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ASSESSING CUSTOMER SATISFACTION AND SERVICE PREFERENCES FOR PACKAGED RO DRINKING WATER: A STUDY OF COMMERCIAL USERS IN PUNE CITY

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ABSTRACT

The availability of safe drinking water and the reliability of packaged reverse osmosis (RO) water services have become important considerations for commercial establishments. This study examines customer satisfaction towards 20-litre RO water among selected users in Pune City, with particular attention to entity type, daily requirement, price, chilled-water demand, payment terms, delivery timing, vendor choice, packaging preference and willingness to change the existing vendor. The study is based on primary data collected through a structured close-ended questionnaire from 90 respondents using non-probability cluster-area sampling. The respondents mainly represented industries, offices, hotels and banks. Descriptive analysis shows that 64% of respondents were from industries, 70% required 1–5 cans per day, 45% purchased a 20-litre can at Rs. 30, and 84% received RO water between 9:00 a.m. and 12:00 noon. A substantial 78% reported that they were not willing to change their existing vendor, while 22% were willing to change. The findings indicate that regularity of delivery, service quality, price, product quality and packaging are relevant dimensions of customer satisfaction. The study also identifies a predominantly local-brand market for 20-litre RO water among the surveyed establishments. The findings provide practical inputs for the surveyed RO-water supplier regarding service reliability, pricing, packaging, distribution planning and customer retention. Because the sample is limited to 90 respondents in Pune City and uses non-probability sampling, the results should be interpreted as descriptive rather than representative of the entire RO-water market.

Keywords: Customer satisfaction, Reverse Osmosis (RO), packaged drinking water, service quality, price, delivery, Pune City, the surveyed RO-water supplier

1. INTRODUCTION

Water is an essential input for human life and for the functioning of commercial and industrial establishments. Concerns regarding water quality, irregular municipal supply, urbanisation and increasing awareness of water purification have contributed to the use of purified and packaged drinking water. Reverse Osmosis (RO) is a purification process in which pressure is applied to move water through a semi-permeable membrane, thereby reducing dissolved and suspended impurities. The project report on which this paper is based describes RO as a commonly used water-purification technique and notes its use in residential, commercial and industrial applications.

The original field study was undertaken for the surveyed RO-water supplier to understand the requirements, preferences and satisfaction of RO-water users in Pune City. The survey focused particularly on establishments such as industries, offices, hotels and banks. The project report records intense local competition, differences in price, concerns regarding service and delivery, and the continuing use of traditional 20-litre cans. It also reports that local brands were commonly consumed by the surveyed establishments, with the brands Sea Boat Aqua, Jalraja Aqua, Acqatica Aqua, Oxy Aqua and Aqualiya Aqua identified during the market survey.

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Customer satisfaction in this context is not limited to the physical quality of water. It also involves whether the supplier delivers the required quantity at a convenient time, maintains consistent service, offers acceptable prices and packaging, and responds to customer requirements. The present paper therefore organises the original internship/project findings into a research-paper format and presents the available evidence using descriptive statistics.

2. REVIEW OF CONCEPTUAL BACKGROUND

Customer satisfaction is generally associated with the comparison between customer expectations and the customer's experience of a product or service. In packaged drinking-water distribution, the customer experience can be influenced by product quality, perceived purity, price, packaging, availability, delivery reliability, responsiveness and the ease of dealing with the vendor. The source project specifically identified price and service as major factors affecting preference for a particular brand and highlighted irregular or delayed delivery as an important market problem.

RO technology is described in the source project as a membrane-based purification process. The project also distinguishes RO from conventional filtration by explaining that RO involves solvent movement across a membrane under applied pressure. The report links demand for purified water with concerns about water quality, urbanisation, industrialisation and awareness of water-borne diseases. For commercial users, the requirement is also operational: water has to be available in sufficient quantity and at the time needed by the establishment.

The conceptual focus of this study is therefore service-oriented customer satisfaction. The variables captured in the questionnaire include daily consumption, purchase price, chilled-water requirement, preferred season for chilled water, payment terms, delivery time, number of shifts, current vendor, problems with the existing vendor, packaging preference and willingness to change the vendor. These variables provide a practical profile of customer needs rather than a formal psychometric measure of satisfaction.

