“A Study with a Comparative Analysis on Consumer Consumption Pattern of Carbonated Drinks and Fruit Based Drinks in the North-East Indian Market, 2020.”

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ABSTRACT

In the cold beverage products, carbonated drinks were common preference most among all individuals and still it is, irrespective of their age groups as it has great brand value and promotional activities but in the present scenario, people preferring the fruit based drinks and fruit juices over carbonated drinks is on a rise. The study starts with determining the major factors affecting the consumption pattern of carbonated drinks and fruit juices, and ends up with the conclusion as per the state of mind of the average rational human being.

The main purpose of the research study is to analyze consumer’s preference between carbonated drinks and fruit juices. In order to understand the factors that have played an important role in customer’s preference to choose between carbonated drinks and fruit-based drinks, the study is done on their perceptions and expectations towards both carbonated drinks and fruit based drinks.

The research is mostly based on primary data, collected with the help of a purposefully designed questionnaire, which is then filled by the respondents in the Northeast India, with their responses based upon their consumption behaviours towards carbonated drinks and fruit-based drinks. As per the data and responses collected from the respondents of various age groups and from different professional fields, with further analysis, a comparative study has been done between the consumption of carbonated drinks and fruit based drinks.

Keywords*: Consumer preference, carbonated drinks, fruit-based drinks, Northeast India*

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INTRODUCTION

The era of cold drinks began in 1952; the industrialization in India marked its beginning with launching of Limca and Goldspot by Parley group of companies. As cold drinks are highly profitable and luring, many multinational companies launched their brands in India like Pepsi and Coke. Cold drinks of different brands are composed of alcohol, carbohydrates, carbon dioxide, phosphate ions, etc. These soft drinks give feeling of warmth, lightness and have a tangy taste which is liked by everyone. The carbon dioxide gas is dissolved in water to form carbonic acid which is also responsible for the tangy taste. [1] But with time, changes will come out to take place. According to data compiled by market research agency Euromonitor International, Coca-Cola’s shares in the juice segment rose to 31.1% (retail volume) in 2017 from 28.5% in 2012, while it lost share in its core carbonated beverages from 60.8% in 2012 to 56.3% in 2017. [2]


Within the beverages market, the fruit-based beverages category is one of the fastest growing categories, and has grown at a CAGR of over 30% over the past decade. At present, the Indian packaged juices market is valued at INR 1100 cr (~USD 200 million) and is projected to grow at a CAGR of ~15% over the next three years. [3]

A report in The Economic Times dated Feb 20, 2020 stated that regional drink brands grow at twice the rate of Pepsi, Coca-Cola. Regional ready-to-drink beverages brands, including Bovonto, Jayanti Cola, Sosyo, Runner and Kashmira, put together grew more than twice the rate of national players like Coca-Cola and PepsiCo in calendar 2019, two industry officials said citing data from research firm Nielsen. According to the data, all the hundreds of local brands put together increased their value share in the Rs 20,000-crore-plus non-alcoholic ready-to-drink retail beverages market to 24% last year, which is almost half the size of industry leader Coca-Cola’s 49.9% share and well ahead of PepsiCo's 19.6%.[4]

But why is it happening? Is it because gone are the times when people never cared about the kind of food and beverages they consumed? Today, they are on the way of becoming health conscious. They are more interested in finding out healthy foods and day-by-day the concepts of healthy beverages are changing. They are becoming more aware about health initiatives and they know the exact amount of food and the calories which they should be taking and which would be beneficial for them.

Some studies have shown that consumers are now as concerned for good health as they are about maintaining a high quality of life. The beverage market is worth $55 billion worldwide. Today consumers are concerned with overall health and wellness. As a result, there is significant impact on food and beverage purchases. As consumers are becoming more health savvy they want more options to eat better, no matter where they are.

Most consumers believe that eating healthy and paying attention to nutrition is important. Carbonated drinks are consumed by the people mainly during summers and in parties or celebrations only but on the other hand fruit based juices are consumed during whole year. Most consumers now believe that carbonated drinks are not healthy, contains pesticides and causes health related diseases like diabetes and obesity while few believe that fruit based juices provide more vitality, energy, aids digestion and strengthens our immune system.


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Urban consumers are slowly shifting towards low sugar beverages and forcing companies to launch newer and healthier products and this trend will continue in days to come. The government and agencies are encouraging consumption of healthy drinks and food may work on the policy issues like limiting the sale of carbonated drinks, taxing carbonated sugary drinks and educating people about benefits of healthy substitutes. Consumers have become more health conscious in the last decade and there is a significant difference between the consumption pattern of carbonated drinks and fruit juices in all age groups.

PROBLEM STATEMENT

Market share of carbonated drinks in the cold beverages section were on top for decade, was growing with a rising trend. With big giants like Coca-Cola and PepsiCo, the only imagined curve back some 15-20 years would be an upward rising curve. But in reality at the present, the market share of the carbonated based drink products is observing a downward curve. Why is it changing? The need to understand the problem arises in order to tackle and understand the future trends. What are the factors for the change, the relationships with these factors: is it because of growing health consciousness among consumers and change in perception they have towards these drinks or any other factors? The fruit-based drink industry is also rising. While most trends are studied at a global and national level, what are the trends and customer behaviour in the North-East Indian market regards to the cold beverage industry, what are the competitions and struggles and current consumer mindset in the region? The purpose of the study is to record and mostly analyse primary research data along with secondary research and understand the consumer behaviour, the trends and causing factors, and to gain insights about the same, and come up with its findings that would be helpful to understand the market better.

OBJECTIVES

1. To identify the consumption pattern of carbonated drinks and fruit based drinks in the market of North-East Indian market.

2. To determine whether there are significant differences among gender, age, income, occupation and location in the consumption pattern of carbonated drinks and fruit based drinks.

3. To understand the current scenario of perception towards carbonated based drinks and fruit based drinks, analyse the trend and to check whether carbonated drink consuming mindset in the North East India zone is going down in relation to the global market, and if yes, understand why.

4. To assess the combined effect of factors those are responsible for the consumption pattern of consumers. With that, to determine whether consumers are concerned about their health.

5. To find out consumer preferences of soft drink and fruit based drink with regard to the name of the brand. To identify the perception and impact on consumer based on taste, price, advertisements and related factors and determine their role.

6. To come up with a report and findings, simple but important to the producers, suppliers, retailers and brands to work on their needs and strategies; thus making a contribution via the research, that could also be helpful to some interested researchers and students who may want to study about the area on the theme, in the future.

SCOPE OF THE STUDY

The main purpose of the study is to come up with a comparative analysis on consumer consumption pattern of carbonated drinks and fruit-based drinks in the North-East Indian market, 2020. In this market research study, the main scope of the research contained is consumer research, product research, and advertising research, and briefly on pricing and sales. To achieve it, the path used is to conduct a survey filled with questions and possible responses [Annexure] and is distributed among various consumers who in turn, are the respondents. Preliminary secondary research is done through studying various reports and articles in similar subject matter and industry.

For designing the research survey questionnaire, the prime tool used is Google forms. The distribution channels mostly used are through emails and social media. For primary research data which is to be obtained from survey, the population considered is confined to the North-East Indian region, and to come up with the minimum sample size, quantitative analysis with normal distribution is followed. Conservative figures are followed and filtered accordingly from the raw sample data.

To analyse and find out the results, tools used are MS Excel 2007 and Google Sheet. For the quantitative technique analysis, mathematical figures such as pie chart, bar diagram, etc are used for representation and understanding. Models mostly used are on scale of frequency and percentages. The timeline of the research started from the month of March 2020 and ended in July 2020. The findings are confined to the region of North-East India, with a major portion from the state of Assam with the highest population in the region. The findings highlighted the importance based on consumer behaviour towards factors like health consciousness, brand, taste, price, advertising and other associated factors.

RESEARCH METHODOLOGY

Research design is the blueprint for the fulfilment of objectives and answering questions. It is master plan specifying the method and procedures for collecting and analyzing needed information. This research is designed to identify the factors which influence the consumer and the ways through which to choose or to buy fruit based juice or carbonated drinks.

Descriptive research design is a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way. The importance of descriptive research is:

- To describe characteristic of a population or a phenomenon.
- To determine the answer to who, what, where, how and when questions.
- To analyze the segment and target markets.

Descriptive Research is used in this study as the main aim is to describe characteristics of the phenomenon or a situation.

Convenience sampling technique is used in exploratory research where researcher is interested in getting an inexpensive approximation of the truth. As the name implies, the sample is selected because they are convenient.

This research has used convenience sampling technique.

<u>Sources of Data Collection</u>

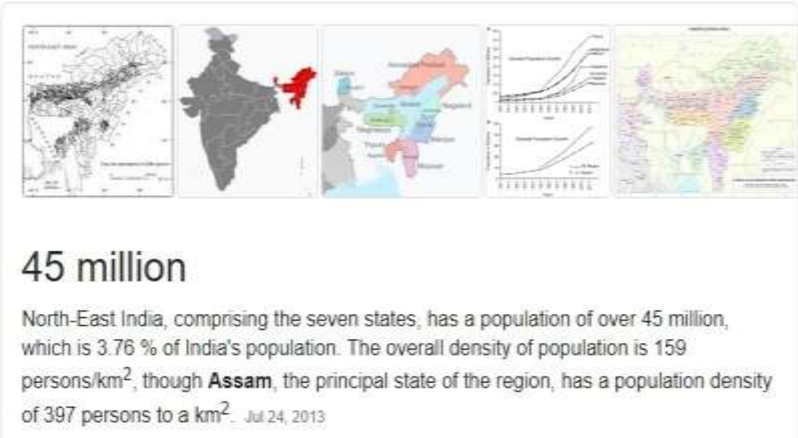
Research will be based on two sources:

1) *Primary Data:* Primary data was collected by preparing questionnaire and the people were randomly being requested to fill them.
2) *Secondary Data:* Secondary data will consist of different literatures like books which are published, articles, internet and websites.

<u>Study Area</u>

Data has been collected from different age group at different areas of North-East India. The responses were recorded and then the data file is prepared. The online tools used for recording the data is Google Forms from Google, which has helped a lot to conduct the research in a smooth manner in the lockdown period of COVID-19. However, the research tried to gain responses from a diverse crowd so as to decrease a certain similar trend, while making the distribution random and free from any biasness, yet a certain might creep in which is tried best to filter out during the filter process of data analytics.

