# A comprehensive analysis of the ice cream market dynamics in Rajkot City, Gujarat, India

## ABSTRACT

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| --- |
| This research provides a comprehensive analysis of the ice cream market dynamics in Rajkot City, focusing on retailer preferences, brand competition, purchasing behavior, and operational infrastructure. The study, based on data from 157 retailers, highlights that confectionary shops (36.31%) and pan-plus outlets (35.67%) dominate the market, while general Kirana stores account for 23.57%. Notably, 33.12% of retailers reported no ice cream sales, indicating considerable untapped market potential. Ice Cream, under the Gujarat Cooperative Milk Marketing Federation (GCMMF), enjoys a prominent presence in several clusters but faces uneven market penetration due to infrastructural limitations—particularly the absence of deep freezers in 31.85% of retail outlets. Only 28% of respondents currently stock ice cream, with purchase frequency closely linked to freezer ownership and sales volume. Impulse SKUs such as cups, cones, and kulfi received high satisfaction scores from retailers, while larger SKUs like family and party packs underperformed, often due to low consumer demand and storage constraints. The study further identifies that higher brand availability and purchasing frequency are concentrated in clusters with better infrastructure and engaged retailers. These findings emphasize the importance of strategic interventions including improved cold storage infrastructure, enhanced retailer engagement, targeted marketing, and product rotation to drive higher sales and increase market share. Ultimately, the research offers valuable insights for strengthening ’s competitive position in Rajkot’s growing urban ice cream market. |

*Keywords: Ice Cream, GCMMF, Real Milk Real Ice Cream, Retail Distribution, Strategic Pricing, Market Penetration, Retailer Awareness, Consumer Satisfaction, Sales Strategy, Rajkot Market, Brand Loyalty.*

## 1. INTRODUCTION

India's retail sector, one of the world's most vibrant markets, has undergone significant transformation, evolving from traditional marketplaces to a structured ecosystem encompassing both organized and unorganized players. Technological advancements, particularly in e-commerce and quick commerce platforms, have revolutionized shopping experiences, offering convenience and a wide array of choices. This expansion not only caters to the evolving needs of consumers but also generates employment opportunities, contributing significantly to India's economic development. The Indian ice cream market, a delectable component of the country's dairy industry, has witnessed remarkable growth, transitioning from seasonal indulgence to year-round consumption. Valued at approximately USD 3.4 billion, the market is projected to surpass USD 5 billion by FY25, propelled by rising disposable incomes, urbanization, and a penchant for diverse flavors. Major players like, Kwality Wall's, and Vadilal have expanded their portfolios, introducing innovative offerings such as vegan, low-sugar, and artisanal ice creams to cater to health-conscious and experimental consumers. This segment's growth not only satiates the nation's sweet tooth but also fosters economic opportunities across the value chain, from dairy farmers to retail entrepreneurs.

Ice cream has long been a cherished indulgence globally, and in India, its market has witnessed dynamic evolution over the decades. During the early 1990s, India’s ice cream industry was predominantly dominated by the unorganized sector, with a few key players like Kwality Walls, Vadilal, and Dinshaw operating in the organized segment. In 1995, a brand under the Gujarat Cooperative Milk Marketing Federation (GCMMF) — entered the competitive market with Ice Cream. Despite not having a first-mover advantage, quickly differentiated itself by emphasizing affordability, quality, and wide accessibility.

The brand introduced a strategic pricing model that offered ice creams 20–30% cheaper than competitors and launched the 'Humara Apna Deep Freezer' initiative to support its retail distribution. Most importantly, positioned its products as made from “Real Milk and Real Ice Cream,” appealing strongly to health-conscious consumers and mothers seeking nutritional alternatives for children. With a strong distribution network, impactful advertising like the “Chalo Chalo” jingle, and a focus on real milk and fresh cream, rapidly grew its market presence.

This study explores market analysis, sales strategy, and operations in Rajkot City, examining factors influencing retailer behavior, consumer satisfaction, and operational efficiencies to support continued growth and market penetration.

**1.1 Research Objective**

1. To Evaluate the Market Penetration of Ice Cream Segment in Rajkot City Compared to Competing Brands.
2. To Analyse Purchasing Behaviour of Respondents for Ice Cream in Rajkot City.
3. To Measure Retailer Satisfaction for Ice Cream in Rajkot City.

## 2. Methodology

The relevant data for the research study was collected by using a primary survey done by a questionnaire. The questionnaire was filled out by respondents using personal interviews. In the present study, there were around 157 number of respondents. Respondents were retailers and they were randomly selected from clusters wise in Rajkot City. The collected data was analyzed using descriptive statistics.

