

Factors influencing the buying pattern of selected carbonated dairy drink by the consumers in Anand city, Gujarat.

Abstract

This study is intended to identify the factors influencing the buying pattern of a selected carbonated dairy drink by the consumers in Anand city, Gujarat. In order to analyze the information, primary data was collected with the help of collecting the information from 100 consumers using convenience sampling method. According to the findings of the study conducted, using the chi-square analysis and correlation co-efficient, it was observed that there was significant positive correlation between the income and the consumption, no significant difference between the age group and frequency of consumption and no significant difference between the education and the purchase decision of the selected carbonated drink. The survey also reveals that most of the respondents were satisfied with the taste of the product. About 70 percent of the respondents reported that they would like to shift to the other brand carbonated drinks. Based on the study, awareness among the customers should be created by using suitable marketing and sales promotion strategies^[7-8]. Mass communications and digital communications are to be used, utilized and delivered effectively to build brand preference, attract new consumers and nurture the existing ones^[9-10].

Introduction

Carbonated drinks or fizzy drinks are beverages that contain dissolved carbon dioxide. These are the packaged drinks that are available in bottles, cans, and PET bottles without any alcohol content. The global carbonated beverages market size was valued at USD 440.56 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 5.1 percent from 2020 to 2027^[1]. Asia Pacific market is witnessing the fastest growth whereas North America enjoys the leading position in the carbonated beverage market. Less stringent norms and regulations and rising disposable income among consumers in emerging countries such as China, India, South East Asia, South Korea, and Japan are expected to benefit the market growth.

According to the “India Carbonated Drinks Market Overview”, carbonated or aerated drinks constitute for more than 40 percent of the total non-alcoholic beverages market in India^[2]. In terms of end users, urban segment dominates the Indian carbonated non- alcoholic market with a significant market share. But gradually, rural segment is expected to take back on the market. Region - wise, majority of the consumers hail from the West of India followed by the South

where people experience the maximum heat. The harmful chemicals and the preservatives added have proven harmful to the people which are responsible for the manufacturers in bringing new flavours and low- sugar diet drinks into the market that will help grab the declining growth. However, the carbonated drinks market in India is still expected to showcase a double digit growth in India in the coming five years.

The Indian carbonated soft drinks market had total revenue of \$8,315.7million in 2018, representing a compound annual growth rate (CAGR) of 6.2 percent between 2014 and 2018^[2]. The market consumption volume reached to a total of 6,216.2 million liters in 2018^[2]. Large base of population, rising disposable income and rapid urbanization are majorly driving Indian carbonated soft drinks market. Carbonates market in India registered a positive compound annual growth rate of 7.58 percent during the period 2013 to 2018 with a sales value of INR 568,867.24 Million in 2018, an increase of 9.87 percent over 2017.

Whey protein ingredients are rich in protein and possess high nutritional value, which increase their use in various food and beverage applications. The most consumed whey protein ingredient end-products in India are chocolate protein powder, protein supplements, protein smoothies, gym supplements, protein bars, electrolyte supplements, and fitness supplements. The Indian whey protein market is expected to register a CAGR of 11 percent, during the forecasted period (2019 - 2024) ^[3]. The rise in an active lifestyle and increased health consciousness have increased the consumption of high nutrient food and beverages ^[11-12]. The most consumed whey protein ingredient end-products in India are chocolate protein powder, protein supplements, protein smoothies, gym supplements, protein bars, electrolyte supplements, and fitness supplements.

Materials and Methods

The primary data was collected from the consumers with the help of structured schedule. To satisfy the objective, the data was collected from 100 consumers in Anand city. The secondary data regarding the study was collected from different magazines, literature reviews, govt. and private publications, research papers and books, government websites like Directorate of Animal Husbandry, Govt. of Gujarat, National Dairy Development Board (NDDB), United Nations FAO, Agriculture and Processed Food Products Export Development Authority. The sampling method used was non-probability sampling method under which convenience sampling method was used.

Chi-square test

A chi-square (χ^2) statistic is a measure of the difference between the observed and expected frequencies of the outcomes of a set of events or variables. χ^2 can be used to test whether two

variables are related or independent from one another or to test the goodness-of-fit between an observed distribution and a theoretical distribution of frequencies (Karl Pearson, 1900).

