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Data-Driven Approaches to Customer Churn: A Comprehensive Analysis at Hatsun Agro Products

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ABSTRACT: This study looks into customer attrition at Hatsun Agro Products Ltd. (HAPL), one of the top private dairy companies in India that competes strongly with businesses like Nestlé and Amul. A combination of frequent buying habits and strong brand-switching tendencies, customer churn, or attrition, is an enormous issue in the dairy industry. The research identifies important churn drivers like price sensitivity, promotional influence, service quality, and product problems using descriptive and exploratory analytics. The study also looks at the way emotional brand connections and digital engagement affect consumer loyalty. Despite Hatsun has a solid customer base, data analysis shows that churn risk is increased by gaps in pricing consistency, emotional branding, and service transparency. The main goal of this study is to assist Hatsun Agro Products Limited in reducing money lost due to customers leaving and to gain an edge over competitors. In today's changing market old methods of analysing customer loss don't work well anymore. This study uses cutting-edge number crunching and Power BI dashboards to offer a real-time, data-based way to understand why customers leave.

The results demonstrate how crucial predictive analytics is for proactively recognizing at-risk clients and creating retention plans like customized promotions, improved service delivery, and loyalty programs. According to the study's outcomes, a data-driven approach to churn analysis improves long-term profitability and competitiveness in the rapidly-growing Indian dairy business while also decreasing customer churn.

KEYWORDS: Customer churn, Exploratory analytics, Retention, Emotional Branding

I. INTRODUCTION

Hatsun Agro Products Ltd. (HAPL), established by R. G. Chandramogan in 1970, the company has expanded to become one of the largest private dairy enterprises in India. It operates in both urban and rural areas, ensuring the delivery of high-quality dairy products through a widespread distribution network and direct sourcing from farmers. The Indian dairy sector stands as one of the largest and most rapidly expanding segments in the global food industry, making a substantial contribution to the nation's economy. As incomes rise, urban areas grow, and dietary preferences shift, consumer interest in dairy has transformed from traditional milk to a variety of value-added dairy items like ice cream, cheese, yogurt, and dairy-based drinks. Hatsun Agro Product Ltd has been recognized as "The Fastest Growing Asian Dairy Company," highlighting its market success. Hatsun Agro Products Ltd. (HAPL) ranks among India's top dairy firms, serving millions of customers with its robust brand lineup, which includes Arokya Milk, Arun Ice Cream, Hatsun Dairy, Hatsun Ghee, and Ibaco Ice Creams. Customer churn, also known as attrition, refers to the percentage of customers who choose to stop purchasing a company's products or services within a defined time period. This is an important metric in the dairy industry, as consumer behaviour is strongly influenced by price sensitivity, the availability of alternative products and services, product quality, and customer service levels. At Hatsun Agro Products Limited, we know that churn is critical to our business because in the dairy industry, consumer purchasing decisions are influenced by regular purchases and strong brand loyalty. Today, Hatsun Agro faces increased competition from Amul, Nestlé, and other top local dairy producers. To keep customers coming back for more, Hatsun Agro needs to analyse customer behaviour, predict churn, and identify strategies for improving customer retention. Traditional churn analysis is reactive in nature. Companies only focus on customer loss after the fact. With predictive analytics and business intelligence tools like Power BI, companies can take a proactive approach. By analyzing historical sales data, customer buying patterns, and engagement levels, companies can identify at-risk customers and take proactive action before they choose to leave.

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This helps the company stay one step ahead of rivals while keeping strong ties with its customers. Customer churn is a rising concern in the world of business, especially for dairy companies where households buy dairy products frequently and customer loyalty is of utmost importance to staying above profitability margins. Hatsun Agro Products Limited is a major player in this space and faces intense competition with brands like Amul, Nestlé and many others in the regional market.

The number of choices customers have in the market today, allows them to switch brands effortlessly, simply by changing the price, providing promotions, improving the quality of products offered, or service experiences. It plays an important role for Hatsun Agro, which further helps to understand the various reasons for customer churn.