## 3. RESULTS AND DISCUSSION

The study has arrived after subjecting the data to necessary tabulation and analysis keeping in view the objectives of the study and research methodology.

This chapter explains the result obtained after a systematic analysis of data. The results are as under.

**3.1** **Profile of Respondents**

It was commonly accepted that a retailer’s socioeconomic background will inevitably affect his or her opinions of the products, as well as their living conditions, purchasing decisions, purchasing power and product awareness. Therefore, it feels reasonable to test this hypothesis and determine whether these qualities had an impact on the Respondents opinions on purchasing ice cream. With this goal in mind, the socio-economic makeup of the respondents and their opinions on the consumption of ice cream in the Rajkot City. The section is devoted to highlighting the personal characteristics of the sample respondent’s five features which were mentioned below:

**3.1.1 PoP Wise Distribution of Respondents**

In the retailers surveyed in Rajkot, confectionery shops were found to be the most frequent point of purchase for ice cream with a share of 36.31% among the total respondents. Pan plus stores followed closely with a share of 35.67%. General kirana stores had an input of 23.57% of the responses, while modern format stores (MFS) formed a minimal share of 3.82%. The push carts were the least frequent with a mere 0.64% of respondents, reflecting their negligible contribution to the distribution network. (Table 1)

**3.1.2 Purchase Wise Distribution of Respondent**

More than two-thirds of Rajkot respondents (66.88%) currently buy ice cream, reflecting a healthy active base of consumers. Some 30.57% of respondents said that they did not buy ice cream, while a minority (2.55%) reported having done so previously, reflecting scope for reactivation among past purchasers. (Table 2)

**3.1.3 Monthly Purchase Wise Distribution Respondents**

Of the 33.12% retailers in Rajkot reporting no sales of ice cream, it shows that a large chunk of retailers are not active in the category. Of the sellers, the largest proportion (24.20%) posted between ₹10,000 and ₹19,999 worth of monthly sales. Next were 14.65% selling up to ₹10,000, 12.74% selling between ₹30,000 and ₹49,999, 10.83% selling up to ₹50,000, and just 4.46% achieving between ₹20,000 and ₹29,999 worth of sales. These statistics indicate that though a large segment invests in the ice cream market, high-volume sales are quite narrow. (Table 3)

**3.1.4 Ice Cream Brands Availability Wise Distribution Respondents**

In Rajkot, almost half of the sample (49.68%) mentioned selling just a single brand of ice cream, reflecting a preference or constraint for single-brand stocking. Approximately 33.12% of them did not have any ice cream brands to stock. A proportionately smaller section of them stocked multiple brands, with 12.74% having two brands, 3.18% having three, and just 1.27% having four. This shows limited diversity in brands at retail points with a strong trend towards single-brand stocking. (Table 4)

**3.1.5 Deep Freezer Availability Wise Distribution Respondents**

In Rajkot, a little less than half of the respondents (47.13%) had access to a single deep freezer for storing ice cream, reflecting a typical configuration among most retailers. Approximately 31.85% indicated they had no deep freezer, reflecting limited capacity to store ice cream products. A lesser proportion had greater storage capacity, with 15.92% having two deep freezers, 4.46% having three, and a mere 0.64% having more than five. This allocation emphasizes both the availability and limitations of cold storage facilities within the region. (Table 5)

**3.2 Market Reach of Ice Cream Brands**

This section delves into evaluating the market penetration of the ice cream segment in Rajkot City by comparing with competing brands. Through a series of meticulously crafted questions, the study assessed area-wise market penetration, brand availability, shop category distribution, and deep freezer accessibility. The aim was to gauge retailers' awareness of different ice cream brands, their stocking behavior, and infrastructure readiness. By analyzing retailer responses across various city zones, the study identified both the strengths of ’s presence and the availability of competing brands, while also highlighting gaps in infrastructure and visibility that can be addressed through focused marketing and distribution strategies.

