



An Analysis of Cookie Purchase Behavior by Consumers

C. Krishna Kumar¹, Abhijith. A², Dr.Jeevanandam.J³, Dr.Iyyappan. M⁴

^{1,2}Asian School of Business, Trivandrum – 695316, Kerala, India

^{3,4}Alliance University, Bengaluru – 562 106, Karnataka, India

(Received: 02 October 2023

Revised: 10 November

Accepted: 27 December)

KEYWORDS

Cookies flavors, FMCG, Consumer behavior, Business Management, Industry evaluation, Good Health and Well Being

ABSTRACT:

Purpose: The project aims to understand the consumer buying behavior of cookies in Trivandrum, Kerala, India. The research methodology used for the study is a combination of primary and secondary research. Primary research involved the collection of data through surveys conducted among consumers in Trivandrum.

Theoretical framework: The surveys were conducted using a structured questionnaire designed to gather information on consumer preferences, purchase behavior, and factors that influence their decision-making when buying cookies. The study found that consumers in Trivandrum prefer cookies that are tasty, affordable, and have good quality. Most consumers purchase cookies from supermarkets and convenience stores, while a smaller proportion purchase them from online stores.

Design/methodology/approach: performed research at Unibic Foods India Pvt. Ltd. with the main objective being "A Study on Consumer Buying Behavior of Cookies in Trivandrum." Thiruvananthapuram District served as the study site, and data for the project came directly from local clients. With a focus on the critical role that customers play in the decision-making process and their happiness, which is crucial in generating greater sales, this inquiry sought to identify the elements influencing consumer behavior in Trivandrum while purchasing cookies. To gain market share, brands use a variety of tactics.

Findings: The study found that consumers in Trivandrum prefer cookies that are tasty, affordable, and have good quality. The study also found that consumers are becoming more health-conscious, with an increasing preference for cookies that are low in sugar and fat.

Research, Practical & Social implications: The surveys were conducted using a structured questionnaire designed to gather information on consumer preferences, purchase behavior, and factors that influence their decision-making when buying cookies.

Originality/value: Overall, the study provides insights into the buying behavior of consumers in Trivandrum regarding cookies. The findings can be useful for cookie manufacturers and retailers to tailor their products and marketing strategies to better meet consumer preferences and needs.

1. Introduction

The food industry is one of the most dynamic and rapidly growing industries in the world, with a wide range of products catering to diverse consumer needs. Among these products, cookies have gained immense popularity as a convenient and tasty snack option. Cookies come in various flavors, shapes, and sizes, making them a versatile product that can cater to different consumer preferences. In Trivandrum, Kerala, India, the market for cookies is growing rapidly, with several local and global brands competing to capture market share. The increasing

demand for cookies has led to a growing interest in understanding the consumer buying behavior of cookies in Trivandrum. The study aims to gain insights into the factors that influence consumer preferences and purchasing decisions when buying cookies. Understanding consumer behaviors is crucial for manufacturers and retailers to develop effective marketing strategies, improve product offerings, and increase customer satisfaction. The study uses a combination of primary and secondary research to collect data on consumer preferences, purchase behavior, and factors that influence their



decision-making when buying cookies. The findings of the study can be used to guide the development of marketing strategies that better meet the needs and preferences of consumers in Trivandrum. Overall, this study aims to provide valuable insights into the consumer buying behavior of cookies in Trivandrum, which can help manufacturers and retailers to better understand the market and improve their product offerings to meet consumer demand. FMCG stands for "Fast Moving Consumer Goods," which refers to a broad category of products that are typically sold at a relatively low price point, have a high turnover rate, and are consumed or used frequently by consumers. The FMCG industry includes a wide range of products, such as food and beverages, personal care items, household cleaning products, and over-the-counter medications. FMCG products are typically non-durable, meaning that they have a short shelf life and are consumed or used up relatively quickly. As a result, they tend to have high sales volumes and require frequent replenishment by consumers. The FMCG industry is highly competitive, with many companies vying for market share in various product categories. Marketing and branding are key factors in success in the FMCG industry, as companies seek to differentiate themselves from their competitors and attract consumers through effective advertising and promotion. Over the past five years, the Fast-Moving Consumer Goods (FMCG) industry has undergone significant changes globally. The industry, which encompasses goods such as food and beverages, personal care, and household items, has experienced shifts in consumer behavior, technological advancements, and changes in the competitive landscape. One of the most significant changes has been the rise of e-commerce and the increasing use of technology in the FMCG industry.

Many consumers have shifted towards online shopping, which has caused a significant disruption in traditional brick-and-mortar retail. This has led to companies focusing on developing their online presence, improving supply chain management and logistics, and adopting new technologies to enhance the overall customer experience. The COVID-19 pandemic has also had a significant impact on the FMCG industry, leading to disruptions in supply chains, changes in consumer behaviour, and shifts in the competitive landscape. Many companies have had to adapt quickly to these changes, such as increasing their focus on e-commerce and adopting new safety measures to protect both their employees and consumers. The FMCG industry is expected to continue evolving in the coming years, with a focus

on emerging markets and the increasing use of data and analytics to improve supply chain management and enhance the overall customer experience. The industry is also likely to see continued consolidation as companies seek to gain a competitive advantage and increase their market share. In conclusion, the FMCG industry has undergone significant changes over the past five years. The rise of e-commerce, the increasing demand for sustainable and ethical products, consolidation in the industry, and the impact of the COVID-19 pandemic have all contributed to a rapidly evolving industry.

1.1 Industry Evolution: The FMCG industry in India has seen significant evolution over the past 5 years. The industry has been driven by several factors, including increased consumer spending power, urbanization, and a growing focus on health and wellness products. Additionally, the growth of e-commerce has played a significant role in the evolution of the industry, with many FMCG companies now focusing on online sales and digital marketing. Looking ahead, the Indian FMCG industry is expected to continue evolving, with a focus on digital innovation, product differentiation, and increased investment in supply chain management. The industry is also likely to see increased competition, with many new players entering the market and established companies looking to expand their market share.

1.2 Key players in the Industry: The FMCG industry is a global market with a vast number of companies and countries participating in the industry. However, there are several key player countries and companies that dominate the industry. The Indian FMCG industry is one of the fastest growing in the world, driven by factors such as increasing disposable income and a growing focus on health and wellness. Europe is also a significant player in the FMCG industry, with companies such as Unilever, Nestle, and Dan one leading the market. These companies are well-known for their innovation and investment in research and development, which has allowed them to stay competitive in a rapidly evolving industry.