3. RESEARCH PROBLEM

The field study identified several practical issues in the local RO-water market. Some vendors were perceived to offer lower-cost but lower-quality cans, while customers could find it difficult to distinguish quality differences. Delays or irregularity in RO-water service were reported as a concern. The project also noted that packaging design and hygiene could influence customer perceptions. In addition, many establishments continued to depend on corporation water or other sources, indicating that the RO-water supplier competes not only with other packaged-water vendors but also with alternative water sources.

Accordingly, the research problem can be stated as: To understand the requirements, preferences and service-related satisfaction of selected commercial and institutional users of 20-litre RO water in Pune City and to identify areas that can support improved customer retention and market development for the surveyed RO-water supplier.

4. OBJECTIVES OF THE STUDY

- To study customer satisfaction towards RO water among selected users in Pune City.
- To understand why and when consumers make purchase decisions regarding RO water.
- To examine consumer opinion regarding RO water from a health and quality perspective.
- To identify brand/vendor preferences and factors influencing purchase decisions.
- To study market competition among RO-water suppliers.

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Journal Website www.nrjsmm.in

- To examine customer attitudes towards price, packaging and purity.
- To identify customer suggestions for improvement of RO-water products and services.

5. RESEARCH METHODOLOGY

Component	Description
Research design	Descriptive research design
Nature of data	Primary data
Data collection instrument	Structured close-ended questionnaire
Sample size	90 respondents
Population	Customers/users of RO water
Sampling	Non-probability, cluster-area sampling
Study area	Pune City
Analysis	Frequency and percentage-based descriptive analysis

The study used primary data collected through a questionnaire designed around the parameters of the investigation. The source report states that the questionnaire contained close-ended questions and that responses were first analysed individually and then compared across respondents. The sample comprised 90 respondents. The sampling approach was non-probability cluster-area sampling, and the respondents were drawn from RO-water users in the study area.

The analysis in the source project is descriptive. Percentages are used to summarise the responses. No inferential test, reliability coefficient, scale validation or hypothesis-testing procedure is reported in the project; therefore, this paper does not introduce such statistics or claim statistical significance.

6. RESULTS AND ANALYSIS

Table 1 presents the distribution of respondents by entity type. Industries constituted the largest group, followed by hotels, offices and banks. This composition is consistent with the project's stated emphasis on commercial and industrial RO-water use.

Entity type	Respondents (%)	Approx. respondents (n)
Industry	64%	58
Office	13%	12
Hotel	20%	18
Bank	3%	3
Total	100%	90

Note: Respondent counts are approximate because the source report provides percentages rounded to whole numbers; the percentages sum to 100%.

Table 2 shows daily demand for 20-litre cans. Most respondents required between 1 and 5 cans per day, while smaller groups required higher quantities.

Daily requirement	Share
1–5 cans	70%
5–10 cans	16%
10–15 cans	7%
15–20 cans	7%
20+ cans	0%

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Price was another important market variable. Forty-five percent of respondents purchased a 20-litre can at Rs. 30, making this the most common reported price point. Twenty-three percent paid Rs. 25. Smaller shares reported Rs. 10, Rs. 15, Rs. 20 and Rs. 35.

Price per 20-litre can	Share
Rs. 10	10%
Rs. 15	8%
Rs. 20	7%
Rs. 25	23%
Rs. 30	45%
Rs. 35	7%

Demand for chilled water was very limited in the surveyed group: 99% reported normal water use and only 1% reported chilled-water use. Among those considering chilled water, the project records summer as the preferred period, with 100% of the relevant responses concentrated in summer.

Service preference	Share
Normal water	99%
Chilled water	1%

Payment terms and delivery timing provide useful operational information. Monthly payment was the most common credit arrangement (62%), followed by daily payment (26%) and weekly payment (12%). Delivery was concentrated between 9:00 a.m. and 12:00 noon (84%), while 16% received water between 6:00 a.m. and 9:00 a.m.