**3.2.1 Area Wise Market Penetration**

The market penetration of the total ice cream market across Rajkot's eight clusters is 67%, with significant differences between clusters. Cluster 4 and Cluster 8 had the highest level of penetration at 93% each, reflecting high market presence. Cluster 6 had 78%, whereas Clusters 1, 3, 5, and 7 had moderate levels between 61% and 64%. Cluster 2 had the lowest penetration at 44%, which is an area where targeted distribution and marketing focus could be pursued. These findings indicate disparity in distribution and market interaction throughout the city. (Table 6)

**3.2.2 Area Wise Ice Cream Brand Availability**

In the eight clusters in Rajkot, there were a total of 14 various ice cream brands present among 157 respondents. Cluster 5 had the greatest number of brand availability with 9 brands, then Cluster 6 with 8, and Clusters 1 and 4 with 7 brands. Clusters 3, 7, and 8 were each exposed to 6 brands, while Cluster 2 demonstrated the least available brands with 5. This makes the brand presence fairly diversified across the majority of the clusters, though some areas had more competitive diversity than others. (Table 7)

**3.2.3 Area Wise Shop Category in Rajkot**

The brand-wise availability of ice cream in the clusters of Rajkot indicates mixed preferences and availability. Brand A6 was most widely available in 52 of the 157 outlets, with the highest number in Cluster 1 (10 outlets) and Cluster 2 (14 outlets). This was succeeded by Brand A4, which existed in 38 stores and was particularly well-liked in Clusters 1, 3, 5, 6, 7, and 8. Brand A2 existed in 20 stores, whereas Brand A5 existed in 23 stores with moderate presence in every cluster. Brand A1 existed in 17 stores, and Brand A3 existed with the least presence with only 7 stores citywide. This means A6 and A4 are ruling the Rajkot market, and other brands have cluster-specific restricted distribution. (Table 8)

**3.2.4 Area Wise Deep Freezer Availability**

Availability of deep freezers in every cluster of Rajkot reveals that a majority of shops work with minimal cold storage facility. 47.13% (74 outlets) among 157 respondents had a single deep freezer, and 15.92% (25 outlets) had two. Few only had more storage with 7 outlets featuring three freezers and a mere 1 outlet having more than five. In particular, 31.85% (50 outlets) had none at all, with Cluster 2 recording the highest number without any (14), followed by Clusters 3 and 5. Clusters 4 and 8 reported the best-equipped outlets, with 11 of their respondents each possessing at least one deep freezer. This reveals an uneven storage infrastructure distribution, which may affect the consistency and level of ice cream sales across the various areas. (Table 9)

**3.3 Analyzing Ice Cream Purchase Patterns**

This section focuses on analyzing the purchasing behavior of respondents for ice cream in Rajkot City. Key factors examined include the number of respondents who regularly purchase ice cream, their frequency of purchase, reasons for not buying ice cream, and their estimated monthly purchase volume. The insights gathered help in understanding retailers buying patterns, seasonal or behavioral fluctuations, and barriers to purchase. By evaluating these aspects, the study identifies opportunities for increasing retailer engagement, addressing deterrents, and tailoring promotional efforts to boost ice cream sales in the local market.

**3.3.1 Number of Respondents Who Purchased Ice Cream**

Of 105 Rajkot respondents with access to ice cream, a mere 28% said they had bought it, and the other 72% had not. This indicates there is a huge gap between the availability of the product and the resultant consumer purchase, which needs to be studied in terms of conversions through factors like price, product likability, brand choice, or retailer incentive. (Table 10)

**3.3.2 Frequency of Buying Ice Cream**

In Rajkot, the percentage of respondents purchasing ice cream indicates habitual consumer behavior. Approximately 32% purchased ice cream twice a week, which was the most frequent. This was closely followed by 28% purchasing weekly and 27% purchasing daily, further supporting strong habitual consumption. On the other hand, 13% purchased ice cream less than once a week. Interestingly, no one of the surveyed people reported zero purchases, pointing to a positive trend in frequent ice cream consumption. (Table 11)

The frequency of ice cream purchases across different brands in Rajkot highlights varying levels of consumer engagement. Brand A4 demonstrated the highest overall activity, with 17 respondents buying it twice a week and 13 on a weekly basis, reflecting strong and consistent demand. Brand A1 stood out for daily purchases, with 13 respondents reporting daily buying behavior—indicating a loyal customer base. Brand A2 saw moderate engagement, particularly in the twice-a-week category (9 respondents). Brand A5, on the other hand, showed a higher concentration in the 'more than a week' category (9 respondents), suggesting it may be a less frequently purchased or more seasonal choice. Brand A3 had the lowest engagement overall, with small numbers across all frequency categories. This distribution suggests that A1 and A4 have strong consumer loyalty and regular turnover, while A5 and A3 may require targeted marketing efforts to boost purchase frequency. (Table 12)