1.3 Current demand Scenario and Demand Drivers of FMCG Industry : The FMCG industry has experienced significant changes in demand over the past few years, driven by a range of factors. One of the primary demand drivers of the FMCG industry is changing consumer preferences. Consumers are increasingly focused on health and wellness, and are seeking out products that are



natural, organic, and free from artificial ingredients. This has led to an increase in demand for products such as plant-based foods, organic produce, and natural personal care products.

1.4 Current Supply Scenario for FMCG Industry:

The supply scenario for the FMCG industry is highly competitive and dynamic. There are a large number of players in the market, ranging from small local players to large multinational corporations. The supply of FMCG products is largely influenced by factors such as consumer demand, raw material availability, distribution channels, and government regulations. One of the key trends in the supply of FMCG products is the increasing focus on sustainability and responsible sourcing. Many companies are now adopting eco-friendly practices and are sourcing their raw materials from sustainable sources. This is not only driven by consumer demand for environmentally friendly products but also by the need to comply with government regulations and sustainability standards. The supply chain for FMCG products is also becoming increasingly complex and digitized.

1.5 Story and Evolution of Unibic Foods: It is a leading manufacturer of biscuits and cookies in India. The company was founded in 2004 by two Australian entrepreneurs, Michael Quinn and Bradman Hall. The name "Unibic" is a combination of the words "unique" and "biscuit". The company started its operations in Bangalore, India with the aim of providing high-quality and unique cookies to the Indian market. Initially, the company faced several challenges in establishing its presence in a highly competitive market dominated by established players like Parle and Britannia. In 2006, Unibic India became a separate entity after being bought out by a group of investors led by former PepsiCo executive, Nikhil Sen. The new management team took over the company and started expanding its product range and distribution network. In 2011, Unibic India faced financial difficulties and was acquired by a joint venture between Indian FMCG Company, Kishore Biyani-led Future Group and Italian cookie maker, Balocco. The new owners invested in the company's manufacturing capabilities, marketing, and distribution infrastructure. They also introduced new product lines and expanded the company's presence in the Indian market.



Fig. 1. Unibic journey

In 2014, Future Group decided to exit the joint venture and sold its stake in Unibic India back to the Italian parent company, Balocco. This led to a restructuring of the company, with Balocco taking over as the majority stakeholder and Unibic India becoming a subsidiary of Balocco. Unibic Foods India Pvt. Ltd was able to differentiate itself by introducing innovative and unique products that

appealed to the Indian consumers. Some of the popular products of the company include Choco Kisses, Chocolate Chip Cookies, and Butter Cookies. Over the years, Unibic Foods India Pvt. Ltd has expanded its operations to other parts of the country and has also entered into the international market.



Fig. 2. Unibic products

UNIBIC Foods India caters to customers in India as well as cookie enthusiasts abroad. Following the pandemic, Unibic introduced new products such as Wafers, Biscott, and Snappers. Recently, the brand revamped its logo from UNIBIC Cookies to UNIBIC, reflecting that their offerings go beyond just cookies.

2. Literature Review

The cookie industry has witnessed a surge in demand in recent years due to changing lifestyles, increasing disposable incomes, and shifting consumer preferences. With more consumers choosing to snack on-the-go, cookies have emerged as a convenient and tasty option. The growing popularity of cookies has led to increased competition among manufacturers, and understanding consumer buying behavior has become critical for success in this market. This literature review aims to explore the existing research on consumer buying behavior of cookies, with a focus on the Trivandrum market. The review will cover key factors that influence consumer preferences, including taste, packaging, price, brand, and health concerns. The literature review is present below: "Factors Affecting Consumer Behavior towards Cookies: A Study in Indian Context" by Divya Singh and Vikas Sharma (2018): This study found that taste, packaging, price, and brand name were the most important factors influencing consumer buying behavior when it came to cookies in India. 400 people from four Indian cities—Delhi, Mumbai, Bangalore, and Chennai—were surveyed by the writers. The findings indicated that the main factors impacting customer behavior about cookies were flavor, price, brand name, and health concerns. The authors also discovered that customers liked goods that were viewed as healthy and were prepared to pay more for high-quality

cookies. For cookie producers seeking to join or grow their position in the Indian market, the report offers helpful insights. "Exploring the Buying Behavior of Customers Towards Branded Cookies: A Study in Pune City" by Shital J. Patel and Vinod B. Menaria (2017): This study discovered that the most significant elements influencing consumer behavior in Pune, India were the flavor, quality, and packaging of branded cookies. Using the help of descriptive statistics and regression analysis, the authors conducted a survey with 150 participants. The findings demonstrated that elements like taste, quality, packaging, brand image, and price significantly influenced consumers' purchasing decisions. Customers were willing to spend more for high-quality cookies, and the taste was the most important element influencing consumer choices, according to the authors. For cookie producers trying to create efficient marketing plans for branded cookies, the study offers helpful data. The study also discovered that promotions and advertising significantly influenced consumer preferences. "Consumer Preferences for Cookies: A Survey of Indian Consumers" by G. Aparna and A. Aruna (2015): This study aimed to explore consumer preferences for cookies in India.

The authors conducted a survey of 300 respondents from different age groups, income levels, and professions. The results showed that taste, packaging, and brand name were the most critical factors influencing consumer preferences. The authors also found that consumers preferred cookies that were low in sugar and fat content and perceived as healthy. The study provides useful insights for cookie manufacturers looking to develop products that meet consumer preferences and needs, and also highlights the importance of effective marketing strategies for attracting and retaining customers in