This research is key for Hatsun Agro Products Limited to cut down on customers leaving and boost ways to keep them. By looking at how customers act, the company can roll out targeted ads personalized deals, and reward programs to get people buying more. Using Power BI and smart number-crunching, Hatsun Agro can spot who might leave and take action instead of just reacting after the fact. This study helps the company price things better, step up their service, and get customers more invested in their brand giving them an edge over rivals. In the end, it's all about losing less money, building stronger ties with customers, and helping the business grow for years to come.

II. REVIEW OF LITERATURE:

Hadden (2007) also emphasized the significance of developing software that marries data mining with proven business intelligence solutions. The objective of this paper is to make a gapless transition from conceptual frameworks to field applications and lead the development of advanced sophisticated churn management systems. The article "Benefits of Quantile Regression for the Analysis of Customer Lifetime Value in a Contractual Setting: An Application in Financial Services" considered the use of quantile regression and survival analysis for churn forecasting in the financial services industry.

Benoit and Van den Poel (2009) did the research on the basis of data from a financial institution and processed thousands of customer records, although the precise sample size is not mentioned. The study pointed to the application of advanced regression models for forecasting both customer lifetime value and churn probabilities. It stressed continuous observation of customers' behaviour over time and individual-level targeting of retention strategies through lifetime value projections. The research makes a considerable contribution to the literature by expanding the knowledge base on predictive modelling for financial churn.

The market study "Customer Experience: The New Competitive Battleground" by **Gartner, (2012)** asserted that reducing churn by as little as 5% can boost business profitability by as much as 25%. This was founded on cross-industry case studies and industry surveys but not based on a sample size. Key findings are a high correlation between reducing churn and profitability, the pivotal role of customer experience in successful churn management, and the strategic imperative for businesses to invest in data analytics and customer experience (CX) solutions. The report presents good advice on integrating churn management into long-term profitability strategies.

Lemmens and Gupta (2013) in their paper "Managing Churn Using Marketing Instruments" researched the application of customer segmentation as a prediction tool for churn, based on customer relationship management (CRM) data gathered from a European telco with an extensive customer base of more than 10,000 individuals.

The researchers grouped customers into several risk segments in order to boost the accuracy of retention activities, thereby confirming the effectiveness of segmentation models in predicting churn. The paper also recommended the application of business intelligence tools, such as Power BI, to examine the performance of several segments. The study demonstrates the effectiveness of segmentation techniques in significantly enhancing churn analysis and retention activities.

The research "Telecom Churn Analysis and Financial Impact Assessment" by **Joshi. (2014)** examined the financial consequences of customer loss in the telecom industry on the basis of data gathered from 1,500 customers of a large Indian telecom company.

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The research quantified revenue losses by customer segment, identified price, service quality, and competitive pressures as key drivers of churn, and linked lower churn rates with increased financial sustainability. This research emphasizes the economic necessity of avoiding churn, especially for telecommunication operators in highly competitive markets.

The research "Understanding the Emotional Drivers of Customer Loyalty: A Retail Perspective" by **Baxendale et al. (2015)** investigated the psychological and emotional drivers of customer loyalty and how these drive churn.

Based on a survey of 250 **UK retail consumers**, the research found that emotional engagement is a better predictor of customer retention than customer satisfaction in itself. The research emphasized the role of relationship marketing—namely one-to-one communication and sensitivity towards the brand—as a mechanism for preventing churn.

In "Marketing Management," **Kotler and Keller (2016)** highlight churn analysis as a central component of strategic customer relationship management. While not a research-based book, the work condenses learning from several case studies in a range of industries.

The major findings highlighted the importance of monitoring repurchase behaviour and customer satisfaction, the application of analytics to facilitate CRM decision-making on the basis of evidence, and the application of tools such as Power BI to monitor churn in real time. Both a practitioner's guide and an academic work, this book promotes the application of evidence-based methods to customer relationship management.

