

# **"A Case Study in Improving Operational Efficiency: The Bakery Perspective"**

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## **CHAPTER 1: INTRODUCTION**

Breads and Bakery is one of the key segments in the food processing sector of India offering huge opportunities for growth, innovation, and employment generation. The demand for biscuits and cookies is driving the growth of the Indian bakery market. The sector is also witnessing a shift towards healthier alternatives, driven by the growing health awareness worldwide. Key products with high potential in the Indian bakery sector include biscuits, breads, cakes, pastries, cookies, pizzas, puffs, samosas, donuts, muffins, croissants, bagels, buns, and rolls. These products reflect the diverse and evolving bakery market in India, influenced by both traditional and international cuisines. The growth of the sector in India is supported by a strong regulatory framework, research and development initiatives, and government schemes focused on the sector's development.

### **A Brief History of Bakery in India**

One of the largest segments of the food processing industry in India is the Bakery Industry with more than 2,000 industrial bakeries producing around 1.4 million tons of bakery products and 1,000,000 small-scale bakeries producing 1.8 million tons of bakery products. Bakery is a traditional activity and occupies an important place in the food processing industry. The bakery manufacturers in India can be differentiated into three broad segments of bread, biscuits, and cake. India is the second largest producer of biscuits in the world after the USA.

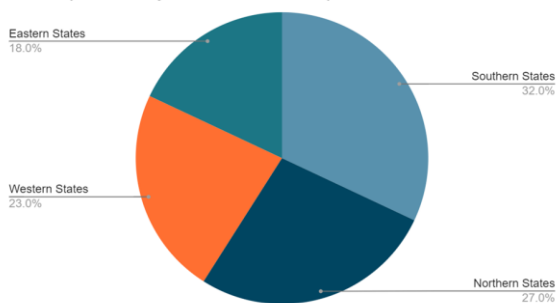
India is the world's second-largest producer of food next to China and has the potential to be the biggest in its food and agricultural sector. The Indian bakery industry is one of the biggest sections of the country's processed food industry. India's organized bakery sector produces about 1.3 million tons of bakery products (out of three million tons) while the balance is produced by unorganized, small-scale local manufacturers. In spite of many challenges faced by the bakery segment, they are growing steadily and continuously.

The Bakery industry is a huge industry employing a large number of people. The Bakery sector is the largest of all the segments of India's food processing sector. A large part of this market is captured by bread and biscuits which are items of mass consumption. In addition to this, growth in fast-food chains further stimulates the demand for breads as they are used for sandwiches, burgers, snacks, etc. Moreover, the introduction of value-added bakery products is giving a boost to the market growth. Apart from this, busy lifestyles, changing eating habits and Western influence has reflected in a strong demand for bakery products in India.

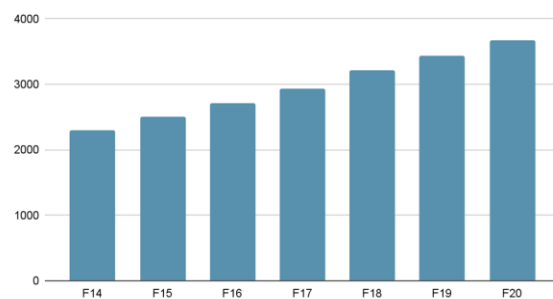
## CHAPTER 2: REVIEW OF LITERATURE

The Indian bakery market size for 2022 was 11.3 billion USD and is forecasted to increase by 10.8% in the next five years. Bread and bakery are staple foods consumed by more than 70% of the population in India. Between 2018 and 2022, the bread and bread products market witnessed an increase of 2% growth rate.