the highly competitive Indian market. "Impact of Sales Promotion on Consumer Behavior of FMCG Products, A Study on Cookies and Biscuits" by Ashok S. Bhakta and Harshavardhan Acharya (2016): aimed to investigate the impact of the effect of sales promotion on Indian consumers' purchasing decisions about cookies and biscuits. Using the help of descriptive statistics and regression analysis, the authors conducted a survey with 300 participants. The findings demonstrated that customer behavior towards cookies and biscuits was significantly impacted by sales promotions like discounts, buy-one-get-one deals, and free gifts. The authors discovered that customers chose goods they thought offered good value for money. For marketers trying to create successful sales promotion plans for cookies and biscuits in the very competitive FMCG sector in India, the study offers helpful information. "Factors Affecting Consumer Buying Behavior Towards Bakery Products: A Study on Cookies and Biscuits" by Rahul Jain and Vaibhav Jain (2019) This study investigates the factors that affect consumer buying behavior towards cookies and biscuits in India. The authors use a questionnaire to collect data from a sample of 150 respondents. The study finds that taste, price, and brand are the most important factors influencing consumer buying behavior and focuses on identifying the key factors that influence consumer buying behavior towards bakery products, specifically cookies and biscuits. The study highlights the impact of various factors such as packaging, brand loyalty, price, taste, and health consciousness on consumer behavior in the context of the Indian market. "Consumer Behavior towards Cookies and Confectionery in Bangalore City" by S. Srinivasan and S. Sivaramakrishnan (2014) This study examines consumer behavior towards cookies and confectionery in Bangalore, India. The authors use a survey method to collect data from a sample of 400 respondents. The study finds that taste, price, and packaging are the most important factors influencing consumer buying behavior. Through the study, explores the factors influencing consumer behavior, such as taste, price, packaging, brand, and product attributes. The study also points out the impact of variables such as age, gender, income, and education on consumer behavior. "Factors Affecting Consumer Buying Behavior towards Bakery Products with Special Reference to Cookies in Mumbai" by Shraddha P. Kelkar and Hemant K. Patil (2016)

The determinants impacting customer purchasing behavior for bakery goods, specifically cookies, in Mumbai are investigated in this study. The literature

study discusses several variables, including product quality, packaging, brand, price, taste, and nutritional content, which influence consumer decision-making when buying cookies. Additionally, the study investigates how consumer behavior towards cookies is impacted by demographic factors like age, gender, income, and education. The review also touches on the impact of promotions and advertising on consumer attitudes and perceptions of cookies. The results of this study give marketers insightful information that they may use to create successful marketing plans for bakery goods, notably cookies, in Mumbai. "An Empirical Study of Consumer Perception and Purchase Behavior for Cookies in India" by Himanshu Shekhar Mishra and Varsha Jain (2018). This study examines the consumer perception and purchase behavior of cookies in India and explores factors such as brand image, packaging, and pricing that influence consumer buying decisions. 300 respondents in Lucknow city were surveyed for the study, which used that method to gather data. Descriptive analysis, correlation analysis, and regression analysis are a few statistical techniques the authors use to analyze the data. According to the study, there is a substantial relationship between customer perceptions of and purchasing patterns for cookies in India and criteria including brand, price, quality, packaging, and taste. When it comes to analyzing customer behavior and creating successful marketing tactics, the study offers cookie producers and marketers useful data. The scope of this study is to examine the factors that influence consumer buying behavior of cookies in Trivandrum, India. By analyzing the preferences of consumers in terms of taste, packaging, price, brand, and health concerns, the study aims to provide insights into the marketing strategies that cookie manufacturers can adopt to attract and retain customers in this region. The problem addressed by this study is to understand the consumer buying behavior of cookies in Trivandrum, India. Despite the large market potential for cookies, there is a lack of research on the factors that influence consumer preferences in this region. In addition, the increasing health concerns of consumers add a new dimension to the study of buying behavior. Therefore, this study seeks to explore the factors that impact the decision-making process of consumers when it comes to purchasing cookies in Trivandrum. By identifying these factors, the study can contribute to the development of effective marketing strategies for cookie manufacturers in this region.



3. Proposed Methodology

A sample is a representative subset of the population from which data is collected via sampling procedures in order to make generalizations about the universe. Convenience sampling is frequently the least accurate strategy but is often the easiest and most affordable to use; for this research endeavor, it was used to gather data from respondents. Researchers can select responders at their discretion using this strategy. The sample size reveals how many items were chosen for the investigation. To reduce interviewer and interpreter bias, a well-structured questionnaire was employed. A chosen sample of Unibic Foods India Pvt. Ltd. clients provided primary data, which the investigator obtained for the first time, and which were unique in character. A structured questionnaire. Conversely, incomplete items were used to get secondary data, which had already been gathered and released by others. Two categories of secondary data were gathered: external data from publications, research books, and the internet, and internal data from the company's brochure, manuals, and conversations with superiors. According to respondents, Garrett's

Ranking Technique, a popular tool in business analytics, ranks problems according to their severity or relevance. A list of problems is presented, and respondents are asked to rank them using a numerical score in order of significance. Although this approach makes problem prioritization quick and simple, it's vital to take respondents' possible biases into account. A statistical hypothesis test called the chi-square test is performed to ascertain if two category variables have a significant relationship or not. To ascertain the importance of the relationship, it compares the observed and predicted data, and the chi-square value that results in is then compared to a critical value. The kind of data and the research issue will determine which approach is best for doing chi-square testing. The chi-square test, which is widely applied in many domains, is an effective method for examining categorical data and identifying correlations between variables.

3.1 Data Analysis and Interpretation: The packets of cookies/ biscuit are you likely to buy in a month.

Table. 1. Quantity measurement

Purchase quantity	No of consumers
1 to 5 Packets	42
5 to 10 Packets	14
Above 10 Packets	10
None	5
Total	71

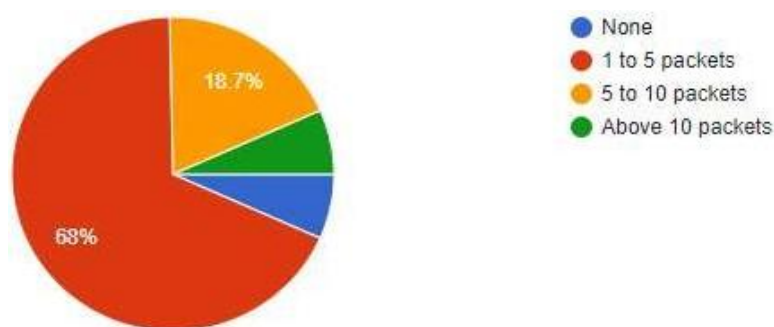


Chart. 1. Ratio calculation

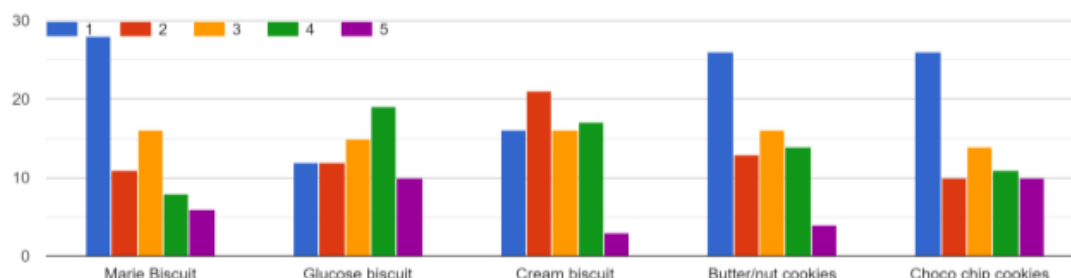
According to the responses 68 % of peoples purchase 1 to 5 packets in a month and 18% of 5 to 10 packets. Only 6.7 % of customers buys above 10 packets and buys none.