**3.3.3 Reason for Not Buying Ice Cream**

The number of purchases of ice cream by various brands in Rajkot shows different levels of consumer activity. Brand A1 had the highest numbers of daily purchases with 13 respondents, indicating the strongest habitual consumption. Brand A4 had the largest number of twice-a-week purchases with 17, followed by A2 with 9. The largest number of weekly purchases were made for Brand A4 (13) and A5 (10), indicating regular but less frequent demand. Brand A5 also recorded the greatest variety of consumers buying over once a week (9), indicating the brand's niche but loyal consumer base. This contrasts with Brand A3 having relatively lesser interest at all frequencies. These trends point out Brand A4's wide appeal and Brand A1's dominant daily loyalty, yet show prospects for expansion for other brands. (Table 13)

**3.3.4 Monthly Purchase Ice Cream**

The correlation of monthly ice cream sales with the number of deep freezers among 105 respondents in Rajkot exposes that there exists a strong connection between freezer capacity and sales volume. Those who had sales exceeding ₹50,000 largely possessed more freezer capacity—5 had one freezer, 8 had two, 3 had three, and 1 had over five. In the ₹30,001–₹50,000 category, 12 retailers used one freezer, 6 used two, and 2 used three, reflecting moderate infrastructure. For lower sales levels, particularly below ₹20,000, the majority of respondents used just one or no deep freezers. In particular, for the ₹10,000–₹20,000 range, 30 of 38 respondents used just one freezer. This trend indicates that higher capacity in freezers can facilitate more sales, stressing the significance of cold storage facilities in driving the performance of ice cream retail. (Table 14)

**3.4 Retailers’ Satisfaction with Ice Cream Distribution**

This section focuses on analyzing the purchasing behavior of respondents for ice cream in Rajkot City. Key factors examined include the number of respondents who regularly purchase ice cream, their frequency of purchase, reasons for not buying ice cream, and their estimated monthly purchase volume. The insights gathered help in understanding retailers buying patterns, seasonal or behavioral fluctuations, and barriers to purchase. By evaluating these aspects, the study identifies opportunities for increasing retailer engagement, addressing deterrents, and tailoring promotional efforts to boost ice cream sales in the local market.

**3.4.1 Respondents Ice Cream Products Rating**

Sales performance of Cup SKUs in Rajkot, as assessed by 105 respondents on a Likert scale, points towards a positive market response. An overwhelming majority (88 respondents) assigned sales as 'Very Good' (score 5) that scored the highest of 440. Next in line were 14 respondents who rated it as 'Good' (score 4) that scored 56 points. Few rated sales as 'Average' (2 respondents) and 'No Sale' (1 respondent), with no 'Very Low Sale' rating. Cumulative total score was 503, which yielded a high average Likert scale score of 4.79 ± 0.56, indicating strong satisfaction and high sales performance of Cup SKUs in the sample. (Table 15)

The sales performance of Cone SKUs in Rajkot, based on responses from 105 retailers, reflects a generally strong market presence. A majority of respondents (70) rated Cone SKU sales as 'Very Good' (score 5), contributing a total of 350 points. This was followed by 30 respondents rating sales as 'Good' (score 4), adding 120 points. A small number rated sales as 'Average' (2 respondents), 'Very Low' (2), and 'No Sale' (1), indicating minimal dissatisfaction. The total score amounted to 481, resulting in an average Likert scale score of 4.58 ± 0.71, suggesting a positive but slightly more varied perception of Cone SKU sales compared to Cup SKUs. (Table 16)

The sales performance of Stick/Kulfi SKUs in Rajkot reflects high retailer satisfaction and market demand. Of 105 respondents, an overwhelming majority (88) evaluated their sales as 'Very Good' (score 5), adding 440 points. Also, 14 respondents evaluated sales as 'Good' (score 4), whereas only 2 evaluated them as 'Average' and 1 as 'No Sale.' None of the respondents indicated 'Very Low Sale,' witnessing consistent positive acceptance. The overall cumulative score was 503, resulting in a high Likert scale mean of 4.79 ± 0.56, same as that of Cup SKUs, and reflecting robust and consistent sales performance for Stick/Kulfi products throughout the region. (Table 17)

The sales performance of FP/CP/PP SKUs in Rajkot shows moderate market acceptance, with mixed responses from the 105 surveyed retailers. A significant portion of respondents rated sales as 'Good' (32 respondents, score 128) and 'Very Good' (21 respondents, score 105), indicating some strong performance. However, a considerable number reported lower satisfaction—27 rated sales as 'Very Low' and 23 as 'Average,' together contributing 123 points, while 2 respondents indicated 'No Sale.' The total cumulative score reached 358, resulting in a Likert scale mean of 3.41 ± 1.13, suggesting average overall performance with high variation in retailer perception across different sales environments. (Table 18)