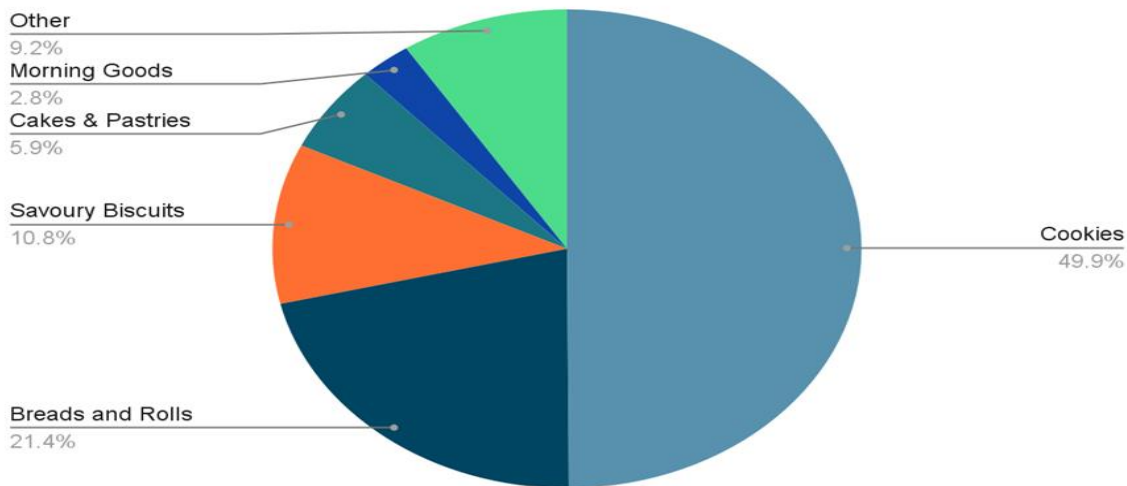
Per Capita Bakery Products Consumption in India



Market Trend for Bread and Bakery Products in India till 2020



Product wise Market Segmentation of Baked Goods, 2021



Here are some charts to show the influence of the Bakery Industry in recent years.

Bakery products offer a wide range of Flavors and textures to suit different tastes. On the sweet side, you have treats like cakes, pastries, and cookies. Meanwhile, the Savory side brings forth delicious options such as bread, pies, and Savory pastries. Together, these bakery delights create a diverse and delightful culinary experience, adding a touch of sweetness or Savory goodness to

our lives. Following figure represents the product wise market segmentation of bakery products in India in 2021.

To further understand the given topic, let us take a look at an ideal case as for how a bakery industry should operate.

Bakery management encompasses all activities intended to manage bakery operations. It may include but is not limited to the following 10 macro-processes:

1. Production planning and demand forecasting
2. Raw materials and ingredients supply
3. Production management
4. Engineering and maintenance
5. Plant personnel management
6. Continuous improvement
7. Quality assurance
8. Plant sanitation
9. Plant economics control, overall plant operation and financial reports
10. Support and strategic areas (R&D, bakery formulations)

There are companies on national level which are well established, but there also exist several small enterprises which face tough times, questioning their viability and profits. Recognizing this, we have set our sights on one such business, aiming to give it a boost. Our goal is to make it more efficient and profitable, contributing to the overall health of local businesses.

We approached a local bakery unit, which produces goods on a small scale and mainly supplies to Kirana shops in Warangal, Kazipet, Hanamkonda, Ganpuri and Narsampet.

Kapil Foods, located in Rampur, has a product mix of 16 products which are enlisted below:

|                 |                    |                   |                   |
|-----------------|--------------------|-------------------|-------------------|
| 1. Bread        | 2. Egg Puff        | 3. Curry Puff     | 4. Chicken Puff   |
| 5. Dilpasand    | 6. Cream Buns      | 7. Donuts         | 8. Plum Cakes     |
| 9. Sponge Cakes | 10. Cupcake        | 11. Birthday Cake | 12. Fruit Rolls   |
| 13. Cream Rolls | 14. Jeera Biscuits | 15. Jam Biscuits  | 16. Sweet Biscuit |

The processes done for all the products in the factory is similar with minute changes, the process for manufacturing breads is as follows:

- The raw materials (Maida, Dalda, Sugar, Yeast) are mixed in a mixer (1.5 HP) for 15 minutes. The mixture is about 60-70 kgs, kept in accordance with the capacity of the oven.
- The dough is then rested for an hour then transferred into the mold for baking.
- The molds are then laid on trays and then baked for about 45 minutes. They bake around 252 loaves of bread at a time in the oven.
- After baking, the breads are kept aside for a few hours (generally overnight) for them to cool down.
- The breads are then taken to the slicing section to divide them in several slices and then sent away after packaging.