Table. 2. Rank the type of cookies or biscuit that is most preferred in home

Types of cookies/Biscuits	1	2	3	4	5
Marie Biscuit	30	11	18	7	4
Glucose Biscuit	13	13	16	20	9
Cream Biscuit	16	20	15	17	3



Butter/Nut cookies	25	13	14	14	5
Choco chip cookies	25	11	15	11	9



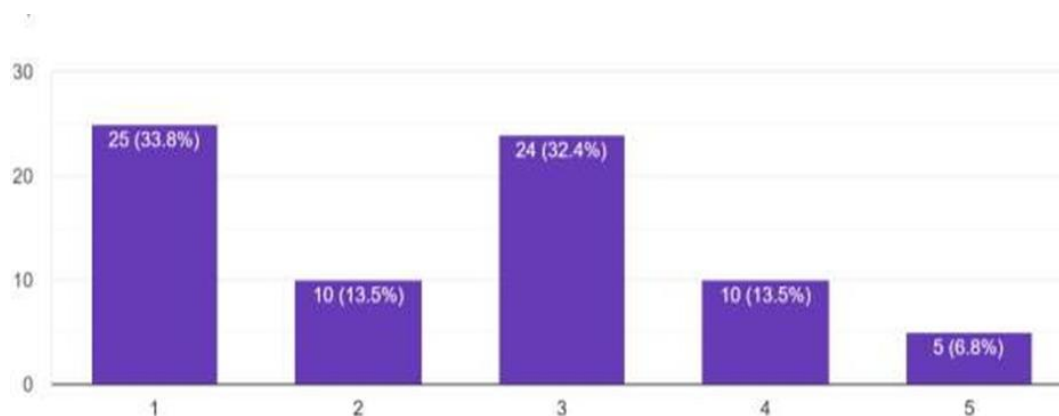
Graph. 1. Branded preference

Most people prefer Marie Biscuit in their home as their first preference. Choco-chip cookies and butter cookies almost same preference level. Glucose

biscuit doesn't have a significantly higher difference in preference with glucose biscuit.

Table. 3. Ranking of responses

Ranks	No of responses
1	23
2	11
3	22
4	10
5	5



Graph. 2. Biscuits/cookies that are made of whole wheat

Based on the result customers rarely purchase whole wheat cookies. Only 6.8 % response was reflected for Rank 5. And 33.8 % and 32.4 % for Rank 1 and

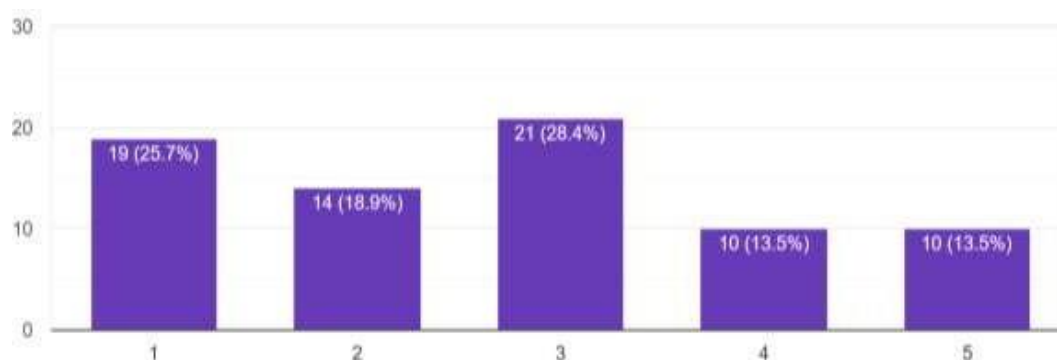
Rank 3 respectively. But 32.4 % of Rank 3 indicated there is no reluctance or more preference towards wheat cookies.

Table. 4. Biscuit/cookies with low sugar

Ranks	No of responses
1	16
2	13
3	21



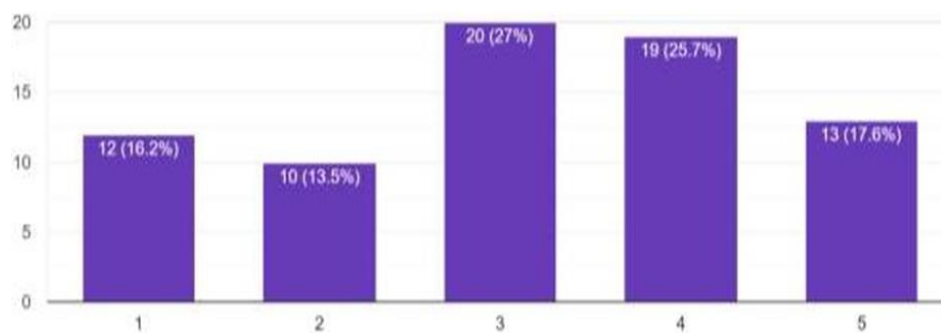
4	10
5	11



Graph. 3. Low sugar in the cookies

Table. 5. Same brand preferred rank

Rank	No of responses
1	12
2	10
3	20
4	19
5	13



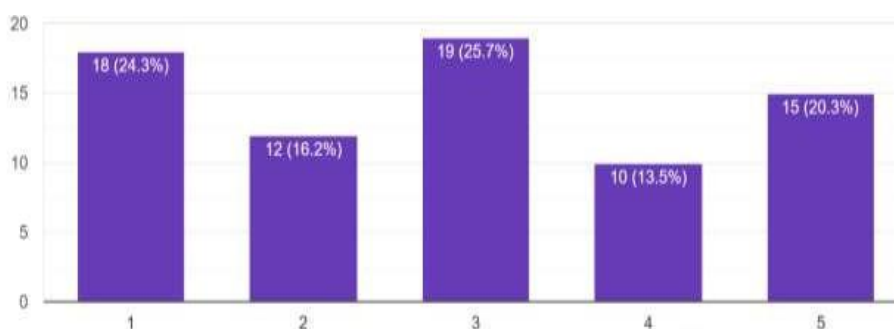
Graph. 4. Repeated customers on same brand

There is a good preference in consumers for buying same branded cookies repeatedly. There no such huge difference between Rank 3 and Rank 4 (27%

& 25%). And also Rank 5 comes with 17.6% which is higher than Rank 1 & Rank 2.