**3.4.2 Respondents Freezers Wise Ice Cream Monthly Purchase**

An analysis of monthly ice cream purchase frequency in relation to the number of deep freezers reveals a positive correlation between storage capacity and purchase regularity. Among retailers with one freezer (72 in total), the majority purchased weekly (26) or twice a week (25), while 10 made daily purchases. However, those with higher freezer capacities showed more frequent purchases: retailers with two freezers (25) had a higher rate of daily purchases (13), and those with three freezers (7) included 4 daily purchasers. Notably, the only respondent with more than five freezers reported daily purchasing. These trends suggest that greater freezer capacity enables or reflects higher turnover and more frequent restocking, underscoring the role of cold storage in supporting active ice cream sales. (Table 19)

**3.4.3 Respondents Cluster Wise Ice Cream Monthly Purchase**

The frequency of monthly ice cream purchases in Rajkot's clusters indicates dissimilar purchasing behavior. The greatest daily purchase frequencies were recorded in Cluster 1 (8 respondents), followed by Cluster 5 (5) and Cluster 3 (4), signifying intensive product activity in these clusters. Cluster 2 and Cluster 6 both experienced greater twice-a-week purchasing frequencies, both with 4 and 6 respondents respectively. Weekly buys were fairly even, with Clusters 1, 4, 7, and 8 each registering 4 to 6 respondents in this category. Less than weekly buying was more prevalent in Clusters 4 and 8, with 4 and 3 respondents respectively. Generally, Clusters 1 and 6 consistently demonstrated high levels of engagement at all frequencies, making them good markets, while Clusters 4 and 8 had less consistent and less frequent purchasing behavior. (Table 20)

**Table 1. Point of Purchase Wise Distribution of Respondents (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Point of Purchase** | **No. of Respondents** | **Percentage** |
| 1 | Confectionary shop | 57 | 36.31% |
| 2 | General Kirana Store | 37 | 23.57% |
| 3 | MFS | 6 | 3.82% |
| 4 | Pan Plus | 56 | 35.67% |
| 5 | Push Cart | 1 | 0.64% |
|  | Total | 157 | 100% |

*Source: Primary data*

**Table 2. Ice Cream Purchase Wise Distribution of Respondent(n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Ice Cream Purchase** | **No. of Respondents** | **Percentage** |
| 1 | Yes | 105 | 66.88% |
| 2 | No | 48 | 30.57% |
| 3 | Before | 4 | 2.55% |
|  | Total | 157 | 100% |

*Source: Primary data*

**Table 3. Ice Cream Monthly Sales Wise Distribution Respondents (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Ice Cream Monthly Sales** | **No. of Respondents** | **Percentage** |
| 1 | Up to 50000  | 17 | 10.83% |
| 2 | 30000-49999 | 20 | 12.74% |
| 3 | 20000-29999 | 7 | 4.46% |
| 4 | 10000-19999 | 38 | 24.20% |
| 5 | Below 10000 | 23 | 14.65% |
| 6 | No Sales Ice Cream | 52 | 33.12% |
|  | Total | 157 | 100% |

*Source: Primary data*

**Table 4. Ice Cream Brands Availability Wise Distribution Respondents (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Ice Cream Brands Available** | **No. of Respondents** | **Percentage** |
| 1 | 0 | 52 | 33.12% |
| 2 | 1 | 78 | 49.68% |
| 3 | 2 | 20 | 12.74% |
| 4 | 3 | 5 | 3.18% |
| 5 | 4 | 2 | 1.27% |
|  | Total | 157 | 100% |

*Source: Primary data*

**Table 5. Deep Freezer Availability Wise Distribution Respondents (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Deep Freezer Available** | **No. of Respondents** | **Percentage (%)** |
| 1 | 0 | 50 | 31.85% |
| 2 | 1 | 74 | 47.13% |
| 3 | 2 | 25 | 15.92% |
| 4 | 3 | 7 | 4.46% |
| 5 | More then 5 | 1 | 0.64% |
|  | Total | 157 | 100% |