Variable	Category	Share
Payment terms	Daily	26%
	Weekly	12%
	Monthly	62%
Delivery time	6–9 a.m.	16%
	9 a.m.–12 noon	84%

The survey also captured vendor choice. Sea Boat Aqua accounted for 43% of reported current vendors, followed by Jalraja Aqua (31%), Aqualiya Aqua (12%), Oxy Aqua (8%) and Acqatica Aqua (6%). These figures indicate a fragmented local market in which several regional suppliers serve the surveyed establishments.

Current vendor/brand	Share
Sea Boat Aqua	43%
Jalraja Aqua	31%
Aqualiya Aqua	12%
Oxy Aqua	8%
Acqatica Aqua	6%

Packaging preference strongly favoured the traditional 20-litre RO-water can: 90% preferred traditional packaging, while 10% indicated a preference for changed/modified packaging. This is relevant for product redesign because customers may value familiarity and operational convenience over novelty.

Packaging preference	Share
Traditional packaging	90%
Modified packaging	10%

Finally, 78% of respondents reported that they were not willing to change their existing vendor, whereas 22% were willing to change. This result suggests that existing supplier relationships are relatively established among the surveyed users. At the same time, the 22%

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Journal Website www.nrjsmm.in

willing-to-change group represents a clearly identified segment for suppliers seeking new customers.

Willingness to change existing vendor	Share
Yes	22%
No	78%

7. DISCUSSION

The results show that customer requirements in the surveyed RO-water market are primarily operational and service-oriented. The concentration of demand in the 1–5-can category suggests that many establishments have relatively modest daily requirements, although a smaller set of users requires substantially larger quantities. For a supplier, this pattern has implications for route planning, inventory and delivery frequency.

Price is another visible dimension of the market. The most frequently reported purchase price was Rs. 30 per 20-litre can, while the survey also recorded purchases from Rs. 10 to Rs. 35. The range indicates price variation among vendors. The original project additionally reports that price and service were considered major factors in choosing a particular brand. Therefore, pricing decisions need to be considered together with service reliability rather than in isolation.

Delivery timing is particularly significant. Since 84% of respondents reported receiving water between 9:00 a.m. and 12:00 noon, supplier distribution can be organised around this dominant time window. The project's qualitative observations also identify delayed or irregular service as a major market problem. Thus, reliable delivery may be a meaningful source of differentiation in a market where customers perceive limited differences among local brands.

The vendor-retention finding is also important. Although 78% were not willing to change their existing vendor, 22% were willing to consider a change. This indicates that customer acquisition may require a clear reason to switch, such as dependable delivery, competitive pricing, quality assurance, improved customer service or a convenient introductory offer. The source project similarly recommends samples, product information, pricing strategies and promotional offers for prospective customers.

Packaging preferences provide another practical insight. Ninety percent preferred traditional packaging. Any packaging modification should therefore be evaluated for hygiene, handling, durability and convenience rather than assuming that visual novelty alone will improve satisfaction.

8. FINDINGS

- Industries represented 64% of the 90 respondents, followed by hotels (20%), offices (13%) and banks (3%).
- Seventy percent of respondents required 1–5 cans of 20-litre RO water per day.
- Rs. 30 was the most frequently reported purchase price for a 20-litre can (45%).
- Ninety-nine percent reported using normal water rather than chilled water; chilled-water demand was concentrated in summer.
- Monthly payment was the most common payment arrangement (62%).
- Eighty-four percent received RO water between 9:00 a.m. and 12:00 noon.

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Journal Website www.nrjsmm.in

- Sea Boat Aqua and Jalraja Aqua were the two most frequently reported current vendors in the survey.
- Ninety percent preferred traditional RO-water packaging.
- Seventy-eight percent were not willing to change their existing vendor, while 22% were willing to change.
- The original project identified irregular service/delivery, pricing differences, packaging and quality as important market issues.