Sample Size



<u>Image Source</u>: *google/springer.com*

The population of the North-East India is about 45 million.[5] Out of that, an estimated population from the state of Assam is around 36 million for the year 2020, while the last recorded in Census 2011 is around 31.2 million.[6]

Thus for our population, which is over 10,000 people, the following formula [7] is considered:

$$n = \frac{(\text{Z value}^{*})^2 \times (\text{p}) \times (1 - \text{p})}{(\text{d})^2}$$

where : n = sample size;
Z value* = value of standard normal distribution (from the table for chosen confidence level);
p = expected or probability of previous similar studies;
d = the maximum allowable deviation or error of the estimate

For our calculation, we have chosen 80% confidence level, which gives us the Z-value* = 1.28. [Appendices] The margin of error is considered at ±5%, that makes d=0.05. For conservative calculation and good accuracy, we have taken expected probability at 50%, i.e. p=0.5, which is the maximum possible or rather say, we are neutral from the starting and not under influence by any previous studies for the probability determination.

This gives us:

$$n = \frac{(1.28)^2 \times (0.5) \times (1 - 0.5)}{(0.05)^2}$$

$$= 163.84$$

$$\approx \mathbf{164}$$

Thus, for the study, a sample size of **166** has been taken into consideration, including both males and females of various age groups. The data is analyzed through tables and charts using percentages and numbers.

LIMITATIONS OF THE STUDY

1. The survey is conducted only among the consumer in North-East India, hence result is not generalised.

2. Sample size is considered to be valid with 166 respondents, which is 80% confidence level with an error of ±5%, with conservative probability at 0.5. For more confidence, the study might not be self-conclusive and more data would be needed with a greater sample size for the population of the market.

3. The tools used for the analysis is MS Excel and Google Sheet. Mathematical models such as pie charts and bars are used, with percentage analysis. Due to lack of certain plug-ins and software like SPSS, a few further analyses that could have been obtained from Likert Scale Data are not included here.

4. The study is mostly conducted during the lockdown period of the COVID-19 Pandemic. Due to restrictions, offline data collection from certain places as planned, mostly rural areas was not possible and thus certain facts have been left unexplored, and few opinion might be found a little skewed. To compensate the same, conservative calculations while taking our sample for study and filtering is done.

5. Some bias and unreal responses may leave an impact on the study and deviate from high accuracy to an approximation or error. Trials are made to make the errors to least, but we are open to accept any mistakes that may have crept in.

LITERATURE REVIEW

1. **Singh (1989)** published a book on "Marketing and Consumer Behaviour" where he mentioned that consumer behaviour has always a scope for research studies, because the consumer's attitudes and perceptions were changing with the passage of time. This type of research study would enable the manufacturers, distributors and dealers to formulate effective sales and advertising strategies by implicating different marketing plans. Marketing plans should be based on the consumer need and their changing desire and aspiration. Consumer must be attracted by the manufactures on the basis of their need and also be satisfied.

2. **Vengugopal Rao (1999)** analysed in his article "Nexus between core value of a Brand and Brand extension" that consumption of carbonated drinks in rural India was changing. Brand identification reveals the difference, functional value, pleasure value and symbolic value as a reflection of buyer's self image.

3. **Johnson et al. (2003)** in his article tried to highlight the strategies used by the coke company to overcome the 1999 Belgium crisis. But the crisis management was a lesson for the Coca-Cola Company to develop organizational strategies which help them to overcome similar situations in future and they established their business globally.

4. **Stecklow (2005)** illustrated a story about the NGO called 'Global Resistance' headed by Mr. Amit Srivastava who formed a website (www.indiaresource.org) where he covered all the controversies of Coca-Cola in India and spread it globally. This has cost the company millions of dollars in lost sales and legal fees in India with damage in their reputation. They continued their anti-campaign until three controversial plants were shut down and paid compensation to local communities for pollution, loss of water and other demands.

5. **Foster 2008** explored globalization in his book through an anthropological and historical study on familiar carbonated drinks like Pepsi, Coke are more valued than other drinks. He also discussed about the transnational operations and marketing of soft drink company in a country newly introduced up to the flow of brand name consumer goods.

6. **Sturm et al. 2010** examined the sugar sweetened beverages and its impact on consumer's consumption. He found that children of low income families are more sensitive to soda than others when soda is available at school.

7. **Prakash et al. 2014** analysed and found that price, brand name, quality, availability, packaging were some of the important factors which influenced the rural consumers.

8. **Kakumanu 2015** explained the relationship between advertising elements of soft drink brands and customer preferences towards the carbonated drinks with respect to brand ambassadors in Telangana state.

DATA ANALYSIS

A survey on Consumption Pattern of Carbonated Drinks and Fruit Based Drinks was conducted. The valid responses finally screened for the study contained the data from 166 people. The respondents belong to different gender, age, location, occupation and income group. In the questionnaire, a question was placed strategically without disclosing the direct intention that otherwise may form a pre-biased outlook to select their five most preferred products out of several products comprising of Carbonated Drinks and Fruit Based Drinks [Annexure, 10]. We have summed up their responses and the objective is to use this data provided by them to determine the consumer's preferences on consumption of Carbonated Drinks and Fruit Based Drinks. For easier interpretation, we have used approximation of the percentages (after decimal) to their nearest whole number through this analysis.

1. **GENDER**

Gender	Frequency	Percentage (%)
Male	91	55%
Female	75	45%
TOTAL	**166**	**100%**

Table 1: *Gender of the respondent*

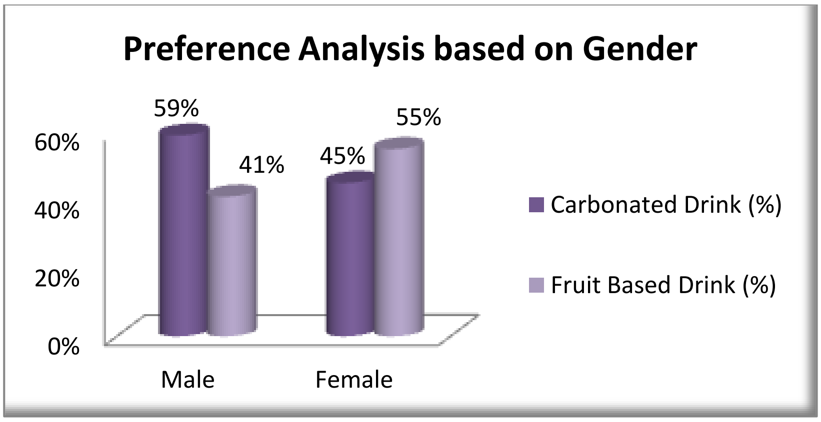


Fig. 1: *Comparative Preference Analysis based on Gender (%)*

Interpretation: Table 1 shows the frequency and percentage distribution based on gender. Amongst 166 respondents, 55% of the respondents are male and 45% of the respondents are female.

Analysis: Fig. 1 illustrates the preference between carbonated drink and fruit-based drink in between the genders. It is seen, male prefer carbonated drink more, while female prefers fruit-based drink more, compared to male consumers.

2. AGE

Age Category	Count (n)	Percentage (%)
Under 18	1	1%
19-23	34	20%
24-31	102	61%
32-43	19	11%
44-55	8	5%
Above 56	2	1%
Total	166	100%

Table 2: *Age of the respondent*

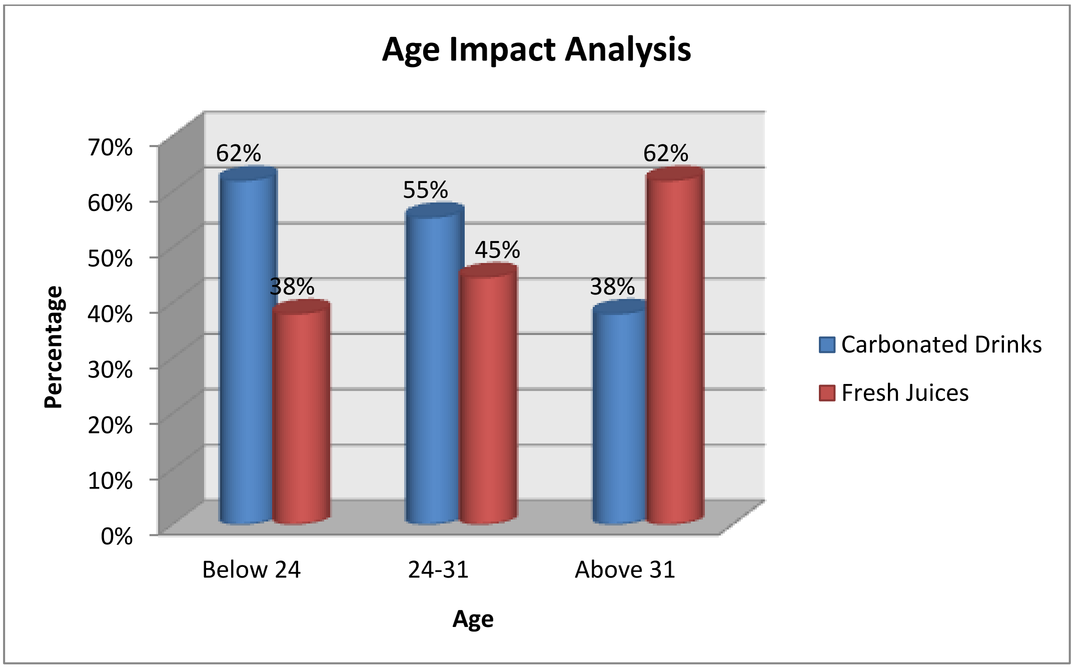


Fig. 2: *Comparative Preference Analysis based on Age Category (%)*

Interpretation: Table 2 shows the frequency of the age of the respondent based on their category.

Analysis: These categories are then clustered together into three categories based on the age. On doing further analysis to study preference in a point-to-point comparison between carbonated drinks and fruit based drinks, it is found that the *preference of carbonated drinks systematically decrease with increase in age and the preference of fruit based drinks increase with increase in age*. Fig. 2 shows the percentage against these three age categories.

3. **LOCATION**

Location	Frequency	Percentage (%)
Urban	110	66%
Rural	15	9%
Semi-Urban	41	25%
Total	**166**	**100%**

Table 3: *Location of the respondent*

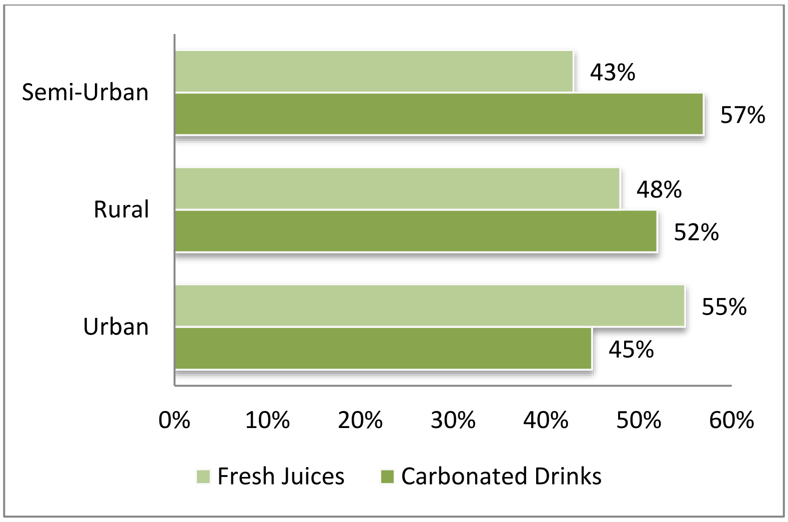


Fig. 3: *Comparative Preference Analysis based on Location (%)*

Interpretation: Table 3 shows the frequency of respondent based on their location of living.