*Source: Primary data*

**Table 6. Area Wise Market Penetration (n=157)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr No.** | **Area** | **Total**  | **Penetration** | **Percentage (%)** |
| 1 | Cluster 1 | 28 | 18 | 64% |
| 2 | Cluster 2 | 25 | 11 | 44% |
| 3 | Cluster 3 | 23 | 14 | 61% |
| 4 | Cluster 4 | 15 | 14 | 93% |
| 5 | Cluster 5 | 18 | 11 | 61% |
| 6 | Cluster 6 | 18 | 14 | 78% |
| 7 | Cluster 7 | 16 | 10 | 63% |
| 8 | Cluster 8 | 14 | 13 | 93% |
|  | Total | 157 | 105 | 67% |

*Source: Primary data*

**Table 7. Area Wise Ice Cream Brand Availability (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Area** | **Total**  | **No. of Brand Available** |
| 1 | Cluster 1 | 28 | 7 |
| 2 | Cluster 2 | 25 | 5 |
| 3 | Cluster 3 | 23 | 6 |
| 4 | Cluster 4 | 15 | 7 |
| 5 | Cluster 5 | 18 | 9 |
| 6 | Cluster 6 | 18 | 8 |
| 7 | Cluster 7 | 16 | 6 |
| 8 | Cluster 8 | 14 | 6 |
|  | Total | 157 | 14 |

*Source: Primary data*

**Table 8. Area Wise Shop Category in Rajkot (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Area** | **Total**  | **No. of Brand Available** |
| **A1** | **A2** | **A3** | **A4** | **A5** | **A6** |
| 1 | Cluster 1 | 28 | 3 | 4 | 2 | 6 | 3 | 10 |
| 2 | Cluster 2 | 25 | 4 | 1 | 0 | 2 | 4 | 14 |
| 3 | Cluster 3 | 23 | 2 | 1 | 2 | 7 | 2 | 9 |
| 4 | Cluster 4 | 15 | 2 | 4 | 2 | 2 | 4 | 1 |
| 5 | Cluster 5 | 18 | 3 | 1 | 0 | 5 | 2 | 7 |
| 6 | Cluster 6 | 18 | 1 | 5 | 1 | 5 | 2 | 4 |
| 7 | Cluster 7 | 16 | 0 | 3 | 0 | 5 | 2 | 6 |
| 8 | Cluster 8 | 14 | 2 | 1 | 0 | 6 | 4 | 1 |
|  | Total | 157 | 17 | 20 | 7 | 38 | 23 | 52 |

*Source: Primary data (A1-< ₹10000, A2-₹10000 – ₹20000, A3-₹20001 - ₹30000, A4- ₹30001 - ₹50000, A5- ₹30001 - ₹50000, A6 -₹50000 <)*

**Table 9. Area Wise Deep Freezer Availability (n=157)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Area** | **Total**  | **No. of Deep Freezer** |
| **0** | **1** | **2** | **3** | **5<** |
| 1 | Cluster 1 | 28 | 10 | 8 | 8 | 1 | 1 |
| 2 | Cluster 2 | 25 | 14 | 9 | 2 | 0 | 0 |
| 3 | Cluster 3 | 23 | 9 | 9 | 3 | 2 | 0 |
| 4 | Cluster 4 | 15 | 1 | 11 | 2 | 1 | 0 |
| 5 | Cluster 5 | 18 | 7 | 6 | 4 | 1 | 0 |
| 6 | Cluster 6 | 18 | 2 | 11 | 3 | 2 | 0 |
| 7 | Cluster 7 | 16 | 6 | 9 | 1 | 0 | 0 |
| 8 | Cluster 8 | 14 | 1 | 11 | 2 | 0 | 0 |
|  | Total | 157 | 50 | 74 | 25 | 7 | 1 |

*Source: Primary data*

**Table 10. Number of Respondents Who Purchased Ice Cream (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Purchased Ice Cream** | **No. of Respondents** | **Percentage (%)** |
| 1 | Yes | 29 | 28% |
| 2 | No | 76 | 72% |
|  |  | 105 | 100% |

*Source: Primary data*

**Table 11. Frequency of Buying Ice Cream (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency** | **No. of Respondents** | **Percentage (%)** |
| 1 | Daily | 28 | 27% |
| 2 | Twice a week | 34 | 32% |
| 3 | Weekly | 29 | 28% |
| 4 | More than a week | 14 | 13% |
| 5 | No Purchase | 0 | 0% |
|  | Total | 157 | 100 |

