All the respondents were from Reliance Mall.
2. Brand Preference: Daawat (37.5%) and India Gate (34.4%) were the most preferred brands among respondents. Fortune was also a significant player with 30% of respondents choosing it. Other brands like Kohinoor (21.9%) and Good Life (15%) had a moderate preference. Local brands and lesser-known brands like Unity (0.6%) and Devaaya (1.3%) had very low preferences. (*There were 160 respondents, but as some customers chose multiple options, the total number of responses was 228. 160 respondents considered each Brand Category)
3. Rice Category Preference: Local Rice varieties (43.7%) and Basmati (39.4%) were the most preferred categories. Non-basmati rice was chosen by 26.3% of respondents, indicating a significant but lower preference compared to Local and Basmati rice. Broken Rice (10.6%) and niche varieties like Gujarat Sattar (0.6%) had minimal preference. (*There were 160 respondents, but as some customers chose multiple options, the total number of responses was 193. 160 respondents considered each RiceCategory.)
4. Consumption Frequency: Regular consumption was common, with 30% of

respondents consuming rice regularly. Weekly (28%) and two-times-a-week (17%) consumption patterns were also prevalent. Occasional consumption (3%), biweekly (13%), and monthly (6%) consumption indicated a diverse range of consumption frequencies.

5. Purchase Source: Reliance Smart Bazaar was the dominant source of purchase, with 69.4% of respondents buying their rice from there. D-Mart (19.4%) and grocery shops (18.75%) were also popular sources. Wholesaler markets (1.9%), Star Bazaar (1.9%), and farms (0.6%) were less common sources.

6. Brand Rice Purchased: Fortune (27.5%) and Daawat (26.3%) were the most purchased brands. India Gate (23.8%) and Kohinoor (21.3%) followed closely behind. Good Life (20.6%) and loose rice (11.8%) had moderate purchase rates. Devaaya (2.5%), Unity (1.3%), and Apple (0.6%) had very low purchase rates. (*There were 160 respondents, but as some customers chose multiple options, the total number of responses was 217. 160 respondents considered each Name of the Brand.)

7. Packaged Size Preference: The 1 kg package size was the most popular, with 51.9% of respondents purchasing it. Larger package sizes like 5 kg (21.3%) and 20 kg (10.6%) were also preferred. Other sizes (10 kg, 25 kg, 30 kg) had lower purchase rates, indicating a preference for smaller to mid-sized packages.

8. Promotional Influence: TV channel promotions were the most influential, with 73.1% of respondents affected by them. Newspaper (35.6%) and shop hoardings (36.3%) were also significant promotional channels. Hoardings at public places (32.5%) and cinema theatre advertisements (10.6%) had moderate influence. Radio channels (10.6%), wall paintings (3.8%), and bus/vehicle advertisements (4.4%) had a lesser impact. (*There were 160 respondents, but as some customers chose multiple options, the total number of responses was 331. 160 respondents considered each Rice CategoryPromotion.)

4. CONCLUSION

At Reliance Mall, female shoppers slightly outnumbered males, with the majority of respondents being between 21 and 50 years old. Most were graduates with a monthly income between Rs. 30,000 and Rs. 40,000, living in small households. Daawat and India Gate were the most preferred rice brands, with a notable preference for Local and Basmati rice categories. Regular consumption was common, and Reliance Smart Bazaar was the top purchase source. The 1 kg package size was the most popular, and TV channel promotions were the most influential in shaping buying decisions.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Hereby declare that generative AI technologies such as Large Language Models (ChatGPT, QuillBot, etc) and text-to-image generators have been used during the writing or editing of manuscripts.

Details of the AI usage are given below:

1. ChatGPT
2. QuillBot

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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