Analysis: Comparing Carbonated Drinks and Fruit Based Drinks, it is found that the preference of carbonated drinks is slightly decreasing, while fruit based drinks are increasing in Urban areas. However, contrary to what is said in terms of health consciousness that will be discussed in one of the following points in this analysis, Semi-Urban area has the greatest demand for carbonated drinks. Rural market is seen in a balanced state, with fruit based drinks standing at 52% while carbonated drink preference at 48%, as depicted in Fig. 3. This is for two reasons viz. having easy accessibility to raw fruits for local drinks as well as a taste for fruit based drinks, as well as having a greater scope for carbonated drink brands to meet the end corners and grounds of the rural market. With greater supply chain expansion and greater accessibility to needs like electricity to use refrigeration; this market has a scope for carbonated drinks.

4. **<u>OCCUPATION</u>**

Occupation	Frequency	Percentage
Government Job	28	17%
Private Job	39	23%
Student	73	44%
Homemaker	9	5%
Business	9	5%
Others	8	5%
Total	**166**	**100%**

Table 4: *Occupation Frequency table*

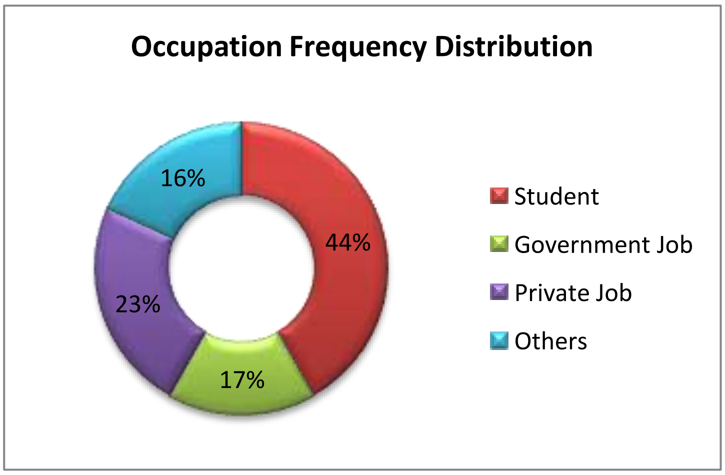


Fig. 4.1: *Occupation Frequency Distribution*

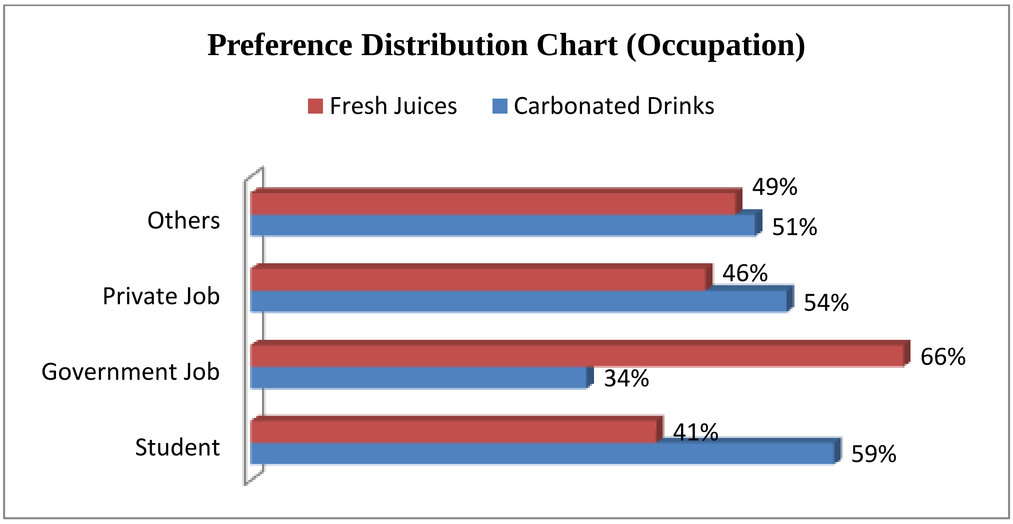


Fig. 4.2: *Preference Distribution based on Occupation*

Interpretation: Table 4 shows the distribution of respondents based on their occupation. Fig. 4.1 shows the percentage distribution when subdivided into the four categories, viz. students, government job, private jobs, and others. Out of 166 respondents, 44% respondents are students, 17% respondents does government jobs, 23% are private job and the rest 16% are classified as others that includes unemployed and home makers.

Analysis: As per data collected and analysed, some interesting but commonly known facts are highlighted. Among the students, 59% preferred carbonated drinks and 41% preferred fruit based drinks. This is reasonable, owing to youth being more energetic, preferening carbonated drinks as they need to be less concious about their health as well as the easily availavle refillable bottles and more volume to the price segment than a comaprative froot based drinks having a slighly greater price segment. Among the people working in a government job, 66% preferred carbonated drinks and 34% preferred fruit based drinks. Thus with more stable position as it is often refered, it can see how a contrast or flip of interest takes place, compared to the former category. For the private job employees, preferrence for carbonated drinks stands at 54% and 46% preferred fruit based drinks. Among 'Others' category, 51% preferred carbonated drinks and 49% preferred fruit based drinks. This reads the lower consumption choices and and easy going with the available product.

Some self-explanatory stastical figures acheived to study preferences based on location zones with gender divisions to understand if their is a relation are as follows:

5. INCOME

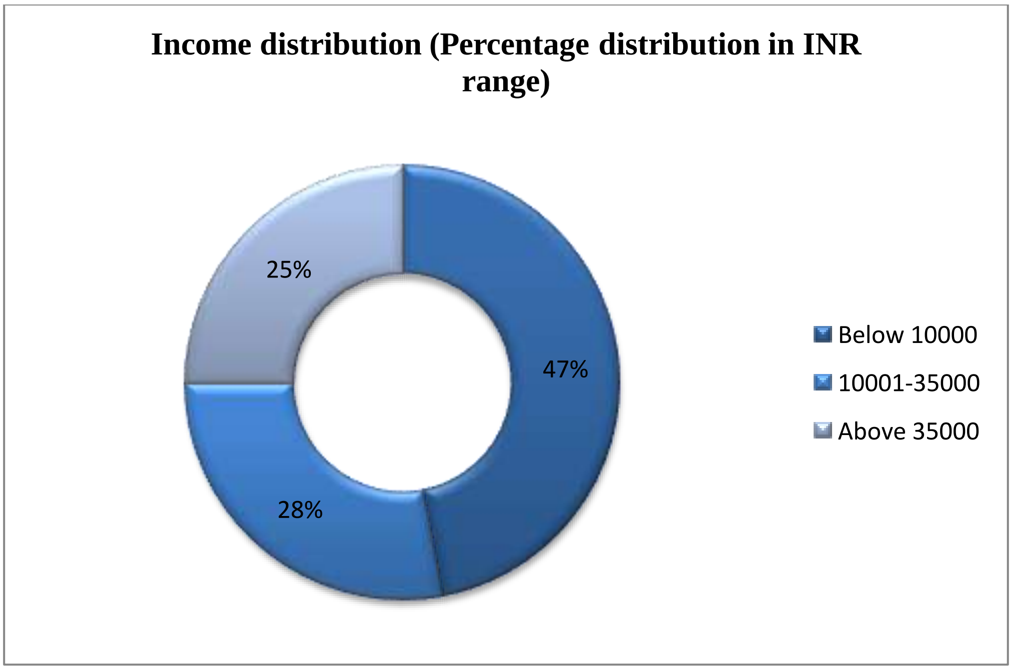


Fig. 5.1: *Income distribution*

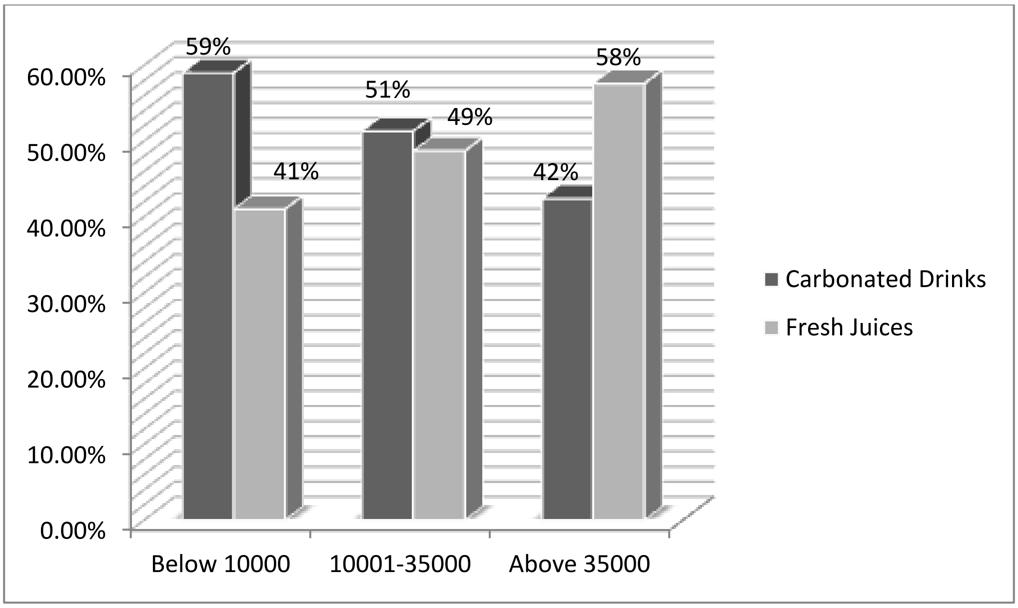


Fig. 5.2: *Preference distribution with Income*

Interpretation: Out of 166 respondents, 78 respondents (47%) have income below Rs 10000, 47 respondents (28%) have income between Rs (10001-35000) and 41 respondents (25%) have income above Rs 35000.

Analysis: In the income below Rs. 10000, 59% preferred carbonated drinks and 41% preferred fruit based drinks. In the income between Rs. (10001-35000), 51.30% preferred carbonated drinks and 48.7% preferred fruit based drinks. In the income above Rs 35000, 42.40% preferred carbonated drinks and 57.60% preferred fruit based drinks.