The Formula for Chi-Square Is

$$\chi^2 = \sum ((O-E)^2/E)$$

Karl Pearson Correlation Coefficient

It is used for measuring the degree of linear relationship between two variables x and y. It is usually denoted as r_{xy} or r (Karl Pearson, 1844).

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Result and Discussion

Table 1 Type of consumers Surveyed for the carbonated beverage

| Type of Customers | Number of Respondents | Percentage |
|--------------------------|------------------------------|-------------------|
| Students | 10 | 10 |
| Employees | 42 | 42 |
| Professionals | 16 | 16 |
| Businessmen | 27 | 27 |
| House-wives | 5 | 5 |
| Total | 100 | 100 |

(Source: Primary data)

From the above table, it was found that out of the total respondents surveyed, 10 percent of them are students, 42 percent are the employees, 16 percent are the professionals, 27 percent are the business men and the remaining 5 percent are the house wives.

Table 2 Age of the Respondents

| Age | Number of Respondents | Percentage |
|---------------------|------------------------------|-------------------|
| Below 20 years | 15 | 15 |
| 21 years - 30 years | 45 | 45 |
| 31 years - 40 years | 26 | 26 |
| 41 years - 50 years | 10 | 10 |
| > 50 years | 4 | 4 |
| Total | 100 | 100 |

(Source: Primary data)

From the above table 2, the study unveiled that 45 percent of the respondents are between 21 to 30 years age group and 26 percent of the respondents are between 31 to 40 years age group and it was concluded that the carbonated beverage is mostly consumed by people who are between 21-30 years.

Table 3 Educational Qualification of the Respondents

| Educational Qualification | Number of Respondents | Percentage (%) |
|----------------------------------|------------------------------|-----------------------|
| Illiterate | 8 | 8 |
| School Level | 10 | 10 |
| Graduation | 36 | 36 |
| Post-graduation | 18 | 18 |
| Skilled and Semi-skilled | 28 | 28 |
| Total | 100 | 100 |

(Source: Primary data)

The Educational background of the respondents is varied from illiterate to post graduation and technical level. From the above table it was revealed that out of total 100 respondents surveyed, 8 percent of them are illiterates, 10 percent studied up to school level, 36 percent finished their graduation, 18 percent of them finished their post-graduation and the remaining 28 percent of the respondents are technically skilled and semi-skilled.

Table 4 Income of the Respondents

| Monthly Income | Number Of Respondents | Percentage |
|-----------------------|------------------------------|-------------------|
| <10000 | 10 | 10 |
| 10000 – 25000 | 25 | 25 |
| 25001 – 40000 | 45 | 45 |
| > 40000 | 20 | 20 |
| Total | 100 | 100 |

(Source: Primary data)

Income of the people determine the purchasing power and people purchase the products depending up on their affordability. From the above table 4, monthly income of the respondents is varied between below 10000 INR to above 40000 INR. The results show that 10 percent of the respondents earn less than 10000 INR per month, 25 percent of the respondents earn 10000 and 25000 INR per month, 45 percent of the respondents earn 25001 to 40000 INR per month and the

remaining 20 percent of the respondents earn more than 40000 INR per month.

Table 5 Respondents who bought carbonated beverage

| Respondents who purchased the selected carbonated beverage | | Number of respondents | Percentage (%) |
|--|--------|-----------------------|----------------|
| No | Male | 28 | 28 |
| | Female | 22 | 22 |
| Yes | Male | 34 | 34 |
| | Female | 16 | 16 |
| Total | | 100 | 100 |

(Source: Primary data)

From the data represented above in the table 5, the study was conducted and out of 100 respondents surveyed, 28 percent of the male and 22 percent of the female did not purchase the product and the remaining 34 percent of the male and 16 percent of the female consumed the product.