Table. 6. Ingredients ranking

Rank	No of responses
1	18
2	12
3	19
4	10
5	15



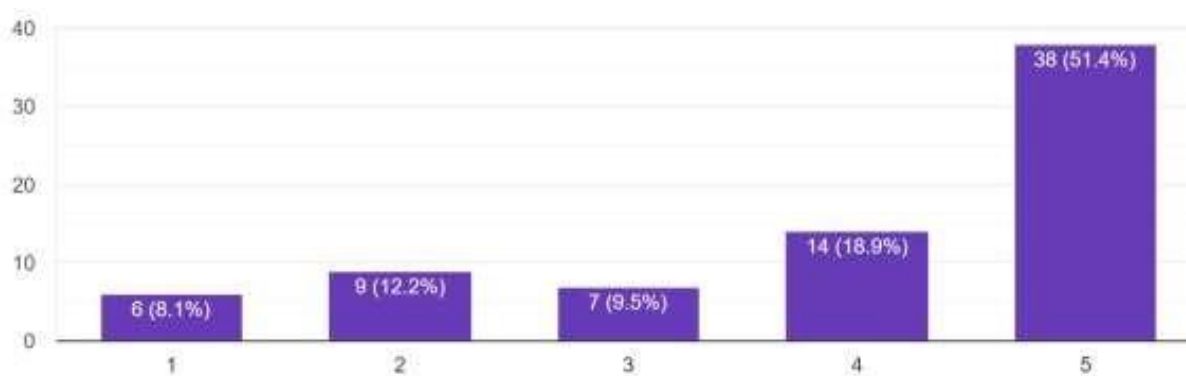
Graph. 5. Ingredients percentage

The result shows 25.7% and 24.3% responses for rank 3 and 1. Thus indicated customers check the

list of ingredients on the packet before buying biscuits/cookies very less.

Table. 7. Price based purchase

Rank	No of responses
1	38
2	24
3	7
4	9
5	6

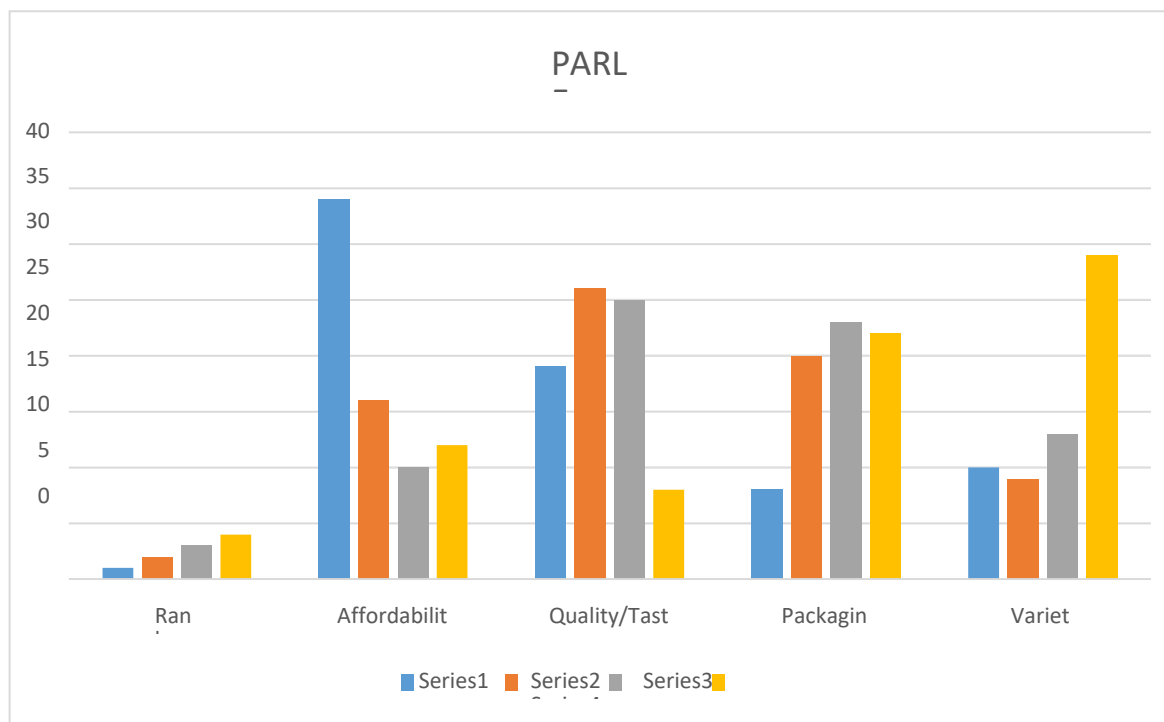


Graph. 6. 51.4% of the responses indicates MRP

Please rank the following brands on the attributes given.

Table. 8. Parle biscuit attributes

Rank	Affordability	Quality/Taste	Packaging	Variety
1	34	19	8	10
2	16	26	20	9
3	10	25	23	13
4	12	8	22	29