The factory manufactures the products on an order basis for most of their products and for breads they produce based on the demand for the next few days. There is no standard quantity that is produced every day. The factory follows P system inventory with a lead time of 1 week.

Though the processes are carried out efficiently and all products are sold, we observed a few things which could be improved by the bakery for better quality of the products:

1. Lack of focus on quality and customers' requirement
2. Lack of standard measurements.
3. Poor hygienic conditions.
4. Breakdown maintenance and not preventive maintenance.
5. Bakery Trays and Trolleys Dumped here and there.

### **CHAPTER 3: REPORT ON PRESENT INVESTIGATION**

As the project is completely based on the factory of Kapil Foods, the priority is to understand the working and strategies employed by the staff for their existing products and market. A deep analysis and study are done to understand the processes involved in production and how the products are handled, and as it should be handled in an ideal situation for a small-scale Bakery Industry.

To center our project on Kapil Foods' factory operations, understanding their current strategies and production processes is pivotal. A comprehensive analysis was undertaken to assess their product lineup and market position, aiming to pinpoint avenues for growth in the bakery industry.

Initiating our project, a Google form market survey was conducted to gauge demand and preferences for bakery products in the tri-city area. This survey sought to uncover customer needs, particularly amidst Kapil Foods' limited visibility.

The following questions were asked-

#### Section 1-General Information

1. Where do you reside?
  - Hanamkonda
  - Kazipet
  - Warangal
2. How often do you buy bakery products?
  - Daily
  - Weekly
  - Monthly
  - Rarely
3. Have you heard of Kapil Foods? If yes, please mention the product(s) you have tried?
4. What is your age?
5. What is your occupation?
6. Where do you usually buy bakery products?
  - Online
  - Local bakery
  - Supermarket



## Section 2-Product Feedback

1. What are your favorite bakery products available in Warangal?
  - Biscuits
  - Puffs
  - Breads
  - Donuts
  - Plum Cakes
  - Pastries
  - Cupcakes
  - Sponge Cakes
  - Fruit/Cream rolls
  - Others (Please specify)
2. Do you have favorite bakeries in Warangal? If yes, what do you like about their products?
3. On a scale of 1-5, how satisfied are you with the current bakery offerings in Warangal?
  - 1
  - 2
  - 3
  - 4
  - 5
4. What factors influence your purchase decisions?
  - Quality
  - Price
  - Variety
  - Convenience
  - Others (Please specify)

## Section 3-New Product Offerings

1. Would you be interested in trying new bakery products in Warangal? If yes, please suggest what you would like to add to the current offerings?
2. Is there anything you would like to share about your experience with bakery products in Warangal?

## Google form Analysis

Sample Size-97

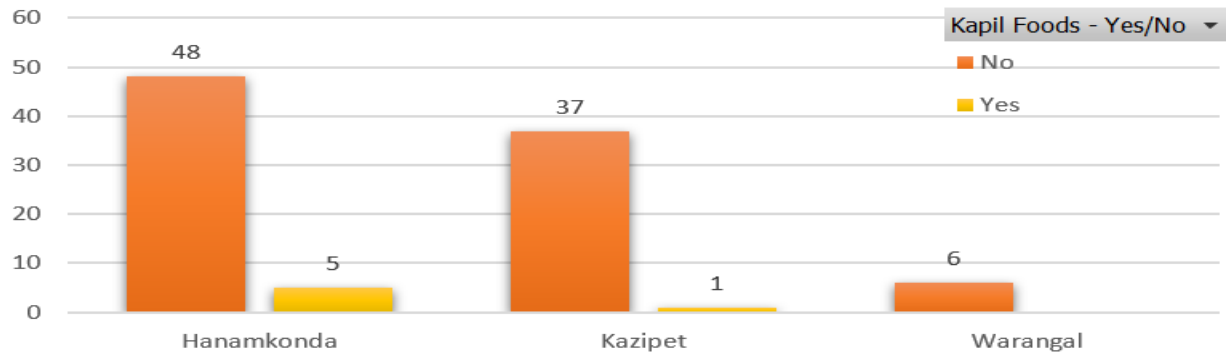
Majority- students from campus from all over India.