This demonstrate the *inverse relationship of preference towards carbonated drinks with increase in income*. The fact that price segment play an important role in the perception and acceptance attitude when it comes to the segment of cold refreshments, be it the carbonated drinks or the fruit based drinks is visible. The trend from the above bar shows that with increase in income the preference for carbonated drinks decreases and increse in prefence towards fruit based drinks is seen. On the contrary, it is observed that the health factor, that is seen more consciousness with greater income has a change in mindset that carbonated drink is now seen to be fighting against, thanks to all research reveling the negative components like artificial sweetner in more percent than some fruit based drinks and causes of various issues like obesity and diabetes, making a shift towards more raw fruit frinks or fruit based drinks.

6. **HEALTH CONCIOUS FACTOR**

Health Consciousness Factor (HCF) is a term coined for this analysis. It is found by averaging the various inputs on a 1-10 pointer scale [Annexure, 6] on health consciousness input, filled by the respondent depending on personal perspective (not measured by any medical standards).

Table 5: *Health Consciousness Factor over different parameters*

Based on	Parameter	HCF*	n**
	Overall data	6.84	166
Gender	Male	6.82	91
	Female	6.85	75
Location	Urban	6.84	110
	Rural	5.87	15
	Semi-Urban	7.2	41
	Urban + Semi-Urban	6.93	151
	Rural + Semi-Urban	6.84	56
Income (in Rs.)	Under 10000	6.4	78
	10001-35000	7.28	47
	Above 35000	7.17	41

Note:

*HCF means Health Consciousness Factor (On a scale of 1-10 , where 10 being the highest level of consciousness and 1 being the lowest)
** n= no. of counts or frequency

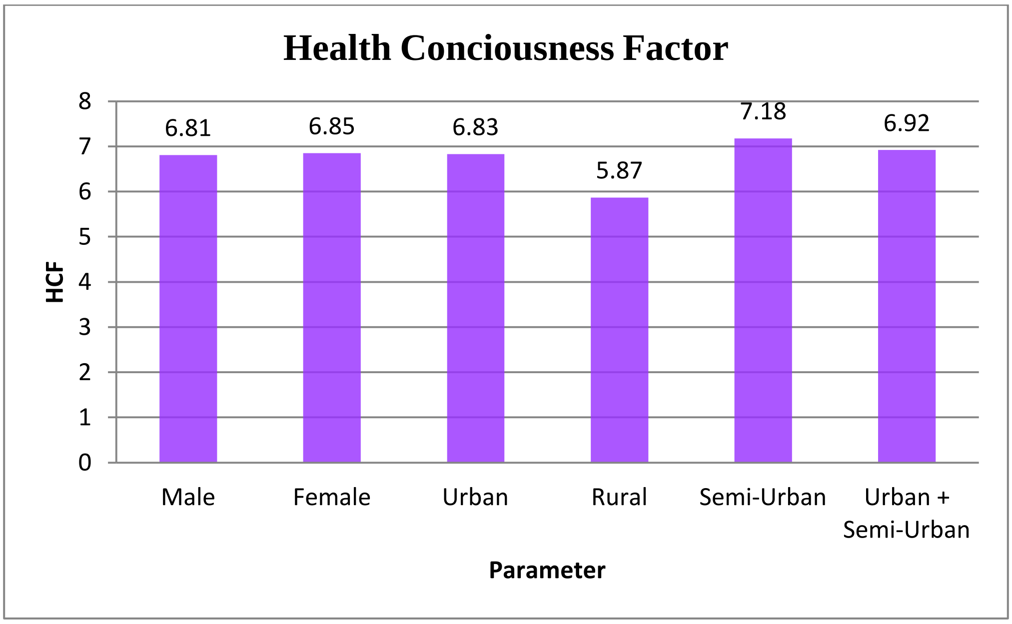


Fig. 6: *Health Consciousness Factor over different parameters*

Interpretation:

Table 5 depicts the various figures of frequency and HCF on the various parameters. Fig. 6 shows the comparsion bar chart based on HCF.

Analysis: Fig.6 highlights that female consumers are slightly more concious and caring about the health factor than their male counterpart. While the average that brings the HCF for Urban at 6.83, it is interesting to note that the Semi-Urban consumers reflects more health consciousness than that of Urban at 7.12. This is a matter of note to be reflected because a huge population difference of mix status and mindset difference in Urban cities, while in smaller towns, a similar perspective might be seen. The change in perspective and preferences can be utilized by the fruit based drink/ fruit drink market to gain a jump on it.

The minimum consciousness, a 5.87 HCF is recorded at the rural zones that is yet to get highly impacted with the modern "gym fitness" culture even though fitness is achieved through various other techniques like farming, which remains the chief work. The frive for carbonated drinks are more here, thus a better market space can be connected and build upon for the products. Fruit drinks remain a neutral choice, as the abundence of raw fruits is seen that can generate locally prepared fruit drinks.

7. CONSUMPTION PATTERN ANALYSIS

Preference	Frequency	Percentage
Only in Summer	51	31%
Only on special occasions or as complementary food	59	36%
Daily	2	1%
Weekly	21	13%
Monthly	9	5%
Season or heat does not matter. I love cold drinks!	14	8%
Never	10	6%
Total	166	100%

Table 6: *Consumption pattern analysis*

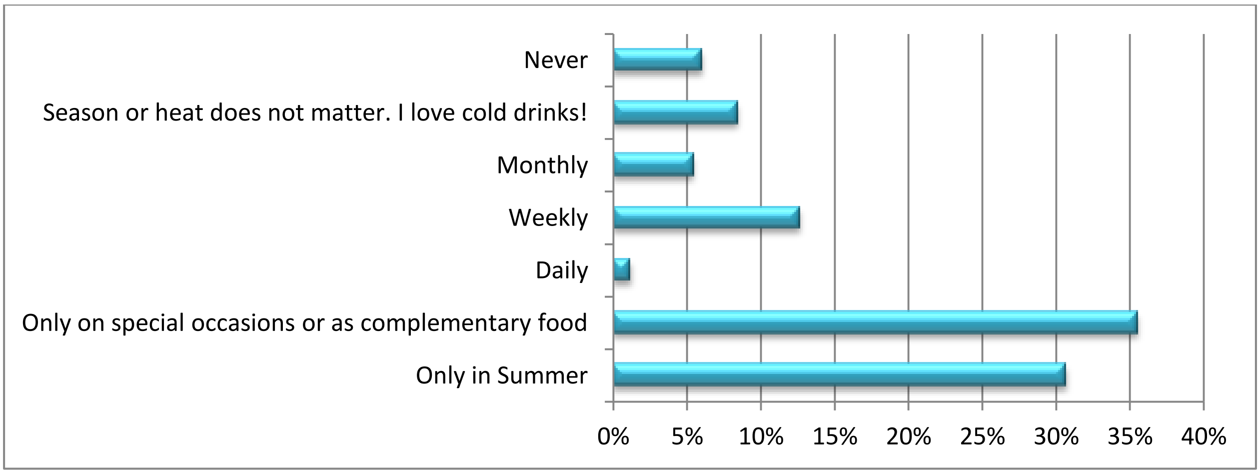


Fig.7: *Consumption pattern analysis comparsion chart*

Interpretation:

Table 6 depicts the various figures of the consumption frequency.

Analysis: Fig.7 highlights the consumption of cold drink, observed highest as a complimentary food or on special occasions like parties. This is a good area to invest and explore more options for companies to make the cold breverages more suitable bringing to the add-on value like it goes with the western food, say with a pizza or a burger. It had a tough fight with Indian meals of rice and pulses, but it is slowly getting accepted with items like a biryani. Possibilities are endless. The followed section preferes to buy only in summer, thus the consumption is attributed to the seasonal factors like heat and temperature. This is the driving forece to make them buy and consume the cold beverages. And interesting trend is observed that speaks how cold drinks are making into the preference system as lovers of cold drinks and fruit based drinks are selecting that they love to drink weekly or they just love it. We have seen a 'never' section too, that reflects to a little section that may be the buyer but not the end consumer, say the father never drinks but buys for his children.

8. IMPACT ON BUYING

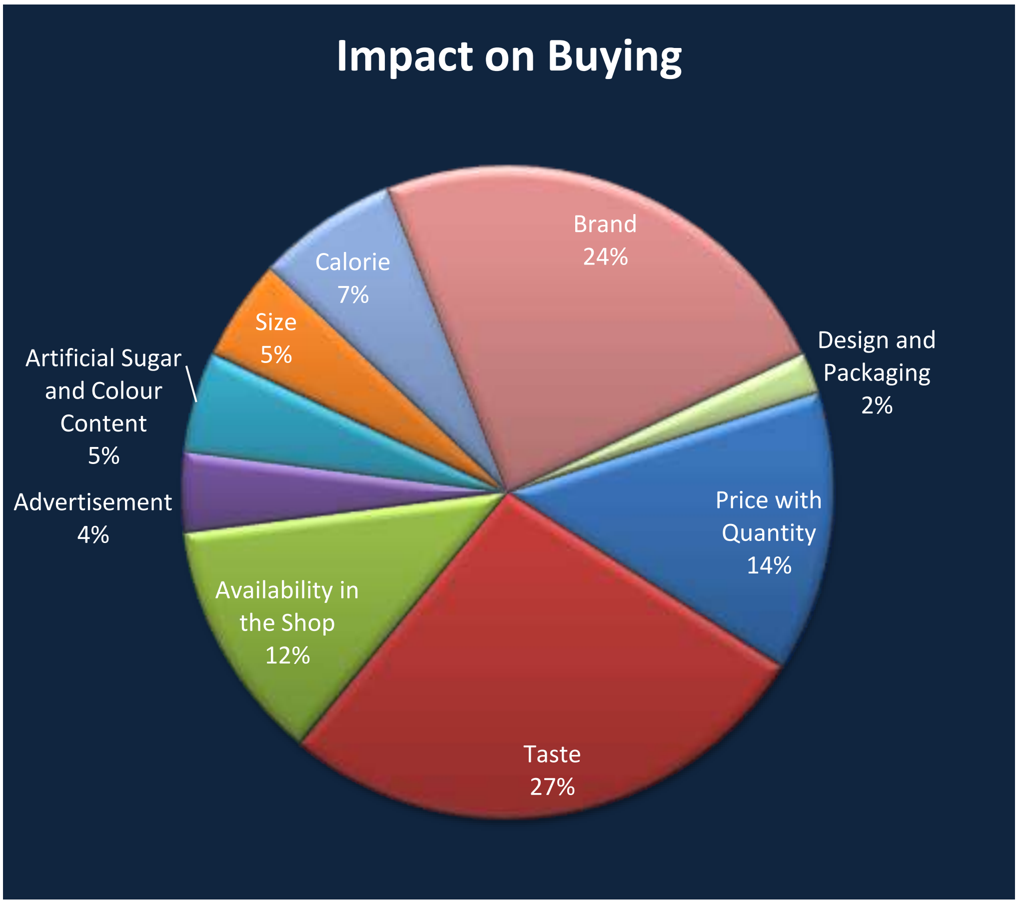


Fig. 8: *Impact on Buying Decision*

Interpretation:

Fig. 8 depicts the distribution pattern due to various factors when it comes to the result of buying the product. Different factors that affect a consumer's buying pattern are studied and recorded for the analysis. [Annexure, 8] The fig. depicts the percentage impact, if fought against one to one with the factors on a scale of 100%.