The paper "Customer Churn Analysis in the Service Sector Using Business Intelligence Tools," by **Ahmad et al. (2018)**, examined the major drivers of customer churn based on transactional and survey data gathered from 600 customers in the Indian retail banking sector. The study identified major drivers of churn, such as price-related problems, dissatisfaction with services, and absence of emotional connection.

It also recommended the use of Power BI dashboards to enable effective monitoring of churn measures and the need for prompt and responsive decision-making. The study is highly beneficial to organizations that are considering the use of business intelligence tools to combat churn.

The research "Customer Churn in the Indian Dairy Industry: A Power BI Perspective" by **Verma and Chauhan (2020)** examined churn behaviour among dairy firms through structured interviews and firm data for 350 customers of a leading dairy brand in North India. The research found key drivers of churn to include inconsistent service, price problems, and product-related quality problems.

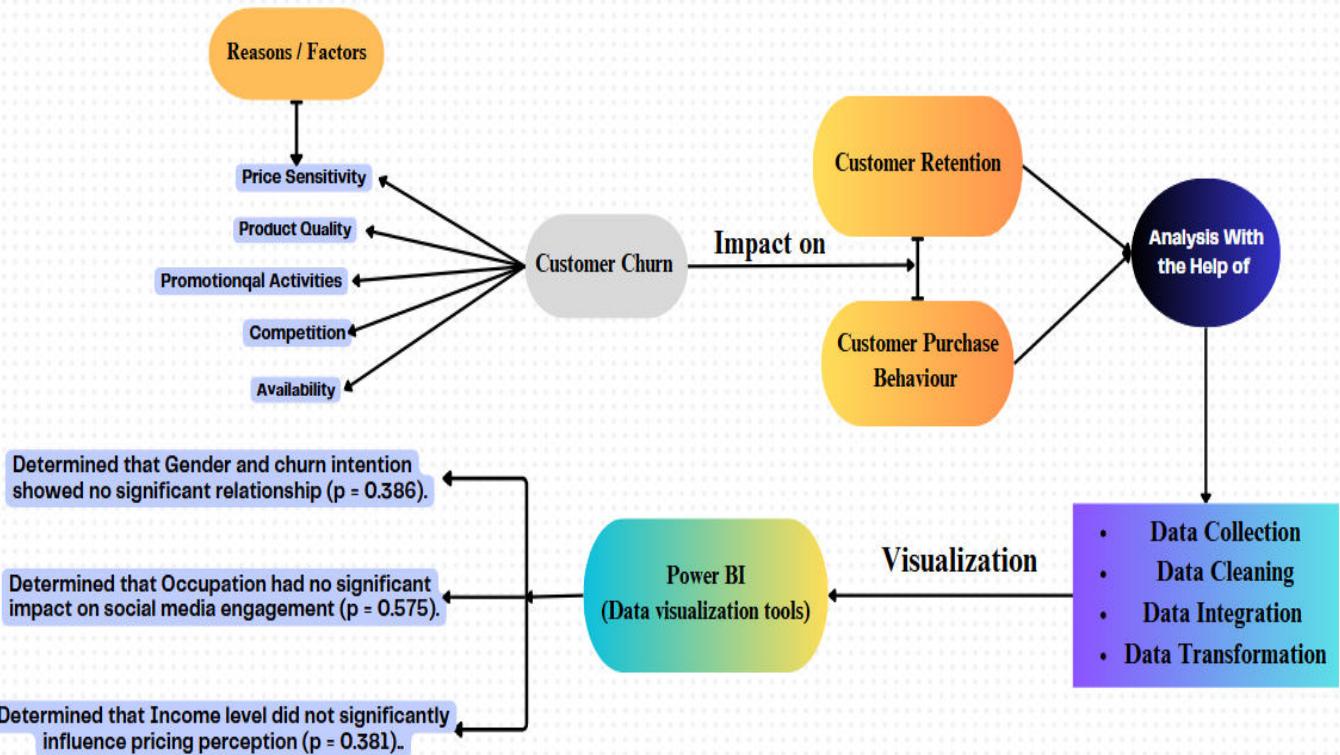
III. CONCEPTUAL FRAME WORK

Hatsun Agro Product Limited is an analytics-driven company in the process of understanding and tracking customer churn through advanced business intelligence tools like Power BI. The program focuses on analysing customer habits, purchase frequency, product selection, and feedback trends to decide on the most critical drivers of churn. By merging past trends with up-to-the-minute data, the company will be able to create actionable dashboards that can effectively report trends about churn for different customer groups.