Table 6 Income and Number of Respondents surveyed for the product

| Income | Number of Respondents surveyed | | |
|---------------|--------------------------------|-----------|------------|
| | Not consumed | Consumed | Total |
| <10000 | 9 | 1 | 10 |
| 10000 – 25000 | 19 | 6 | 25 |
| 25001 – 40000 | 15 | 30 | 45 |
| > 40000 | 7 | 13 | 20 |
| Total | 50 | 50 | 100 |

(Source: Primary data)

6(a) Relation between Income and Number of Respondents who consumed carbonated beverage using Chi-square analysis

Inference:

$$\chi^2 = \sum ((O-E)^2/E) = 19.96$$

At 5% level of significance and 12 degrees of freedom, χ^2 critical = 7.815

χ^2 calculated (19.96) > χ^2 critical (7.815)

Null hypothesis is rejected.

Hence, it is inferred that there is an association between income and consumption of the product.

6(b) Degree of Linear Relation between Income and Number of Respondents who consumed carbonated beverage using Pearson Correlation Co-efficient

Inference:

$$r = 0.9299$$

Hence, it is inferred that there exists a significant positive correlation between income and consumption of the product.

Table 7 Age Group and Frequency of consuming the product

| Age | Frequency of consuming | | | |
|----------------|------------------------|------------|-----------|-------|
| | Regular | Occasional | Irregular | Total |
| Below 20 years | 1 | 1 | 1 | 3 |
| 22-30 years | 5 | 12 | 8 | 25 |
| 31-40 years | 3 | 7 | 5 | 15 |
| 41-50 years | 1 | 2 | 2 | 5 |
| Above 51 years | 0 | 0 | 2 | 2 |
| Total | 10 | 22 | 18 | 50 |

(Source: Primary data)

7 (a) Relation between Age group and Frequency of Consuming the product using Chi-Square analysis

Inference:

$$\chi^2 = \sum ((O-E)^2)/E = 10.423$$

At 5% level of significance and 8 degrees of freedom, χ^2 critical = 15.5

$$\chi^2 \text{ calculated } (10.4229) < \chi^2 \text{ critical } (15.5)$$

Null hypothesis is accepted.

Hence, it is inferred that there is no association between age group and frequency of consuming the product.

Table 8 Education and Purchase Decision about the product

| Education | Purchase Decision | | | | Total |
|-----------|-------------------|---------|--------|------------|-------|
| | Own | Friends | Elders | Collective | |

| | Accord | | | Decision | |
|----------------------------------|---------------|----|---|-----------------|----|
| Illiterate | 1 | 2 | 0 | 0 | 3 |
| Schooling | 1 | 3 | 1 | 1 | 6 |
| Graduation | 5 | 7 | 2 | 1 | 15 |
| Post- graduate | 8 | 2 | 1 | 1 | 12 |
| Skilled and Semi- skilled | 10 | 2 | 1 | 1 | 14 |
| Total | 25 | 16 | 5 | 4 | 50 |

(Source: Primary data)

8 (a) Relation between Education and Purchase Decision about the product using Chi-square analysis

Inference:

$$\chi^2 = \sum ((O-E)^2)/E = 11.922$$

At 5% level of significance and 12 degrees of freedom, χ^2 critical = 21.0

χ^2 calculated (11.92155) < χ^2 critical (21.0)

Null hypothesis is accepted.

Hence, it is inferred that there is no association between education and purchase decision.

Table 9 Shift to other Brand Soft Drinks

| Shift to other brands | Number Of Respondents | Percentage (%) |
|------------------------------|------------------------------|-----------------------|
| Yes | 35 | 70 |
| No | 15 | 30 |
| Total | 50 | 100 |

(Source: Primary data)

From the above table, it was inferred that out of the total 40 respondents who consumed the carbonated beverages, 70 percent of the respondents had the tendency to shift to other brand drinks and the remaining 30 percent respondents did not have the tendency to shift to the another brands.

Conclusion

A significant positive correlation between the income and the consumption, no significant difference between the age group and frequency of consumption and no significant difference between the education and the purchase decision was noticed regarding the buying decision of the selected carbonated drink. The survey also reveals that most of the respondents were satisfied with the taste of the product. About 70 percent of the respondents reported that they would like to shift to the other brand carbonated drinks. Based on the study, awareness among the customers should be created by using suitable marketing and sales promotion strategies. Mass communications and digital communications are to be explored, communicated and delivered effectively to build brand preference, attract new consumers and nurture the existing ones.

Competing Interests

Authors have declared that no competing interests exist.

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