Analysis:

The data suggested that among these factors, Taste (27%) is the most important parameter for selection and buying and the least important factor being Design and Packaging (2%). The other factors in decreasing order of impact recorded in the survey: Brand (24%), Price with Quantity (14%), Availability in the Shop (12%), Calorie (7%), Size (5%), and Artificial Sugar and Colour Content (5%) and Advertisement (4%).

To understand it better, we must try to fit in shoes of both as a consumer and as marketer, one at a time. As a consumer, it may seem like Advertising plays a very little role on the sales. While as a marketer, we know that the contribution of these advertisements might play a small role on immediate sales but in the long run builds the brand name, the one which came at a huge slice of the pie at a 24%. Thus, if we analyse the worth, that sums up at 24+4=28%, a percent greater than the core product factor, i.e. Taste. The takeaway would be to *invest in impactful and sustainable long term campaign that builds the brand value and maintains it with the changing times*.

The taste component speaks the core product value, the authenticity and the production viewpoint based on standards and quality. The product is at the end judged by the mouth and stomach. The health factor, with 47% of Indian chief earning population comes from the millennials or the Gen Y [8], the group of every brand and marketers' dream to capture, emphasis on the sugar and calorie values and these figures will increase with time. Also, the price sensitive market of India is a known fact and North-Eastern region maintains the same. Price with quantity is remains the significant factor along with the availability factor that depends on works of the channels and logistics, and these factors are basically nothing but the marketing basic of 4Ps. Each emphasis may be varied as per the percentage ratios.

9. **BUYING REASON SPECIFICS**

Interpretation:

Fig.9 represents the percentage distribution of the data analysis when compared to reason specifics of buying carbonated and fruit based drinks.

Analysis:

Thirst is one of the topmost received options with 40% of votes, followed by parties and celebration (27%) at the second, 18% as complimentary food and rest 15% can't specify the reason, reflecting to positive stock holders and utilising for any of the above reason. For any brand, as buying for thirst is the fastest decision making response, focus could be segmented into specific sizes fulfilling the quench at reasonable prices, accordingly. New product can first focus into smaller packs as market entry and then move towards larger mass by introducing family or party packs to capture the party utilization and try to fit into complimentary food section later on, through well research and development and great ties with food brands and crafting a niche combination.

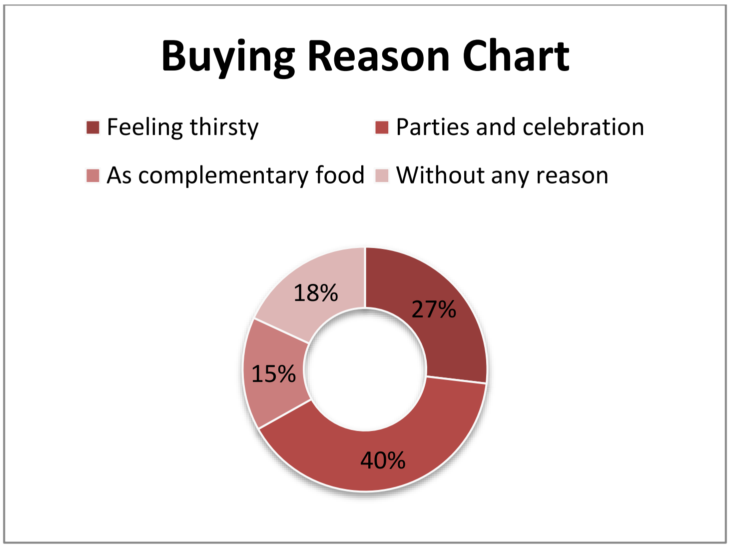


Fig. 9: *Buying Reason Chart*

10. PRODUCT PREFERENCE ANALYSIS

Product	Votes	Remark
Coca Cola	77	market leader per table, core competition: pepsi
Sprite	75	second market leader as per analysis
Mountain Dew	58	taste strong compared to sprite, an ongoing competition, green coloured drink
Pepsi	53	known carbonated drink, stands at 4th as per the survey
Mazza	48	highest fruit based demand
Real	46	second highest fruit based demand, tetra packet
Local Sugarcane Juice	45	open source product, locally available

Frooti	42	massive sale on tetra pack
Local Coconut Drink	41	local product, rising demand, considered healthy
Tropicana	37	popular juice brand, targets mid range-high customers, pricing around Rs.100
Thums Up	37	coca-cola's once competitor, than favourite aquitisation
Fanta	34	orange favoured carbonated drink leader in the table
Limca	34	lemon based drink
Mirinda	31	fanta's brother
Appy	30	marked its space when comes to apple based drink
7 UP	30	sprite's friend
Slice	28	mazza's neighbour
Local Lemonade	27	easy-to-made local business due to good supply in the Northeast Indian market
Paperboat	25	impactful advertising, flight demands
Pran Litchi	18	from one of Bangladesh's largest conglomerate, capturing market, lower price segments
Minute Maid	17	niche capture
Any other local fruit juice	16	Unorganised
Patanjali	9	new entry

Note:

Colour Code:
Carbonated Drink
Non-Carbonated Drink

Table 7: *Product Preference Analysis in descending order of voted response*

Interpretation:

Table 7 shows the no. of votes received by each product out of a maximum total of 166. The question asked was to choose 5 of their favourites, from the given list. [Annexure, 10] While the response received is not completely error free as a few respondents skipped a few choices, the compiled and filtered list shows the approximation of filtered data, where Coca-Cola stands at the top with 77 votes out of possible 166 votes. The colour code denotes the product category from carbonated vs. non-carbonated drink. Certain remarks based on the analysis or market insights are added for better knowledge.

Analysis:

It is interesting to see that even though it is seen that the HCF is showing an upward trend, the top 4 standing product comes from the carbonated drink section. This is mainly because of the huge market share these dominating labels hold and the strong presence in a buyer's mind that can be seen in the purchase and preference rates. Other than that, taste and price plays a role too, to maintain the position.

However, when it comes to top 10, we see that all the next six places are held by non-carbonated or the fruit based drinks. Thus clearly depicts the change that is taking place and shifting in the soft-drink industry space. Even though in the head on fight between the carbonated vs fruit based drinks, the greater share is currently on the carbonated side, the *growing trend of non-carbonated based drinks* is seen.

11. **<u>PREFERENCE IN JUICE BASED DRINKS</u>**

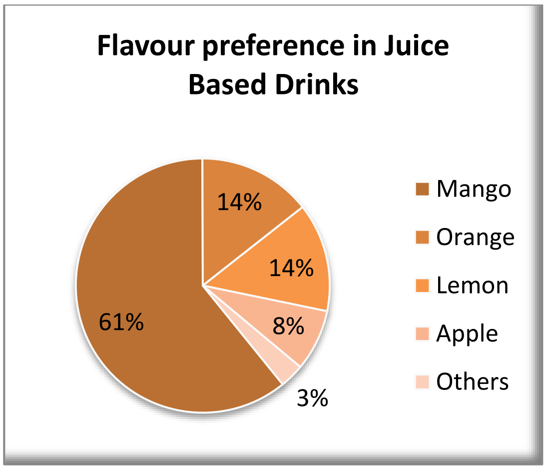


Fig. 10: *Preference chart of flavour in juice-based drinks*

<u>Interpretation</u>:

Fig.10 shows the various preferences of flavour when it comes to juice based drinks based on favourites represented in a percentage pie.

<u>Analysis</u>:

The fruit-based drinks are dominated by Mango by a whopping 61%. This will definitely fluctuate and come at a lesser percentage when recorded all over India, but it can draw the attention that the North Eastern market of India is a fan of Mango flavoured Fruit Based drinks. The availability and supply role for the wide available ranges from brands like Frooti, Mazza or Slice can't be missed for choices. Next is Orange, thanks to its wide range across different brands. Almost equally shared by Lemon in the market space but we can't deny that a huge share of fight comes from the local vendor space with the lemonade space. Apple finds its space in the NE India consumers, notable names comes from Appy, Real, Tropicana, Paperboat, etc. An interesting note is that some consumes the tetra pack of ORS as a juice too, though this is not a fight within industry, but it is eating some consumer money in the space.

In the 'others' section, a fight is in between Mixed Fruit, Guava, Banana, Pomegranate, and others but the huge competition comes from the local vendor selling market space of Coconut drink. Untapped and unorganised, it lacks requisite data from the survey but this space is a cash eater, like the lemonade.

12. **<u>DEMAND BUYING PREFERENCES</u>**

Choice	Count (n)	Percentage	Combined Percentage
Small tetra pack	22	13%	33%
Refillable bottle	9	5%	
PET bottle	20	12%	
Can	3	2%	
Refrigerated Packaged Drinking Water Bottle	70	42%	67%
Will look for local drink seller	42	25%	
Total	**166**	**100%**	**100%**

Table 8: *Demand Buy Choice Specific*

<u>Interpretation</u>:

Table 8 shows the buy choices made by consumers on demand. [Annexure, 12]

<u>Analysis</u>:

This is significant and valuable information that can be processed from data that helps a marketer to understand how a consumer would act on their buying decision. Table 8 highlights the fact that the immediate response to feeling thirsty is often quenched by a bottle of packet drinking water or a juice from local vendor, which when combined comes to a total of 67%. This comes with certain health consciousness factor like the drive away from sweetness by, say, a diabetic person, but mostly drive by the price per volume factor that have shaped the interest.

While converting this whole percent is not possible and also unnecessary, but this adds to a huge probable space of earning money by being able to change that bottle of water with a bottle of drink in the consumer's hand.

The price component on the decision making can be easily reflected, as it seen that in the cold drink and juice space of 33%, the largest share comes from small tetra pack, that have less volume but are comparatively in similar available prices (Rs.10-30) as that of a bottled drinking water (Rs.10-25/30) in an average scale on the current market times. For greater volumes, consumption is from PET Bottles (12%). Significant change from the past is seen in the changing habits of consumption of refillable bottles (5%) that were once more demanded, Now the sharing mindset of the earning lot (mostly led by the Gen Y or Millennial who believe in spending, instead of saving like Gen X) has changed to individualist attitude for smaller things (like mobiles, food, etc) and sharing attitude for larger things (like flats, rent houses, etc). However, consumption for the costliest, i.e. the Can is still less observed from the analysis in the North East Indian market.