9. MANAGERIAL IMPLICATIONS FOR RO-WATER SUPPLIERS

- Service reliability: Establish route-wise delivery schedules and monitor on-time delivery, particularly during the dominant 9:00 a.m.–12:00 noon period.
- Customer retention: Maintain regular contact with existing customers and address complaints quickly because most respondents were already attached to an existing vendor.
- Customer acquisition: Focus on the 22% willing-to-change segment through product samples, clear product information, introductory offers and dependable service.
- Pricing: Benchmark the price of a 20-litre can against local competitors while ensuring that lower prices do not compromise water quality or service.
- Quality communication: Clearly communicate purification, hygiene and handling practices so that customers can distinguish quality service from low-cost alternatives.
- Packaging: Retain the familiar 20-litre format while improving hygiene, cleanliness, handling convenience and visual identification where feasible.
- Distribution planning: Use customer location and daily requirement to design efficient delivery routes and reduce delays.
- Market positioning: Since the surveyed market contains several local brands, consistent service and customer relationship management can be used as practical differentiation dimensions.

10. LIMITATIONS OF THE STUDY

The study is limited to Pune City and to 90 respondents. The sample was selected using non-probability cluster-area sampling, so the results cannot be statistically generalised to all RO-water consumers in Pune, Maharashtra or India. The findings are based on self-reported questionnaire responses and may therefore be affected by respondent recall or response bias. The source report also notes time constraints, incomplete responses from some customers and practical difficulties during questionnaire collection. In addition, the study uses descriptive percentages and does not establish causal relationships or statistical significance.

CONCLUSION

The study demonstrates that the surveyed 20-litre RO-water market in Pune City is characterised by regular commercial demand, strong presence of local vendors and significant attention to price and service. The majority of respondents required a small daily quantity, preferred traditional packaging and received water during the 9:00 a.m.–12:00 noon period. The high proportion of respondents retaining their current vendor indicates the importance of established supplier relationships, while the 22% willing-to-change segment indicates scope for customer acquisition.

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The findings support the conclusion of the original project that Pune has market potential for 20-litre RO water but also faces strong local competition. For the surveyed RO-water supplier, customer satisfaction can be supported by reliable delivery, acceptable pricing, consistent quality, hygienic packaging and responsive service. These conclusions should be understood within the boundaries of the sample and descriptive research design.

SUGGESTIONS FOR FUTURE RESEARCH

- Use a larger probability sample covering different zones of Pune City to improve representativeness.
- Develop and validate a multi-item customer-satisfaction scale covering quality, reliability, responsiveness, price, packaging and complaint handling.
- Apply inferential techniques such as chi-square, correlation or regression in a future study where the underlying data and measurement design support such analysis.
- Compare industrial, hotel, office and banking customers separately to identify segment-specific requirements.
- Examine the relationship between service reliability and willingness to change vendors.
- Include water-quality testing and objective service records alongside customer perceptions in future research.

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APPENDIX A: COMPLETE SURVEY DATA ANALYSIS

To ensure that the empirical information contained in the original field project is fully represented, the following table consolidates all eleven reported survey questions and their corresponding percentage results. These descriptive results form the empirical base of the present manuscript.

No.	Survey variable	Response category	Share
1	Entity type	Industry	64%
1	Entity type	Office	13%
1	Entity type	Hotel	20%
1	Entity type	Bank	3%
2	Daily requirement of 20-litre RO cans	1–5 cans	70%
2	Daily requirement of 20-litre RO cans	5–10 cans	16%
2	Daily requirement of 20-litre RO cans	10–15 cans	7%
2	Daily requirement of 20-litre RO cans	15–20 cans	7%
2	Daily requirement of 20-litre RO cans	20 cans and above	0%
3	Price per 20-litre can	Rs. 10	10%
3	Price per 20-litre can	Rs. 15	8%
3	Price per 20-litre can	Rs. 20	7%

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Journal Website www.nrjsmm.in