1. Main competition-Country Oven

2. Only 6% of people know about Kapil Foods and mainly from Hanamkonda side (more than 50%)
3. 70% of people prefer Local Bakery, 28% prefer Supermarket, 2% prefer online
4. 42% of the people rated the bakery products in general as  $\frac{3}{5}$  (Average is 2.7/5)
5. Top 3 favorite bakery products are-
  - Pastries
  - Puffs
  - Biscuits
6. 48% of population engages with bakery products regularly (weekly+daily)
7. We observed the main purchasing factor is Quality, Price, Variety and lastly Convenience as follows
  - a. 38% Quality
  - b. 31% price
  - c. 16% Variety
  - d. 15% Convenience
8. Suggestions-
  - a. Variety in existing products
  - b. Existing products with better quality especially pastries that are less watery
  - c. Slightly healthy (Better fiber, less fat)
9. Some of the new products customers would like to see are as follows-
  - a. Donuts
  - b. Croissant
  - c. Tarts
  - d. Macarons
  - e. Cheesecakes
  - f. French Desserts
10. Major Complaints-
  - a. Quality and hygiene practices
  - b. Cakes are watery (sugar syrup drips)
  - c. Less authentic cakes available
  - d. Less variety in the region

Count of Kapil Foods - Yes/No

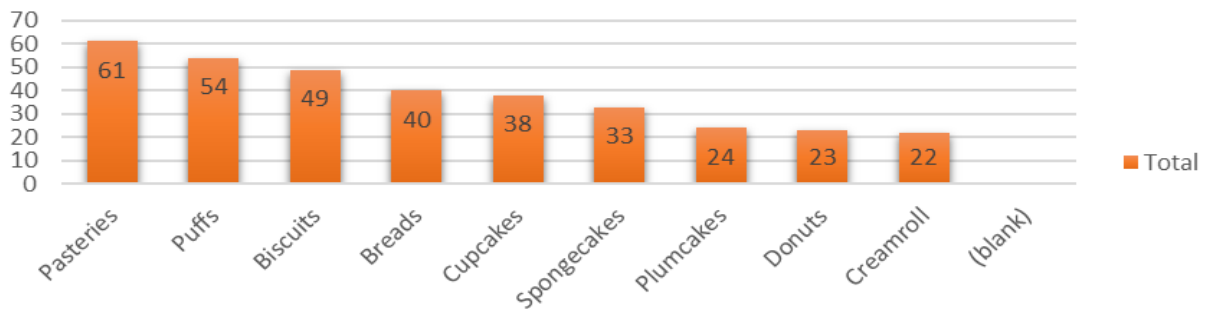
## Customer Knows About Kapil Foods?