13. <u>AGREEMENT ANALYSIS (LIKERT CHART)</u>

Questions	Total	Highly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Highly agree (%)	Total (%)
Carbonated soft drinks are tastier than non carbonated ones.	166	10%	20%	42%	23%	5%	100%
Advertising play a deep role in me to buy the product.	166	12%	18%	29%	34%	7%	100%
I easily switch brands based on advertisements.	166	23%	37%	26%	13%	1%	100%
Physical visibility of the product and brand is important for attracting consumers.	166	5%	7%	20%	48%	20%	100%
I believe carbonated drinks are harmful to my health.	166	3%	8%	19%	46%	23%	100%
I believe juice based products are not harmful to my health.	166	7%	16%	27%	36%	15%	100%
I check the ingredients and nutritional information before buying cold drinks.	166	13%	23%	25%	24%	15%	100%

Table 9: *Agreement Analysis Table*

<u>Interpretation</u>:

Table 9 describes the various agreement received on the various questions. For getting the data, a Likert Scale was prepared from the set of responses and these are approximated in the table above. For better understanding, each question is analysed separately along with their respective figures on bar chart. Overall mean analysis table is added in the appendices. Every single analysis based on percentage can be verified from the table added towards the last of this report under the appendices.

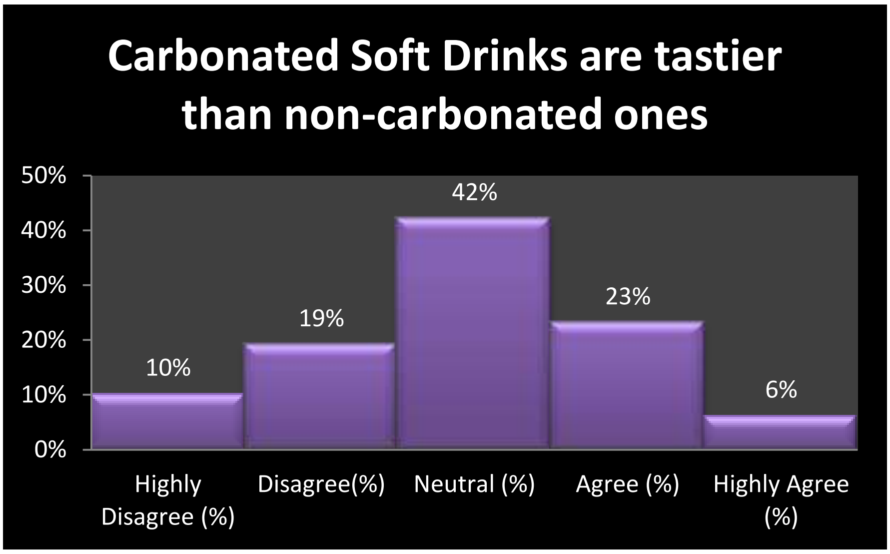


Fig. 11: *Likert Scale Analysis on Taste Factor*

<u>Analysis</u>*:* The above fig.11 demonstrates the responses to the question if they find carbonated drinks tastier than the non-carbonated drinks. We see a 10+19=29% shift towards the disagreement while a 23+6=29% agreement. While a whopping 42% response is seen to be neutral. This turns out to be inconclusive, as both the results turns out to be the same on the approximation, with both the sides on a 29%. If we go back to the raw analysis without approximation at least to the third decimal, the disagreement comes to 29.518% while the agreement turns out to be at 28.916%; the difference is 0.602%. Thus, in that matter of fact, it is difficult to comment on the same as on the taste aspect, we see strong sides on both, but if we are to take a side, there is a slight chance that our sample considers fruit-based drinks a little tastier than the carbonated drinks. But in general, this is not strong enough evidence to conclude.

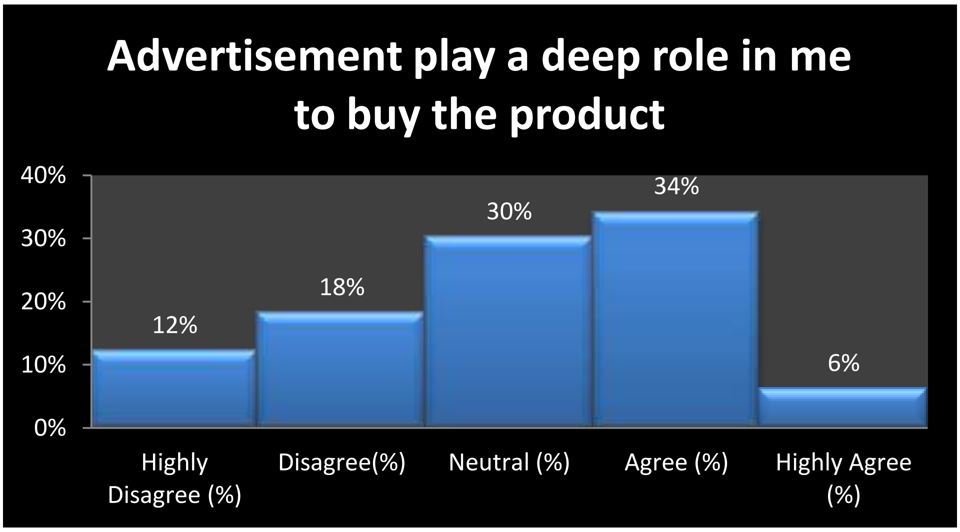


Fig. 12: *Likert Scale Analysis on Advertising Role Factor*

Analysis: Fig.12 illustrates the responses to the question of advertising playing a deep role in buying the product. While a 12+18=30% believes that advertising doesn't impact in their buying decisions, on the other side it is seen that 34+6%=40% believes that it does play a deep role in their buying decisions. The 10% margin comes to the agreement side. Rest, 30% could neither fully agree nor disagree. But this gives conclusive evidence that it might not be directly and immediately persuasive enough to make one buy, but in the long run advertising plays a deep impact on the buying decisions. It builds the brand, and a customer takes the decision to buy the product because the customer is aware of the product and the name has slipped in the mind after impactful advertisements and later on remains after using the product.

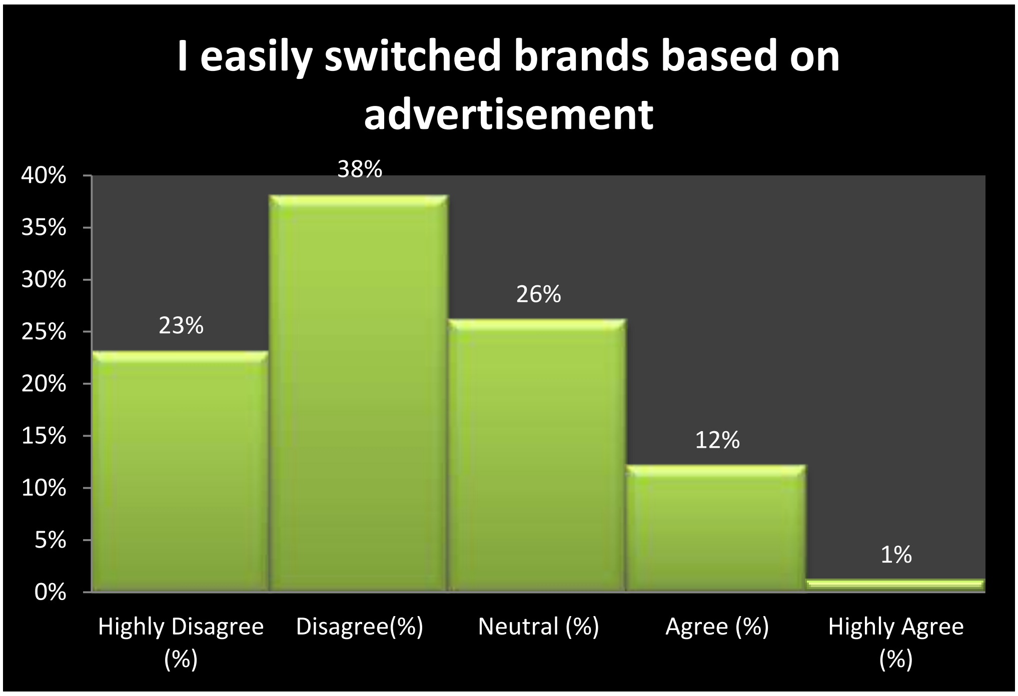


Fig. 13: *Likert Scale Analysis on Brand Switch Capability*

Analysis: Fig.13 reproduces the responses to the question of switching brands under the influence of advertising and how easily takes place. From the chart, it can be seen that a negative response is more inclined by a huge margin, with 23+38=61% disagreeing to the statement while only 12+1=13% agreeing to it while 26% remains neutral. Thus with a margin of 48%, it is seen that advertising plays a role but does not produce an effect in brand switching of a customer so easily and instantly. This verifies our previous analysis too.

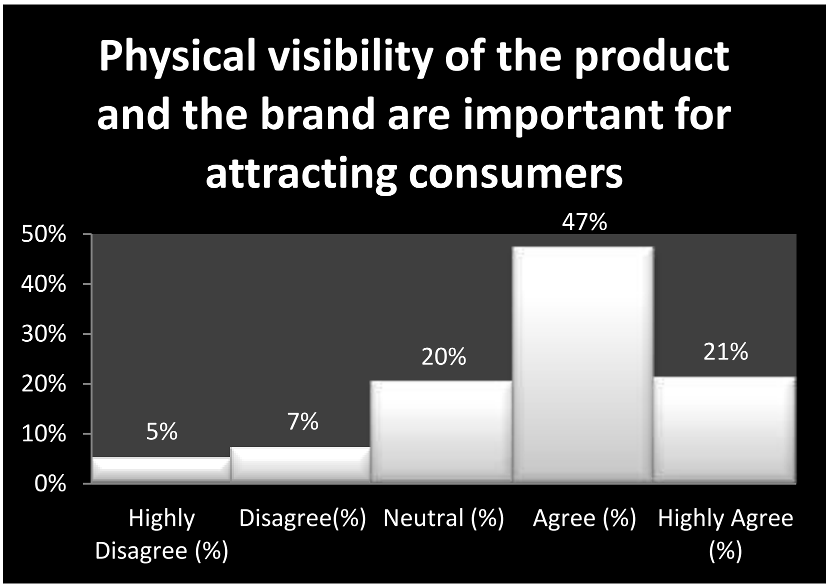


Fig. 14: *Likert Scale Analysis on Visibility and Brand Name*

<u>Analysis</u>: Fig.14 depicts the agreement analysis of attraction towards a product based on the brand name and the product visibility. From the chart, it can be seen that agreement comes to with 47+21=68% while only 5+7=12% disagreeing to it while 20% remains neutral. Thus with a margin of 56%, it is clear that an effect of the brand name and visibility is very much powerful when it comes to the ultimate sales of the product or a consumer buying the product. No wonder, why our top names in our analysis has all the top brand labels when it comes to soft drink.