3	Price per 20-litre can	Rs. 25	23%
3	Price per 20-litre can	Rs. 30	45%
3	Price per 20-litre can	Rs. 35	7%
4	Requirement for chilled water	Yes	1%
4	Requirement for chilled water	No	99%
5	Preferred period for chilled water	Winter	0%
5	Preferred period for chilled water	Summer	100%
5	Preferred period for chilled water	Rainy	0%
6	Credit/payment terms	Daily	26%
6	Credit/payment terms	Weekly	12%
6	Credit/payment terms	Monthly	62%
6	Credit/payment terms	Other	0%
7	RO-water delivery time	6:00–9:00 a.m.	16%
7	RO-water delivery time	9:00 a.m.–12:00 noon	84%
7	RO-water delivery time	12:00 noon–3:00 p.m.	0%
7	RO-water delivery time	3:00–6:00 p.m.	0%
7	RO-water delivery time	6:00–9:00 p.m.	0%
8	Number of shifts	First shift	70%
8	Number of shifts	Second shift	30%
8	Number of shifts	Third shift	0%
8	Number of shifts	Not applicable	0%
9	Current distributor/vendor	Sea Boat Aqua	43%
9	Current distributor/vendor	Jalraja Aqua	31%
9	Current distributor/vendor	Acqatica Aqua	6%
9	Current distributor/vendor	Oxy Aqua	8%
9	Current distributor/vendor	Aqualiya Aqua	12%
10	Packaging preference	Traditional packaging	90%
10	Packaging preference	Modified packaging	10%
11	Willingness to change existing vendor	Yes	22%
11	Willingness to change existing vendor	No	78%

1. Entity type

The sample is predominantly industrial: 64% of respondents belong to industries. Hotels account for 20%, offices 13%, and banks 3%. The dataset therefore primarily reflects institutional/commercial water requirements, with industrial users forming the core respondent group.

2. Daily RO-water requirement

The largest requirement category is 1–5 cans per day (70%). Another 16% require 5–10 cans, while 7% each require 10–15 and 15–20 cans. No respondent falls in the 20-plus category. This indicates that route planning should accommodate a large base of low-to-moderate-volume customers along with a smaller number of higher-volume users.

3. Purchase price

Rs. 30 is the most frequently reported price point (45%), followed by Rs. 25 (23%). The remaining respondents report Rs. 10, Rs. 15, Rs. 20 or Rs. 35. The distribution confirms that price variation exists in the surveyed local market and that Rs. 25–30 is the dominant reported range.

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Peer Reviewed & Refereed Journal (IF: 6.95)
Journal Website www.nrjsmm.in

4. Chilled-water requirement

Only 1% report a requirement for chilled water, while 99% use normal water. Chilled water is therefore a niche requirement within this sample rather than a mainstream service.

5. Season for chilled water

The source project reports that the chilled-water requirement is concentrated entirely in summer: 100% of the relevant responses identify summer, while winter and rainy-season responses are 0%. This supports seasonal rather than year-round planning for chilled-water demand.

6. Credit/payment terms

Monthly payment is the dominant arrangement at 62%, followed by daily payment at 26% and weekly payment at 12%. The pattern is relevant to billing cycles, receivables management and distributor relationships.

7. Delivery time

The main delivery window is 9:00 a.m.–12:00 noon, reported by 84% of respondents. The remaining 16% receive water between 6:00 a.m. and 9:00 a.m.; no respondents are reported in the later time bands. Delivery operations should therefore be aligned with the dominant morning requirement.

8. Number of shifts

Seventy percent of respondents report a first shift and 30% a second shift; no third-shift or non-applicable response is reported. This indicates that demand is concentrated around establishments operating primarily in one or two shifts.

9. Current vendor

Sea Boat Aqua is the most frequently reported vendor at 43%, followed by Jalraja Aqua at 31%. Aqualiya Aqua accounts for 12%, Oxy Aqua 8%, and Acqatica Aqua 6%. The market is therefore distributed across several local suppliers rather than concentrated in a single vendor.

10. Packaging

Ninety percent prefer traditional RO-water packaging, compared with 10% preferring modified packaging. Familiarity and functional convenience appear more consistent with current customer preference than packaging change.

11. Willingness to change vendor

Seventy-eight percent are not willing to change their existing vendor, while 22% are willing. This indicates substantial existing vendor retention in the sample, but also identifies a measurable segment open to alternative suppliers.