Customer Residence

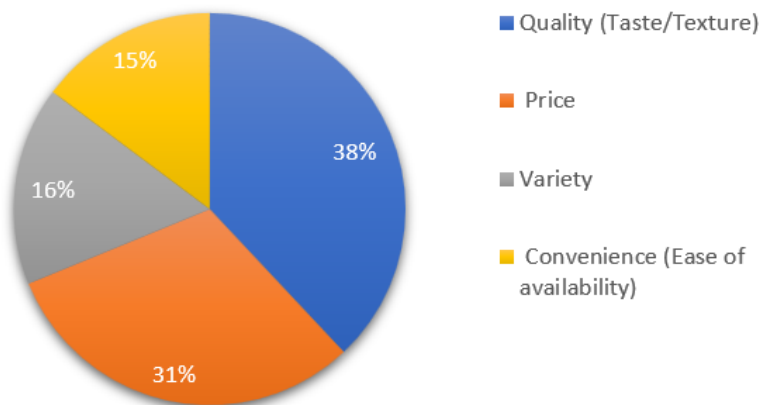
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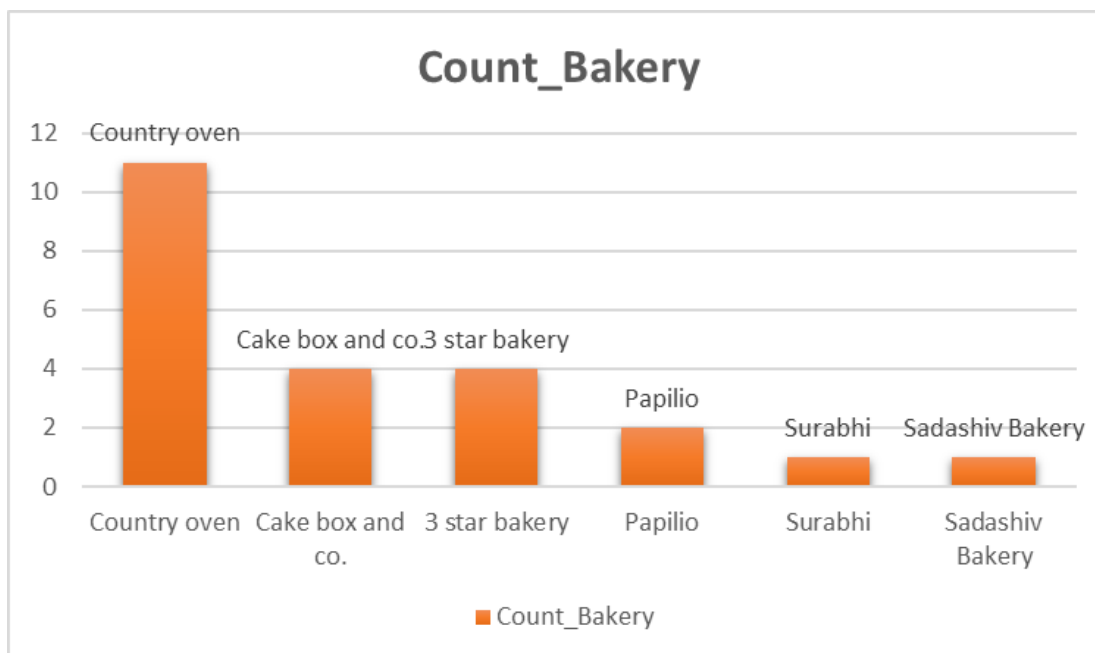
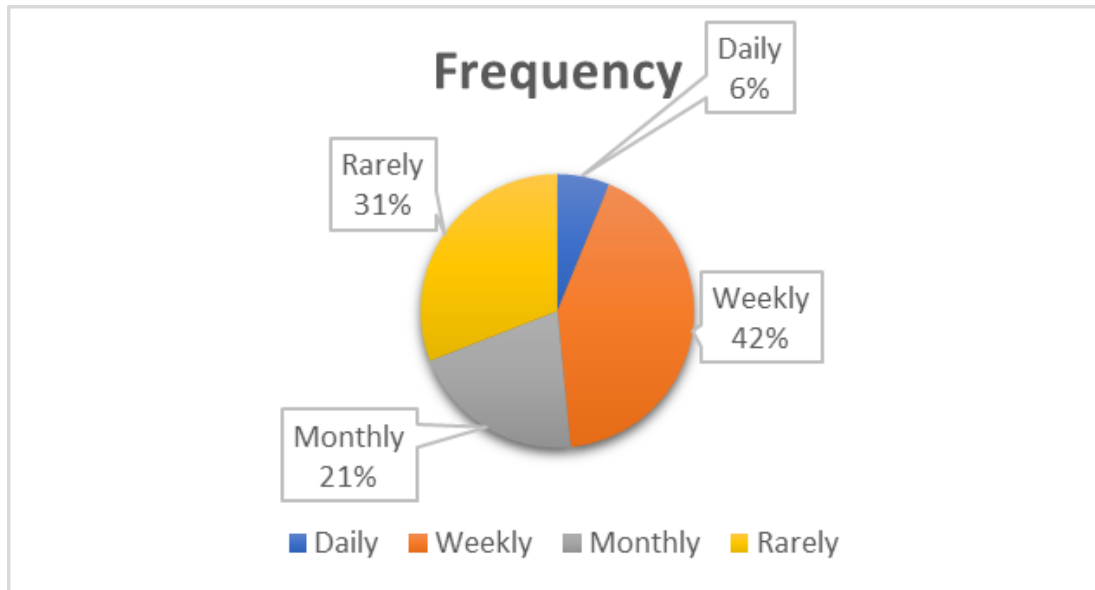
## Favrouite Bakery Product