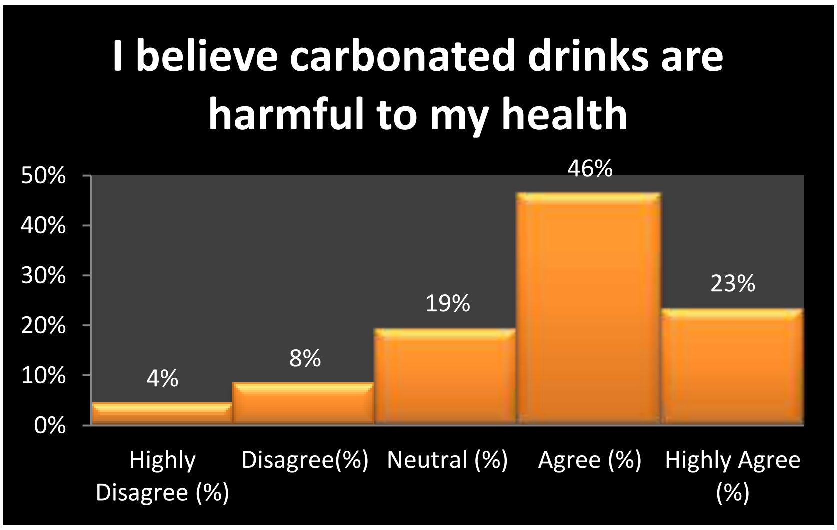


Fig. 15: *Likert Scale Analysis on HCF (Carbonated Drinks)*

Analysis: Fig.15 highlights the agreement analysis on the changing attitude towards the perception of carbonated drinks as not healthy. From the chart, it can be seen that agreement comes to with 46+23=69% while only 4+8=12% disagreeing to it while 19% remains neutral. Thus with a margin of 57%, it is clear that there is a huge change in perception towards the carbonated drinks from the past. This must tackled by both innovation of the carbonated drink industry as well as developing better products, healthier products in the segment so as to maintain its share in the market. However, an interesting trend which was noted earlier is that even though the consciousness is on a rise, the effect in the buying is still not drastic as the leaders from our study still holds the big names from the carbonated products. [10: Product Preference Analysis] But this is the beginning of the rising consciousness, and this will grow on, and if not acted, will change the pie and shift the coin by tossing it to the opposite side.

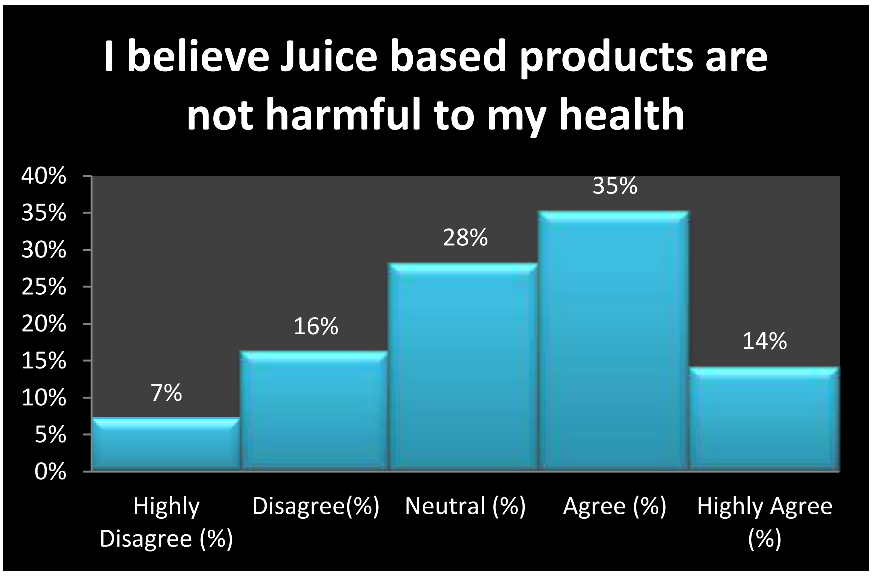


Fig. 16: *Likert Scale Analysis on HCF (Juice-Based Drinks)*

Analysis: Fig.16 shows the responses to the question of if the respondents think that juice based products are not harmful to their health. This question was placed right below the previous and this saw the exact response as it was expected. From the chart, it can be seen that a negative response is 7+16=23%, disagreeing to the statement while 35+14=49% agreeing to it while 28% remained neutral. Thus with a difference of 26%, it concludes the positive perception that the juice based drink products have on the mindset of the consumers. This in turn is making the healthy seen growth in preference of fruit based drinks than the carbonated drinks in the recent times.

Fig. 17: *Likert Scale Analysis on Ingredient Consciousness*

<u>Analysis</u>: Fig.17 depicts the agreement analysis of the consciousness of the ingredients and the changing behaviour of curiosity and knowledge hunger. From the chart, it can be seen that agreement comes to 24+15=39% while 13+22=35% disagreeing to it and 26% remaining neutral. The difference is 4%. While strong comments can't be made, this do show a growing level of consciousness that has come with the fit mindset and this will play an important role in the buying habits of customers and consumers who will read the nutritional value and ingredients before buying.

14. **<u>OPEN SUGGESTIONS</u>**

A non-mandatory option to give suggestions for change they wish from the cold drinks that would make them to buy more was included in the questionnaire. [Annexure, 14]

While some good numbers of suggestions are received, with some filtering, what was seen that the most common suggestions were to bring down the *sugar content* to make it healthier, less use *artificial sweeteners and colours*, and on areas of *preservatives*. Few niche suggestions were to work on making refillable bottle more *hygienic* and to make *premium brands available* in semi-urban and rural areas. In the end, feedback and suggestion are a consumer's gateway to convey their demand and what is seen that the heath conscious consumers are on rise, with a change in attitude and thus, improvements on these changes would reflect in the sales as well as acting and finding a way to leverage it will give an edge.

FINDINGS

1. Male and female, irrespective of their location where they reside in have more affinity towards carbonated drinks and fruit based drinks respectively.

2. Preference of carbonated drinks varies inversely with increase in age while preference for fruit based or say juice based drinks varies directly with increase in age.

3. People living in urban areas have higher fruit based drink consumption while for Semi-Urban and rural, higher carbonated drinks consumption. One of the reasons for it is that Urban India is witnessing a push towards healthier options. With this phenomenon trickling down to smaller towns and villages, we might see a surge in fresh juice consumption in semi-urban and rural areas.

4. Students are found to be more inclined towards carbonated drinks. Working people tend to be more inclined towards fruit based drink. Similar to age, with increase in income, inclination and shift from carbonated drinks towards fruit based drinks is observed. One reason for it is with higher purchasing power, shift towards healthier options is made.

6. Taste, Brand and Price with Quantity are the most important attributes. Advertisements do not improve in immediate sales of soft drinks but help to build the brand in the long run.

7. In ‘Top 10 list’, the top four earned were by carbonated drinks while the next six were non-carbonated ones. It is found that Coca Cola, Sprite, Mountain Dew, Pepsi, Mazza, Real and Local Sugarcane Juice are the most preferred products among the public here. They are the prime market players.

SUGGESTIONS

1. It is found that fruit based drinks are slowly and gradually climbing up the market share of carbonated ones. With the consumer section becoming more aware and educated, there lies testing times ahead for carbonated drinks companies. The producers thus need to and redesign the products in a way that they are healthy, low calorie content and also making sure that the taste factor is not affected as we have seen taste is one of the primary elements for selection of any kind of carbonated or non carbonated drinks.

2. We live in a rapidly changing environment. This is why there is a need for marketing manager of the companies, be it for carbonated ones or non-carbonated ones to constantly study the marketing environment and find new opportunities to increase the market share.

3. It is found that lower income section of society is consuming carbonated drinks more as compared to fruit based drinks. The Fresh Juice brands need to tap to the demand of this section of society. They can do so by fixing affordable prices as such they are in the reach of lower and middle income groups.

4. There is stiff competition in the carbonated groups itself as more and so the products are having similar taste. They need to launch new flavours which would make them unique and eventually with subject to consumers liking, they will gain a good market share.

5. Fresh Juice Companies need to offer wide varieties and options for the consumer to choose from, ranging from “mixed” fruit juices to pure, single fruit juices to dry fruit juices. Thanks to higher incomes, the consumers are willing to experiment with variety and pay a premium for such value-added products.

6. Building the brand and maintaining the brand good name is tough, but very much needed in this highly competitive market. With times of interaction with consumer changing from print to radio to TV to social media, and with highly interactive campaigns, times are constantly changing. Presence must be focused in building a valuable relationship and trying to maintain it.

CONCLUSION

In today's scenario, customer is the king because they have various choices around them. Understanding customer is the bread and butter bottom line and key to business success. Anyone in business knows that the customer is always right and we have to ensure that they stay happy and satisfied. Given the options the customers have now they will easily switch to other products if their desires and needs are not fulfilled. Therefore, it has become necessary to continuously uplift their products in this rapidly changing marketing environment.

Based on our overall findings of the study, we can conclude that there are significant differences between gender, age, income, occupation and location in their consumption pattern of carbonated drinks and fruit based drinks. One significant thing to note through this survey is that people are now getting more and more health conscious. They are getting more educated and are more self aware regarding their intake of drinks. This has resulted in the rise for fruit based drink. This trend is already prevailing in urban areas and slowly and gradually impacting the semi-urban and rural areas. Thus it has become highly necessary for the carbonated companies to come up with products that are better in taste and healthier.

At the same time, our study has also shown that people do get attracted to a product based on Brand value. It all boils down to the perception of quality that is being demonstrated by the companies. So a mix bag of factors such as Brand, Taste and Price with Quantity play an important role in people's buying pattern. Some of the most preferred drinks still come from the big names of carbonated drink sector, like Coca Cola, Sprite, Mountain Dew, Pepsi, while the fruit based drinks were likes of Mazza, Real,. And trend towards local vendors like that of sugarcane juice, lemonade, etc. may see demand with the vocal for local mindset, if maintained with proper hygiene care. Juice chains like Drunken Monkey, Smoothie Factory, Juice Lounge, Lassi Corner, Oos Ka Joos, Pure Nectar etc.[9] are too catching up the space and are expanding over India, though not dominating yet or seen in the North East Indian market space. So at the end, it can be said that the cold beverage space is up for some good competition and testing time lies ahead for everyone, both Carbonated Drinks and Fruit-based Drinks. It will be interesting to see the new changes and opportunities and challenges are faced by everyone in the space.

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ANNEXURE

QUESTIONNAIRE:

A Survey on Consumption Pattern of Soft drinks and Fruit-based drinks with a comparative study in the North-East Indian Market

Dear Respondent,

Thank you for sharing us a couple of minutes. This is a survey, solely for research purpose. We are a group of management students and we're thankful for your responses that will help us for our project.

* Required

1. What is your age? *

   Mark only one oval.

   - Under 18
   - 19-23
   - 24-31
   - 32-43
   - 44-55
   - Above 56

2. Gender *

   Mark only one oval.

   - Female
   - Male
   - Transgender
   - Other: ______________________

3. Where do you stay? *

   Mark only one oval.

   - Urban
   - Rural
   - Semi-Urban

4. Occupation *

Check all that apply.