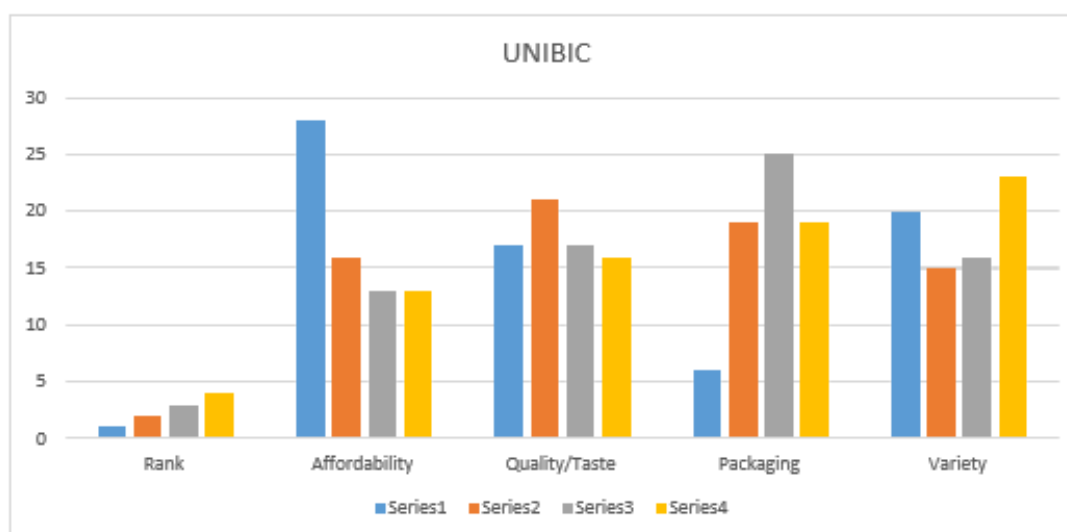


Graph. 7. Comparison of parle

Based on the response, Parle offers affordable products for the market. Quality/Taste is the second most attractable factor to the brand and follows packaging and varieties of the cookies/biscuit at the last respectively.

Table. 9. Unibic attributes

Rank	Affordability	Quality/Taste	Packaging	Variety
1	28	17	6	20
2	16	21	19	15
3	13	17	25	16
4	13	16	19	23



Graph. 8. Comparison of Unibic

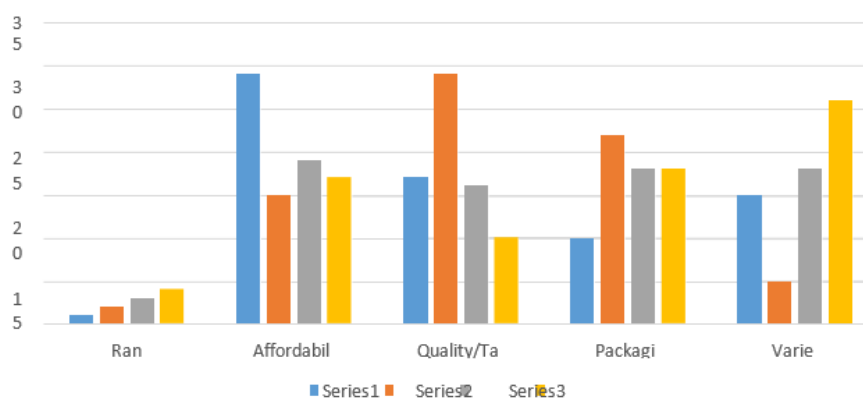


Through the responses, we can figure out that Unibic also provides affordable cookies and good varieties of cookies along with good packaging and lacks tasty cookies/biscuits.

Table. 10. Britannia attributes

Rank	Affordability	Quality/Taste	Packaging	Variety
1	29	17	10	15
2	15	29	22	5
3	19	16	18	18
4	17	10	18	26

Chart



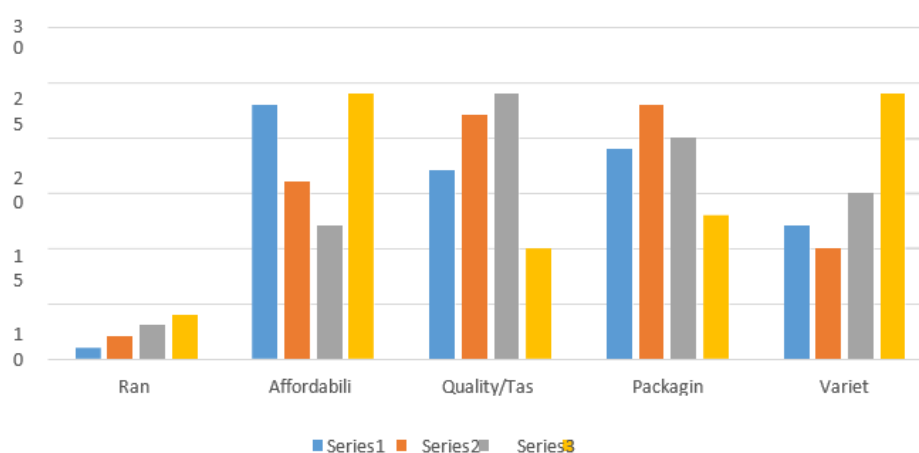
Graph. 9. Role of Britannia

Britannia offers well affordable products along with good quality and tasty cookies. They lacks in product varieties and packaging.

Table. 11. Attributes of sunfeast

Rank	Affordability	Quality/Taste	Packaging	Variety
1	23	17	19	12
2	16	22	23	10
3	12	24	20	15
4	24	10	13	24

Chart



Graph. 10. Sunfeast comparison



Based on the data, sunfeast is offering overall good product to the market. They are good at their affordability, quality/taste and packaging. But have less variety.

Table. 12. Comparison of all the brand biscuits

Brands	Rank 1	Rank 2	Rank 3	Rank4
Parle	34	16	10	12
Sunfeast	23	16	12	24
Unibic	28	16	13	13
Britannia	29	15	19	17

Percentile positions are calculated and Garret score is taken from the Garrett Table Percentile Position = $100 + (R_{ij} - 0.5) / N_{ij}$

Where, R_{ij} = Rank number, N_{ij} = Total Number of ranks

Table. 13. Garrett calculation

Rank	Percentile position	Garett score
1	12.5	73
2	37.5	56
3	62.5	44
4	87.5	27

Table. 14. Garett checking with brands

Rank	F(Parle)	F(Sunfeast)	F(Unibic)	F(Britannia)	Garett score	Parle	Sunfeast	Unibic	Britannia
1	34	23	28	29	73	2482	1679	2044	2117
2	16	16	16	15	56	896	896	896	840
3	10	12	13	19	44	440	528	572	836
4	12	24	13	17	27	324	648	351	459
Total						4142	3751	3863	4252

Table. 15. Garrett score for brand

Rank	Brand	Garrett's Score
1	Britannia	4252
2	Parle	4142
3	Unibic	3863
4	Sunfeast	3751

Based on the Garrett's ranking based on responses provided by consumers Britannia got the 1st rank and Parle 2nd, Unibic had the third position followed by Sunfeast at the 4th place .