Power BI is central to this strategy by making data visible in an interactive and user-friendly manner. Power BI assists Hatsun in tracking churn metrics such as a fall in the volume of purchases, inactivity, and dissatisfaction factors. This data empowers the management team to create targeted retention strategies, improve the quality of service, and tailor offerings based on customer needs. The initiative ultimately enables Hatsun's goal of reducing churn, enhancing customer satisfaction, and attaining long-term profitability through the leverage of the entire potential of business analytics.

IV. RESEARCH METHODOLOGY

This study uses a descriptive and analytical research design to better understand and assess the significance of customer churn. The main tools we are used for this study Microsoft Excel and PowerBI. The Primary data was collected form the 250 respondents. The study used purposive sampling to ensure that the participants could provide relevant responses.



OBJECTIVES:

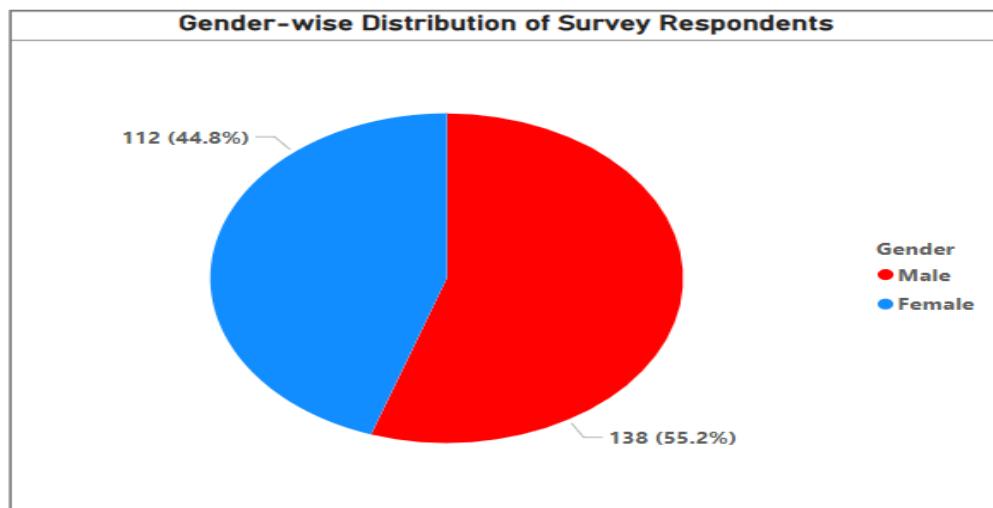
1. To study the impact of price, promotions, and service quality on customer retention and satisfaction.
2. To identify key factors influencing customer churn at Hatsun Agro Products Limited using data analytics.
3. To analyse the relationship between variables, such as digital engagement and customer retention.