*Source: Primary data*

**Table 12. Monthly Purchase wise Frequency of Buying Ice Cream (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency** | **Total**  | **No. of Respondents** |
| **A1** | **A2** | **A3** | **A4** | **A5** |
| 1 | Daily | 28 | 13 | 6 | 3 | 6 | 0 |
| 2 | Twice a week | 34 | 3 | 9 | 1 | 17 | 4 |
| 3 | Weekly | 29 | 1 | 3 | 2 | 13 | 10 |
| 4 | More than a week | 14 | 0 | 2 | 1 | 2 | 9 |
|  | Total | 105 | 17 | 20 | 7 | 38 | 23 |

*Source: Primary data(A1-< ₹10000, A2-₹10000 – ₹20000, A3-₹20001 - ₹30000, A4- ₹30001 - ₹50000, A5- ₹30001 - ₹50000, A6 -₹50000 <)*

**Table 13. Number of Respondents Who Purchased Ice Cream (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Purchased Ice Cream** | **No. of Respondents** | **Percentage (%)** |
| 1 | Yes | 29 | 28% |
| 2 | No | 76 | 72% |
|  |  | 105 | 100% |

*Source: Primary data*

**Table 14. Deep Freezers Wise Purchased Ice Cream (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Ice Cream Monthly Sales** | **Total**  | **No. of Deep Freezer** |
| **1** | **2** | **3** | **5<** |
| 1 | ₹50000 < | 17 | 5 | 8 | 3 | 1 |
| 2 | ₹30001 - ₹50000 | 20 | 12 | 6 | 2 | 0 |
| 3 | ₹20001 - ₹30000 | 7 | 4 | 2 | 1 | 0 |
| 4 | ₹10000 – ₹20000 | 38 | 30 | 8 | 0 | 0 |
| 5 | < ₹10000 | 23 | 21 | 1 | 1 | 0 |
|  | Total | 105 | 74 | 25 | 7 | 1 |

*Source: Primary data*

**Table 15. Respondents (Cup SKUs) Rate on Sales Basis(n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency****(Likert score multiplier)** | **Total**  | **Penetration** |
| 1 | 1 - No Sale | 1 | 1 |
| 2 | 2 - Very Low Sale | 0 | 0 |
| 3 | 3 - Avg Sale | 2 | 6 |
| 4 | 4 - Good Sale | 14 | 56 |
| 5 | 5 - Very Good Sale | 88 | 440 |
|  | Total | 105 | 503 |
|  | Likert Scale | 4.79 ± 0.56 |

*Source: Primary data*

**Table 16. Respondents (Cone SKUs ) Rate on Sales Basis(n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency****(Likert score multiplier)** | **Total**  | **Penetration** |
| 1 | 1 - No Sale | 1 | 1 |
| 2 | 2 - Very Low Sale | 2 | 4 |
| 3 | 3 - Avg Sale | 2 | 6 |
| 4 | 4 - Good Sale | 30 | 120 |
| 5 | 5 - Very Good Sale | 70 | 350 |
|  | Total | 105 | 481 |
|  | Likert Scale | 4.58 ± 0.71 |

*Source: Primary data*

**Table 17. Respondents (Stick/ Kulfi SKUs) Rate on Sales Basis(n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency****(Likert score multiplier)** | **Total**  | **Penetration** |
| 1 | 1 - No Sale | 1 | 1 |
| 2 | 2 - Very Low Sale | 0 | 4 |
| 3 | 3 - Avg Sale | 2 | 6 |
| 4 | 4 - Good Sale | 14 | 120 |
| 5 | 5 - Very Good Sale | 88 | 350 |
|  | Total | 105 | 481 |
|  | Likert Scale | 4.79 ± 0.56 |

*Source: Primary data*

**Table 18. Respondents FP/CP/ PP SKUs Rate on Sales Basis(n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency****(Likert score multiplier)** | **Total**  | **Penetration** |
| 1 | 1 - No Sale | 2 | 1 |
| 2 | 2 - Very Low Sale | 27 | 4 |
| 3 | 3 - Avg Sale | 23 | 6 |
| 4 | 4 - Good Sale | 32 | 120 |
| 5 | 5 - Very Good Sale | 21 | 350 |
|  | Total | 105 | 481 |
|  | Likert Scale | 3.41 ± 1.13 |

*Source: Primary data (FP – Family Pack, CP- Combo Pack, PP – Party Pack)*

**Table 19. Freezers Wise Ice Cream Monthly Purchase (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency** | **Total**  | **No. of Deep Freezer** |
| **1** | **2** | **3** | **5<** |
| 1 | Daily | 28 | 10 | 13 | 4 | 1 |
| 2 | Twice a week | 34 | 25 | 7 | 2 | 0 |
| 3 | Weekly | 29 | 26 | 2 | 1 | 0 |
| 4 | More than a week | 14 | 11 | 3 | 0 | 0 |
|  | Total | 105 | 72 | 25 | 7 | 1 |