Table. 16. Rank for Biscuits

Brands	Rank 1	Rank 2	Rank 3	Rank4
Parle	8	20	23	22
Sunfeast	19	23	20	13
Unibic	6	19	25	19
Britannia	10	22	18	18

Table. 17. Packing rank for biscuits

Rank	Percentile position	Garett score
1	12.5	73
2	37.5	56
3	62.5	44
4	87.5	27



Percentile positions are calculated and Garret score is taken from the Garrett Table $\text{Percentile Position} = 100 + (R_{ij} - 0.5) / N_{ij}$ Where, R_{ij} = Rank number, N_{ij} = Total Number of ranks

Table. 18. Comparison of different brands

Rank	Parle	Sunfeast	Unibic	Britannia	Garrett score	Parle	Sunfeast	Unibic	Britannia
1	8	19	6	10	73	584	1387	438	730
2	20	23	19	22	56	1120	1288	1064	1232
3	23	20	25	18	44	1012	880	1100	792
4	22	13	19	18	27	594	351	513	486
Total						3310	3906	3115	3240

Table. 19. Garrett for brand packing

Rank	Brand	Garrett's Score
1	Sunfeast	3906
2	Parle	3310
3	Britannia	3240
4	Unibic	3115

Based on the Garrett ranking, Sunfeast has the best competitive packaging quality among other four brands. Parle is ranked in second position by keeping back Britannia and Unibic at 3rd and 4th position respectively.

Table. 20. Quality and Taste

Brands	Rank 1	Rank 2	Rank 3	Rank 4
Parle	19	26	25	8
Sunfeast	17	22	24	10
Unibic	17	21	17	16
Britannia	17	29	16	10

Table. 21. Percentile calculation

Rank	Percentile position	Garrett score
1	12.5	73
2	37.5	56
3	62.5	44
4	87.5	27

Percentile positions are calculated, and Garret score is taken from the Garrett Table $\text{Percentile Position} = 100 + (R_{ij} - 0.5) / N_{ij}$

Where, R_{ij} = Rank number, N_{ij} = Total Number of ranks

Table. 22. Product comparison of biscuits in the Taste

Rank	Parle	Sunfeast	Unibic	Britannia	Garrett score	Parle	Sunfeast	Unibic	Britannia
1	19	17	17	17	73	1387	1241	1241	1241
2	26	22	21	29	56	1456	1232	1176	1624
3	25	24	17	16	44	1100	1056	748	704
4	8	10	16	10	27	216	270	432	270
Total						4159	3799	3597	3839

Table. 23. Taste ranking

Rank	Brand	Garrett's Score
1	Parle	4159
2	Britannia	3839
3	Sunfeast	3799



4	Unibic	3597
---	--------	------

According to the ranking, Parle offer more quality/tasty cookies than other four, so as ranked as 1. Britannia is the second player, Sunfeast and Unibic shares 3rd and 4th position respectively.

Table. 24. Taste of various products

Brands	Rank 1	Rank 2	Rank 3	Rank4
Parle	10	9	13	29
Sunfeast	12	10	15	24
Unibic	20	15	16	23
Britannia	15	5	18	26

Table. 25. Product innovation in the biscuit

Rank	Parle	Sunfeast	Unibic	Britannia	Garett score	Parle	Sunfeast	Unibic	Britannia
1	10	12	20	15	73	730	876	1460	1095
2	9	10	15	5	56	504	560	840	280
3	13	15	16	18	44	572	660	704	792
4	29	24	23	26	27	783	648	621	702
Total						2589	2744	3625	2869

Table. 26. Rank for Unibic

Rank	Brand	Garrett's Score
1	Unibic	3625
2	Britannia	2869
3	Sunfeast	2744
4	Parle	2589

On varieties of products Unibic offers more than the other key players. Britannia scored 2nd rank and keeps a slight above value than Sunfeast which is in 3rd rank. And Parle has less variety of products among the other competitors.

Hypothesis : In this experiment compared with various hypothesis from 1 to 4 which is not suitable

for calculation. The final module of 5th hypothesis will appropriate for the selection.

Hypothesis No. 5

Gender and preference for sugar-free cookies do not significantly correlate, according to Ho.

Gender and desire for sugar-free cookies are significantly correlated, according to H1.

Table. 27. Gender details for hypothesis

Gender	1 to 2	3	4 to 5	Total
Male	14	10	8	24
Female	15	11	13	26
Total	29	21	21	71

Table. 28. Expected frequency

Gender	1 to 2	3	4 to 5
Male	9.802816901	7.098591549	7.098591549
Female	10.61971831	7.690140845	7.690140845

Table. 29. Comparison of frequency

Observed frequency (o)	Expected frequency (e)	Observed-expected (o-e)	o-e ²	o-e ² /e
14	9.802816901	4.197183099	17.61634596	1.797069775
10	7.098591549	2.901408451	8.418170998	1.185893137



8	7.098591549	0.901408451	0.812537195	0.114464565
			sum=	3.097427477

Level of significance= 0.05, Degree of freedom = 2, Calculated as $(x-1)(y-1)$, Where, x =no. of rows, y =no. of columns Table value = 5.99. Inference: Hence, the critical value > the calculated value We do not reject null hypothesis. Interpretation: There is no significant relationship between the gender and sugar preference

3.2 Brand comparison benefits: All brands have their own unique presence in the market. All of them have wide range of products, but among them as a competitive advantage Unibic Foods India Pvt. Ltd have wide range of product varieties directly under the brand name. Britannia is chosen as the most affordable brand. It shows that they are continuing their aim to make every third Indian a Britannia customer, started at 2003. Britannia has separate varieties of products to attract bottom of the pyramid customers. Packaging helps products in storing and maintaining the inventory space and products damage free. Customers point out that brand Sunfeast has a good packaging quality and Unibic is the last among competition level. As the response points out, Unibic is last among other major brands in packaging and taste. This is a real condition, happened only because of their quality compromise on offer products. Unibic reduces their ingredients ratios and compromise in packaging acts as a drawback made the result worse. 94.7% of responders had purchased Unibic products but 64.9% of people voted the interest of repeat purchase even available in offer. Offer products are attention seekers of the brand where prospects purchase often for a trial in FMCG sector. Based on quality and taste Parle ranked first among other competitors. This is a real condition, happened only because of their quality compromise in offer products. Offer products are attention seekers of the brand where prospects purchase often for a trial in FMCG sector.