VI DATA ANALYSIS AND INTERPRETATION

Table :1 Showing Gender-wise Distribution of Survey Respondents

Gender	Number of Responses	Percentage
Male	138	55.2%
Female	112	44.8%
Total	250	100%

Showing Gender-wise Distribution of Survey Respondents



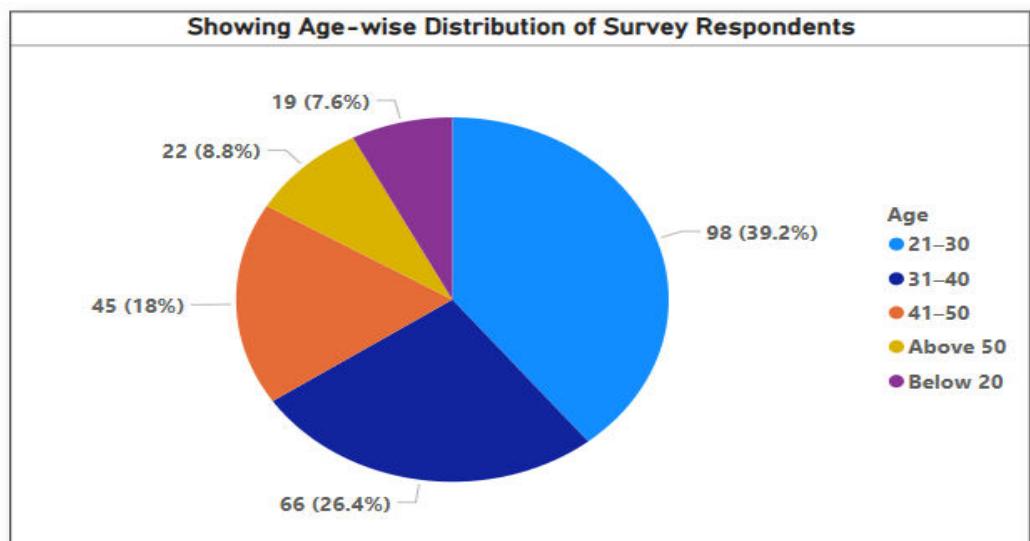
Interpretation: -

The pie chart shows the gender of the 250 respondents, of which 55.2% (138) are male and 44.8% (112) are female. This shows that there was slightly more interest from male respondents in completing the survey; however, the gender proportions are quite balanced, with a difference of only 10.4%.

Table:2 Showing Age-wise Distribution of Survey Respondents

Age Group	Number of Responses	Percentage
Below 20	19	7.6%
21–30	98	39.2%
31–40	66	26.4%
41–50	45	18%
Above 50	22	8.8%
Total	250	100%

Showing Age-wise Distribution of Survey Respondents.



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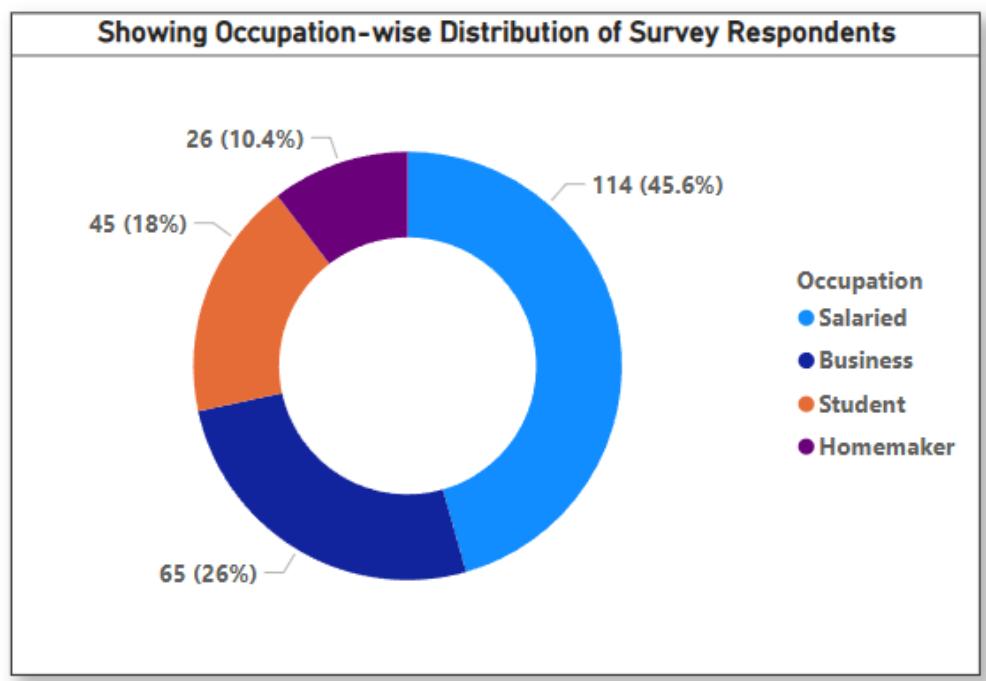
Interpretation: -