*Source: Primary data*

**Table 20. Freezers Wise Ice Cream Monthly Purchase (n=105)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Frequency** | **Total**  | **Cluster No.** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Daily | 28 | 8 | 2 | 4 | 3 | 5 | 3 | 1 | 2 |
| 2 | Twice a week | 34 | 2 | 4 | 7 | 2 | 4 | 6 | 5 | 4 |
| 3 | Weekly | 29 | 6 | 4 | 1 | 5 | 2 | 3 | 4 | 4 |
| 4 | More than a week | 14 | 2 | 1 | 2 | 4 | 0 | 2 | 0 | 3 |
|  | Total | 105 | 18 | 11 | 14 | 14 | 11 | 14 | 10 | 13 |

*Source: Primary data*

## 4. SUMMARY OF RESULTS AND INTERPRETATION

**4.1 Objective 1: To Evaluate the Market Penetration of The Ice Cream Segment in Rajkot City Compared to Competing Brands**

* The study analyzed 157 retailers, with the majority being confectionery and pan-plus shops.
* Penetration of ice cream was 67% in general, with highest penetration in Cluster 4 and 8 (93% each).
* 14 brands were found in the market, with Cluster 5 revealing maximum brand diversity.
* There were gaps in the infrastructure 32% lacked a deep freezer, particularly in Cluster 2.
* widely distributed but encountered strong competition and irregular penetration in certain regions.
* There is a very good coverage of in some clusters, but infrastructural deficiencies (such as non-availability of freezers) and variable brand availability indicate the necessity for interventions, particularly in low-penetration pockets like Cluster 2.

**4.2 Objective 2: To Analyze Purchasing Behaviour of Respondents for Ice Cream in Rajkot City**

* Only 28% of retailers bought ice cream, reflecting huge untapped potential.
* Among buyers, 32% purchased twice a week, 27% daily, and 28% weekly.
* Frequent purchasing was positively correlated with freezer ownership.
* Higher-volume retailers were more likely to buy more frequently.
* Barriers were limited awareness, low demand, and storage limitations.
* Opportunity and constraint are reflected in purchasing behavior of retailers with sufficient storage and improved sales performance are more actively involved with products, highlighting the need to address operational constraints and to improve retailer assistance.

**4.3 Objective 3: To Measure Retailer Satisfaction for Ice Cream in Rajkot City**

* The product category performance was measured by Likert scale scores.
	+ Cup and Kulfi SKUs received 4.79 (Very Good).
	+ Cone SKUs received 4.58 (Good to Very Good).
	+ Family Pack/Party Pack SKUs received 3.40 (Average).
* Freezer availability had a significant impact on monthly purchase behavior.
* Clusters 1, 3, and 6 exhibited a higher frequency of purchases, representing more active retailers.
* There is high retailer satisfaction for impulse SKUs such as cups, cones, and kulfi but poor performance for larger SKUs such as FP/CP/PP, possibly because of lower consumer demand or storage constraints. Targeted support, stock rotation, and demand creation are required to even out product performance.
* Barriers were limited awareness, low demand, and storage limitations.

## 5. CONCLUSION

The research performed to assess and enhance ice cream market performance in Rajkot has provided extensive insights against a range of objectives, leading to a series of actionable findings. The total market penetration of ice cream in Rajkot is 67%, with considerable variation by city clusters. Though Clusters 4 and 8 evidenced high penetration, clusters such as Cluster 2 indicated comparatively poor presence, which was a pointer to the requirements of localised marketing and distribution. Retailers with superior infrastructure, especially deep freezer availability, were also more likely to carry and sell ice cream, a pointer to the fact that cold storage is a critical driver of facilitating product presence and turnover. Retailer buying behavior also reinforced the same, as the retailer with higher sales quantity and improved storage made more trips to purchase, usually on a daily or bi-weekly basis. Product category review found that impulse SKUs like kulfis, cones, and cups had high satisfaction scores, with the average Likert score being above 4.5, reflecting high confidence of the retailer in such items. The results are useful as an implementation guide for enhancing retail strategy in Rajkot via data-driven decision-making and organizational alignment.

## CONSENT

As per international standards or university standards, respondents’ written consent has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

Disclaimer (Artificial intelligence)

Option 1:

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

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Details of the AI usage are given below:

1.

2.

3.

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