- [ ] Business
- [ ] Private Job
- [ ] Government Job
- [ ] Self-employed / Part-time
- [ ] Student
- [ ] Homemaker

Other: [ ] ______________________

5. Monthly income (In Rupees) *

Mark only one oval.

- ( ) Below 10,000
- ( ) 10001-15000
- ( ) 15001-25000
- ( ) 25001-35000
- ( ) 35001-55000
- ( ) 55001-80000
- ( ) Above 80000

6. How health conscious do you consider yourself? *

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Least health concious	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	Highly health c

Customer preferences towards cold drinks

Please select your responses and hit "submit" once you complete the survey.
And once again, we thank you for providing us your opinion through this survey.

7. How often do you prefer cold drink? *

Mark only one oval.

- Daily
- Weekly
- Monthly
- Only in Summer
- Only on special occasions or as complementary food
- Season or heat does not matter. I love cold drinks!
- Never

8. When choosing a cold drink what influences your decision? (click top 4 factors) *

Check all that apply.

- Price with quantity
- Availability in the shop
- Taste
- Brand
- Calorie content
- Size
- Artificial sugar and color content
- Design & packaging
- Advertisement

Other: ______________________

9. On what occasions do you buy cold drinks the most? *

Mark only one oval.

- Feeling thirsty
- Parties and celebration
- As complementary food
- Without any reason
- As health drink
- Other: ______________________

10. Choose your top 5 favorites. *

Check all that apply.

- [ ] Coca Cola
- [ ] Pepsi
- [ ] Thums Up
- [ ] Mirinda
- [ ] Fanta
- [ ] Sprite
- [ ] Mountain Dew
- [ ] Limca
- [ ] 7 UP
- [ ] Mazza
- [ ] Slice
- [ ] Tropicana
- [ ] Real
- [ ] Frooti
- [ ] Paperboat
- [ ] Minute Maid
- [ ] Patanjali
- [ ] Appy
- [ ] Pran Litchi
- [ ] Local Lemonade
- [ ] Local Sugarcane Juice
- [ ] Local Coconut Drink
- [ ] Any other local fruit juice

11. In juice based drinks, which flavor do you prefer most? *

Mark only one oval.

- ◯ Mango
- ◯ Orange
- ◯ Lemon
- ◯ Apple
- ◯ Other: ____________________

12. Imagine you're shopping in a hot afternoon in the open market under the sun and you're thirsty. What would you tend to buy? *

Mark only one oval.

◯ Refrigerated Packaged Drinking Water Bottle

◯ Small tetra pack

◯ Refillable bottle

◯ PET bottle

◯ Can

◯ Will look for local drink seller

13. Please indicate your level of agreement or disagreement with each statement. *

Mark only one oval per row.

	Highly disagree	Disagree	Neutral	Agree	Highly agree
Carbonated soft drinks are tastier than non carbonated ones.	⬭	⬭	⬭	⬭	⬭
Advertising play a deep role in me to buy the product	⬭	⬭	⬭	⬭	⬭
I easily switch brands based on advertisements	⬭	⬭	⬭	⬭	⬭
Physical visibility of the product and brand is important for attracting consumers	⬭	⬭	⬭	⬭	⬭
I believe carbonated drinks are harmful to my health	⬭	⬭	⬭	⬭	⬭
I believe juice based products are not harmful to my health	⬭	⬭	⬭	⬭	⬭
I check the ingredients and nutritional information before buying cold drinks	⬭	⬭	⬭	⬭	⬭

14. Any changes you wish from cold drinks that would make you to buy more cold drinks? (Optional)

____

APPENDICES

Area in Tails

Since the level of confidence is 1-alpha, the amount in the tails is alpha. There is a notation in statistics which means the score which has the specified area in the right tail.

Examples:

- Z(0.05) = 1.645 (the Z-score which has 0.05 to the right, and 0.4500 between 0 and it)
- Z(0.10) = 1.282 (the Z-score which has 0.10 to the right, and 0.4000 between 0 and it).

As a shorthand notation, the () are usually dropped, and the probability written as a subscript. The greek letter alpha is used represent the area in both tails for a confidence interval, and so alpha/2 will be the area in one tail.

Here are some common values

Confidence Level	Area between 0 and z-score	Area in one tail (alpha/2)	z-score
50%	0.2500	0.2500	0.674
80%	0.4000	0.1000	1.282
90%	0.4500	0.0500	1.645
95%	0.4750	0.0250	1.960
98%	0.4900	0.0100	2.326
99%	0.4950	0.0050	2.576

Z value Table for common confidence levels

Z	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
+0	0.50000	0.50399	0.50798	0.51197	0.51595	0.51994	0.52392	0.52790	0.53188	0.53586
+0.1	0.53983	0.54380	0.54776	0.55172	0.55567	0.55966	0.56360	0.56749	0.57142	0.57535
+0.2	0.57926	0.58317	0.58706	0.59095	0.59483	0.59871	0.60257	0.60642	0.61026	0.61409
+0.3	0.61791	0.62172	0.62552	0.62930	0.63307	0.63683	0.64058	0.64431	0.64803	0.65173
+0.4	0.65542	0.65910	0.66276	0.66640	0.67003	0.67364	0.67724	0.68082	0.68439	0.68793
+0.5	0.69146	0.69497	0.69847	0.70194	0.70540	0.70884	0.71226	0.71566	0.71904	0.72240
+0.6	0.72575	0.72907	0.73237	0.73565	0.73891	0.74215	0.74537	0.74857	0.75175	0.75490
+0.7	0.75804	0.76115	0.76424	0.76730	0.77035	0.77337	0.77637	0.77935	0.78230	0.78524
+0.8	0.78814	0.79103	0.79389	0.79673	0.79955	0.80234	0.80511	0.80785	0.81057	0.81327
+0.9	0.81594	0.81859	0.82121	0.82381	0.82639	0.82894	0.83147	0.83398	0.83646	0.83891
+1.0	0.84134	0.84375	0.84614	0.84849	0.85083	0.85314	0.85543	0.85769	0.85993	0.86214
+1.1	0.86433	0.86650	0.86864	0.87076	0.87286	0.87493	0.87698	0.87900	0.88100	0.88298
+1.2	0.88493	0.88686	0.88877	0.89065	0.89251	0.89435	0.89617	0.89796	0.89973	0.90147
+1.3	0.90320	0.90490	0.90658	0.90824	0.90988	0.91149	0.91308	0.91466	0.91621	0.91774
+1.4	0.91924	0.92073	0.92220	0.92364	0.92507	0.92647	0.92785	0.92922	0.93056	0.93189
+1.5	0.93319	0.93448	0.93574	0.93699	0.93822	0.93943	0.94062	0.94179	0.94295	0.94408
+1.6	0.94520	0.94630	0.94738	0.94845	0.94950	0.95053	0.95154	0.95254	0.95352	0.95449
+1.7	0.95543	0.95637	0.95728	0.95818	0.95907	0.95994	0.96080	0.96164	0.96246	0.96327
+1.8	0.96407	0.96485	0.96562	0.96638	0.96712	0.96784	0.96856	0.96926	0.96995	0.97062
+1.9	0.97128	0.97193	0.97257	0.97320	0.97381	0.97441	0.97500	0.97558	0.97615	0.97670
+2.0	0.97725	0.97778	0.97831	0.97882	0.97932	0.97982	0.98030	0.98077	0.98124	0.98169
+2.1	0.98214	0.98257	0.98300	0.98341	0.98382	0.98422	0.98461	0.98500	0.98537	0.98574
+2.2	0.98610	0.98645	0.98679	0.98713	0.98745	0.98778	0.98809	0.98840	0.98870	0.98899
+2.3	0.98928	0.98956	0.98983	0.99010	0.99036	0.99061	0.99086	0.99111	0.99134	0.99158
+2.4	0.99180	0.99202	0.99224	0.99245	0.99266	0.99286	0.99305	0.99324	0.99343	0.99361
+2.5	0.99379	0.99396	0.99413	0.99430	0.99446	0.99461	0.99477	0.99492	0.99506	0.99520
+2.6	0.99534	0.99547	0.99560	0.99573	0.99585	0.99598	0.99609	0.99621	0.99632	0.99643
+2.7	0.99653	0.99664	0.99674	0.99683	0.99693	0.99702	0.99711	0.99720	0.99728	0.99736
+2.8	0.99744	0.99752	0.99760	0.99767	0.99774	0.99781	0.99788	0.99795	0.99801	0.99807
+2.9	0.99813	0.99819	0.99825	0.99831	0.99836	0.99841	0.99846	0.99851	0.99856	0.99861
+3.0	0.99865	0.99869	0.99874	0.99878	0.99882	0.99886	0.99889	0.99893	0.99896	0.99900
+3.1	0.99903	0.99906	0.99910	0.99913	0.99916	0.99918	0.99921	0.99924	0.99926	0.99929
+3.2	0.99931	0.99934	0.99936	0.99938	0.99940	0.99942	0.99944	0.99946	0.99948	0.99950
+3.3	0.99952	0.99953	0.99955	0.99957	0.99958	0.99960	0.99961	0.99962	0.99964	0.99965
+3.4	0.99966	0.99968	0.99969	0.99970	0.99971	0.99972	0.99973	0.99974	0.99975	0.99976
+3.5	0.99977	0.99978	0.99978	0.99979	0.99980	0.99981	0.99981	0.99982	0.99983	0.99983
+3.6	0.99984	0.99985	0.99985	0.99986	0.99986	0.99987	0.99987	0.99988	0.99988	0.99989
+3.7	0.99989	0.99990	0.99990	0.99990	0.99991	0.99991	0.99992	0.99992	0.99992	0.99992
+3.8	0.99993	0.99993	0.99993	0.99994	0.99994	0.99994	0.99994	0.99995	0.99995	0.99995
+3.9	0.99995	0.99995	0.99996	0.99996	0.99996	0.99996	0.99996	0.99996	0.99997	0.99997
+4.0	0.99997	0.99997	0.99997	0.99997	0.99997	0.99997	0.99998	0.99998	0.99998	0.99998

Z value table

Likert Scale Analysis Using Mean Model

Question No	5	4	3	2	1	Total	Mean × Total Sample Size	Mean	Comment
q1	16	33	69	39	9	166	506	3.05	Neutral
q2	20	30	48	57	11	166	489	2.95	Agree (almost Neutral)
q3	38	62	43	21	2	166	611	3.68	Neutral
q4	9	11	34	79	33	166	382	2.30	Agree
q5	5	14	31	77	39	166	367	2.21	Agree
q6	11	26	45	59	25	166	437	2.63	Agree
q7	21	38	42	40	25	166	488	2.94	Agree (almost Neutral)

Where

Agreement	Denoting value
Strongly Disagree	5
Disagree	4
Neutral	3
Agree	2
Highly Agree	1

Agreement Mean Analysis Table

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