The pie chart shows responses from individuals of varying age groups to a survey. The majority (39.2%) of the respondents were aged 21-30, making this the highest group. The second highest in age response group is 31-40 with 26.4%. The age bracket of 41-50 account for 18% of responses. There were a smaller number of individuals responded from the group above 50 (8.8%) and below the age of 20 (7.6%). This indicates the survey was predominantly answered by young adults aged 21-40.

Table:3 Showing Occupation-wise Distribution of Survey Respondents.

Occupation	Number of Responses	Percentage
Student	45	18%
Salaried	114	45.6%
Business	65	26%
Homemaker	26	10.4%
Total	250	100%

Showing Occupation-wise Distribution of Survey Respondents.



Interpretation: -

The pie chart indicates the occupational distribution of 250 respondents. Of those, 45.6% have a salaried occupation, making it the largest occupational group. Following that group is respondents in business (26%) and students (18%). Lastly, the smallest group was homemakers (10.4%). This indicates that the most respondent were working professionals, with salaried workers accounting for almost half of total responses.

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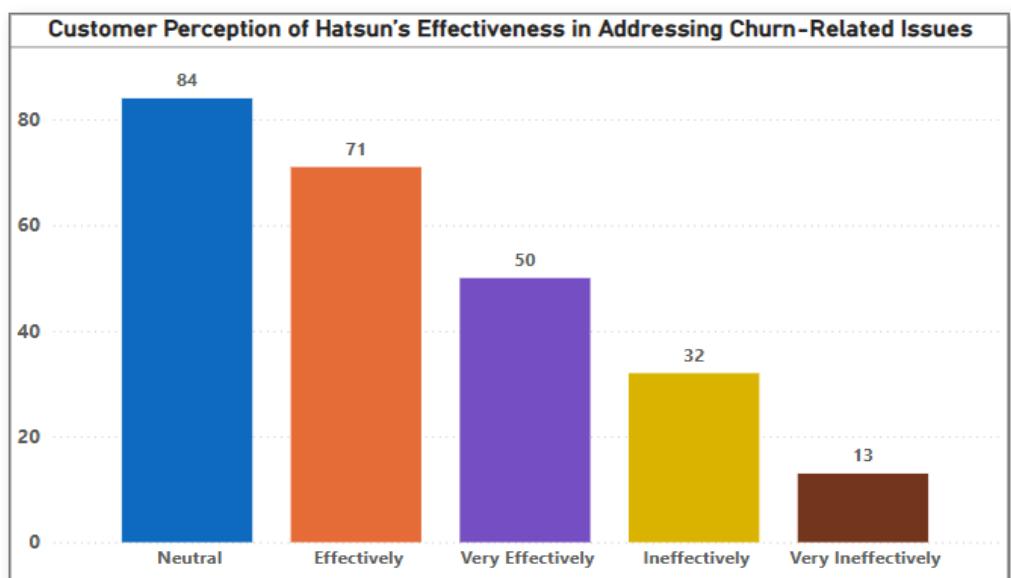
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Table:4-Showing Customer Perception of Hatsun’s Effectiveness in Addressing Churn- Related Issues