As the market is seeking health-conscious food products, there is no significant relation between specific gender and preference of whole wheat products neither on sugar content too. The result indicates there is no gender specific difference in checking ingredients of the products. Sugar content is a concern for the customers. But less sweet or no sweet cookies are not preferred by customers. Mostly women are seen as the more price seeking consumers and the result on chi square test show the strong relationship between gender and price preference. Loyalty is a main factor of sales. Male customers often try to make their purchase on different items and varieties. But female customers prefer same brand and makes repeated purchases.

3.3 Recommendation to improve the products:

Online and Mass media Promotions and advertisements are the key factors which drive sales of biscuits/cookies. Brands like Unibic have less advertisements and promotional activities. It would have to be well advertised to attract young customers. Using more end caps and catchy colour patterns will attract customers, though cookies/biscuits are not likely a planned purchase. Offers are new customer hunters. Compromising in quality while making offers will result in a negative impact on brands. Brand Unibic is the real example. There are several brands who promote their products through sub-brands like Sunfeast. So, parent company will result in a less recall. Brand loyalty programs should be encouraging to boost brand images. Packaging assists in home storage and better alignment of products in shop racks and will also act as a visual drive/promotion which boosts purchases. Good packaging will protect the product from damage from the mishandling of employees of shops and customers. Britannia has real issues with packages. Brand positioning contributes well to sales. While making offers and promotions the factor should have to be considered. Healthy products like oats cookies and whole wheat cookies are good in taste and for diet. So these products should have to be specially advertised. Sunfeast had done it with their wheat digestive cookies by partnering brand Ashirvad. Sugar content is a concern for the customers. But less sweet or no sweet cookies are not preferred by customers. Colour elements of products will also boost sales. Unibic have severe issues with their colour and patterns of packages. These factors are also stimulations in the mind of customers while making a purchase decision. Smalls packets are trial packets of prospective customers. So, decreasing the quantity in those packets are not a good option. Making good relationship with existing customers through reward programs or free products for frequent purchase can be done. It is possible only for super/hyper markets where customer loyalty cards are widely used.

4. Conclusion

As my capstone project, I performed research at Unibic Foods India Pvt. Ltd. with the main objective



being "A Study on Consumer Buying Behavior of Cookies in Trivandrum." Thiruvananthapuram District served as the study site, and data for the project came directly from local clients. With a focus on the critical role that customers play in the decision-making process and their happiness, which is crucial in generating greater sales, this inquiry sought to identify the elements influencing consumer behavior in Trivandrum while purchasing cookies. To gain market share, brands use a variety of tactics.

5. References

- [1] Priyambada Kalita, (2021), A study on customer satisfaction towards Britannia biscuits in Guwahati city (https://ijaem.net/issue_dcp/a%20study%20on%20customer%20satisfaction%20towa)
- [2] Punjani Krunal, K Bhanushali Mahesh, Palde Santosh, V. N. Bedekar (2019) Comparative analysis of the perceptions of consumers and retailers towards Britannia biscuits
- [3] Sungeetha, Akey. "Emotion Based Prediction in the Context of Optimized Trajectory Planning for Immersive Learning." arXiv preprint arXiv:2312.11576 (2023).
- [4] Sungeetha, Akey. "Optimized Deep Learning Models for AUV Seabed Image Analysis." arXiv preprint arXiv:2311.10399 (2023).
- [5] Chinnaiyan, R., Kondaveeti Sai, and P. Bharath. "Deep Learning based CNN Model for Classification and Detection of Individuals Wearing Face Mask." arXiv preprint arXiv:2311.10408 (2023)
- [6] Chinnaiyan, R., Prasad, G., Sabarmathi, G., Swarnamugi, Balachandar, S., Divya, R. (2023). Deep Learning-Based Optimised CNN Model for Early Detection and Classification of Potato Leaf Disease. In: Bhateja, V., Yang, X.S., Ferreira, M.C., Sengar, S.S., Travieso-Gonzalez, C.M. (eds) Evolution in Computational Intelligence. FICTA 2023. Smart Innovation, Systems and Technologies, vol 370. Springer, Singapore. https://doi.org/10.1007/978-981-99-6702-5_47
- [7] Das, S. et al. (2023). Crowd Monitoring System Using Facial Recognition. In: Bhateja, V., Carroll, F., Tavares, J.M.R.S., Sengar, S.S., Peer, P. (eds) Intelligent Data Engineering and Analytics. FICTA 2023. Smart Innovation, Systems and Technologies, vol 371. Springer, Singapore. https://doi.org/10.1007/978-981-99-6706-3_50
- [8] Sr kumar (2009), Consumer behaviour and branding: Concepts, Readings and Cases-the Indian context (<https://books.google.co.in/book/s>)
- [9] D. Manley, (2011) Manley's technology of biscuits, crackers and cookies, a volume in Woodhead publishing series in food science, technology and nutrition book , fourth edition (<https://www.indianjournals.com/ijor.aspx?target=ijor:ijmie&volume=9&issue=7&article=019>)
- [10] R. Brightwell, sustainability in the biscuit industry (<https://www.sciencedirect.com/science/article/pii/B9781845697709500076>)
- [11] Joseph p. Kerry, (2018) the impact of sugar particle size manipulation on the physical and sensory properties of chocolate brownies (<https://www.sciencedirect.com/science/article/abs/pii/S002364381830344x>)
- [12] Hitesh pant (2019) consumer behaviour towards ready-to-eat food products
- [13] Elizabeth Carrillo, Paula Varela, (2019) Effects of food package information and sensory characteristics on the perception of healthiness and the acceptability of enriched biscuits,
- [14] Narula, Anupam; Taneja, Tyagi, (2016) The changing trends in biscuit consumption pattern: a study of Mc Vities digestive biscuits in Jaipur
- [15] Global fast-moving consumer goods (FMCG) market report, history and forecast 2014-2025." Market research report (2019) (
- [16] FMCG sector in India: Market size, Market share, growth, and forecast, Research (2021). (
- [17] Top 10 FMCG companies in the world (2021).
- [18] Fast moving consumer goods (FMCG) industry in India - Overview, Market size, and Growth. ibef. (2021)
- [19] <https://unibicfoods.com>
- [20] <https://economictimes.indiatimes.com/industry/cons-products/fmcg/for-biscuit-companies-this-is-how-the-cookie-crumbles-post-gst/articleshow/68506369.cms?from=mdr>