Response Option	Number of Responses	Percentage (%)
Very Effectively	50	20%
Effectively	71	28.4%
Neutral	84	33.6%
Ineffectively	32	12.8%
Very Ineffectively	13	5.2%
Total	250	100%

Customer Perception of Hatsun’s Effectiveness in Addressing Churn-Related Issues



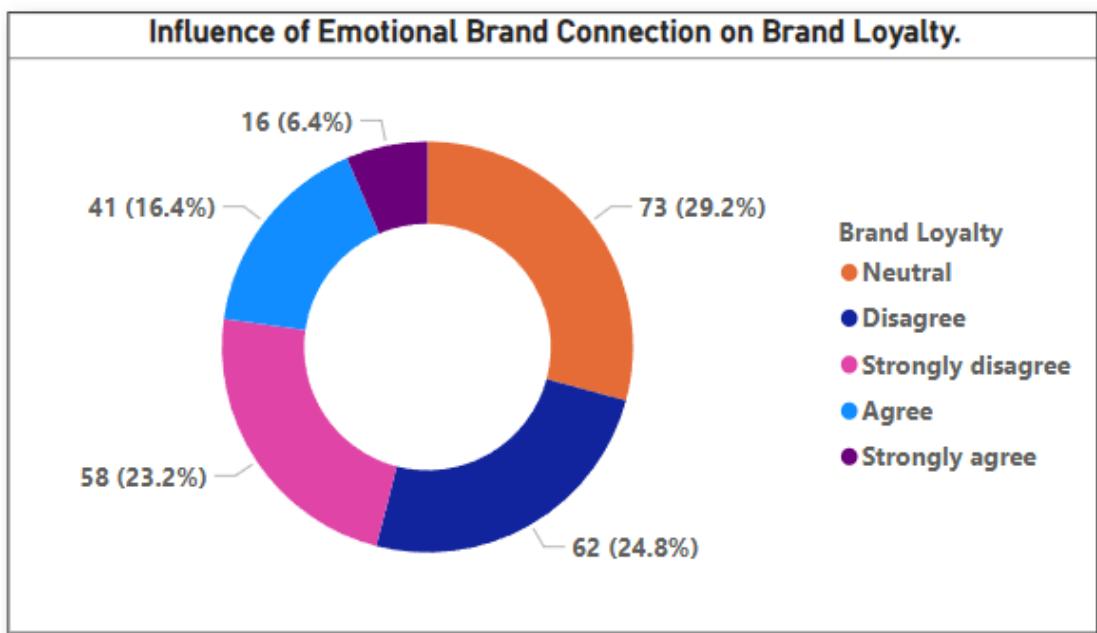
Interpretation:

This chart shows the 250 respondents, 20.0% said Hatsun handled issues that could cause them to stop using Hatsun very effectively and 28.4% said it effectively. About 33.6% were neutral, meaning they neither agreed nor disagreed. But 12.8% said Hatsun was ineffective in handling these issues and 5.2% said hatsun was very ineffective. Overall, almost half the respondents are satisfied with how Hatsun dealt with issues created by customers but there is a significant portion that can indicate things can improve. This shows that Hatsun can take definitive steps to retain customers.

Table:5 Showing Influence of Emotional Brand Connection on Brand Loyalty

Response Option	Number of Responses	Percentage (%)
Strongly Disagree	58	23.2%
Disagree	62	24.8%
Neutral	74	29.6%
Agree	40	16%
Strongly Agree	16	6.4%
Total	250	100%

Showing Influence of Emotional Brand Connection on Brand Loyalty.



Interpretation:

This chart shows how emotional brand attachment impacts customer loyalty to Hatsun, based on 250 responses: 23.2% Strongly Disagree and 24.8% Disagree, meaning nearly half of respondents feel no emotional connection to the brand. 29.6% are Neutral, implying they might be ambivalent or undecided. 16% Agree and 6.4% Strongly Agree, meaning a small minority feel emotionally attached. Emotional connection currently has a limited role in retaining customers, which presents an opportunity for Hatsun to build stronger brand affinity through building trust and brand storytelling.

Descriptive Statistics:

Age & Monthly Household Income

Statistic	Age (Q3)	Monthly Income (Q5)
Mean	33.84 years	₹ 43,380 (estimated)
Median	35.5 years	₹ 40,000 (estimated)
Mode	25.5 years	₹ 50,000 (from most frequent ₹40,001–₹60,000)

Interpretation:

The average respondent is approximately 33.84 years old, and the median is 35.5, which indicates a relatively youthful, mid-career audience. The modal age group is 21–30, which indicates a majority of participants are young adults. The average monthly household income is approximately ₹43,380, and the median is around ₹40,000. The modal ranges of income occur at ₹40,001–₹60,000, making ₹50,000 a reasonable estimate for the mode. This shows that the respondents are middle-income, with a few higher income applicants up ticking the average ever so slightly.

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- ❖ ➤ The majority of the respondents (55.2%) are male, and 44.8% are female, showing slightly higher male representation in the survey.
- ❖ ➤ The majority of the respondents are in the 21–30 age group (39.2%), followed by 31–40 (26.4%), implying a young and middle-aged consumer base.
- ❖ ➤ Salaried people (45.6%) are the largest occupational category, followed by business professionals (26%), which shows good participation from working professionals.
- ❖ ➤ The highest income segment (38%) makes ₹40,001–₹60,000 per month, indicative of a middle-income customer base.
- ❖ ➤ A majority of customers (29.2%) have used Hatsun products for 1–2 years, with 26.8% being comparatively new customers (less than a year), indicative of recent market reach.
- ❖ ➤ Leading pairs of Hatsun products purchased on a regular basis are Milk, Curd, Ice Cream, and Paneer (11.6%), and Milk, Curd, and Ice Cream alone at 8.8%, validating their popularity.
- ❖ ➤ Most frequent purchases are weekly (30.4%), then bi-weekly (23.2%) and daily (21.2%), reflecting constant and stable use of the product.
- ❖ ➤ Most convenient purchase points are company-owned outlets or Parlors (31.6%), then supermarkets (26.8%) and neighbourhood shops (23.2%), reflecting a combination retail channel usage.
- ❖ ➤ A majority of respondents (75.2%) disagree or are neutral that Hatsun's price is an indicator of the product's quality, reflecting doubts regarding perceived value.

VII. SUGGESTIONS

- ❖ Convert the 29.2% 1–2-year customer base into long-term loyal users by providing them with special loyalty rewards or engagement programs.
- ❖ Re-engage the 26.8% new customers (<1 year) with special onboarding promotions and personalized offers.
- ❖ Since 66.8% of the consumers are product issue-oriented, emphasize product freshness and safety and quality control messages.
- ❖ Emphasize solving service-related issues, as more than 40% of them judged Hatsun's policies as negative or neutral, expressing poor customer service and transparency.
- ❖ Since only 26.8% think Hatsun prices are even, examine and unify prices across channels to restore trust.
- ❖ Tap the 73.2% loyalty irrespective of cheaper competitors by reinforcing strong brand values and product dependability.
- ❖ Launch more robust digital content strategy, specifically since 30.4% are moderately satisfied and 47.6% are highly satisfied, by including interesting, informative pictures and product stories.

VIII. CONCLUSION

The study has found that Hatsun Agro Product Ltd. has great customer loyalty, particularly amongst regular/mid-income users, although this could improve quite substantially. Increase service transparency and consistency of products so that churn from dissatisfaction can be lowered. Improving digital presence, particularly on Instagram and Facebook, and improving the digital content and quality of content can allow consumers to connect with the brand. Greater transparency around pricing, gaps in service expectations and issues around product can ultimately build trust. Also, innovation such as introducing combo packs, eco-friendly packaging or lactose free variants will attract and retain an even bigger customer made.

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