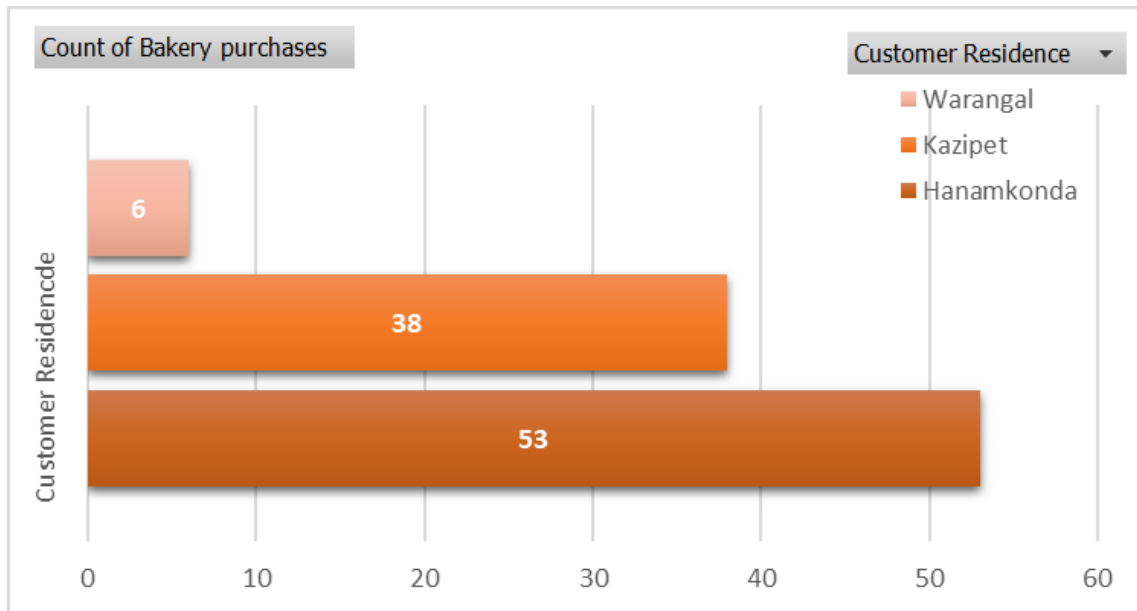


Favourite

## Purchasing Factor







Following this, a SWOT analysis provided insights into the company's strengths, weaknesses, opportunities, and threats, guiding our strategic direction.

### SWOT Analysis

| STRENGTHS  | WEAKNESS  |
|--|---|
| <ul style="list-style-type: none"> <li>● Niche field</li> <li>● Technical knowhow</li> <li>● Pocket friendly</li> <li>● Fixed clientele</li> <li>● Distributions costs are less (because they operate in small area)</li> <li>● Outlet in highway addresses travelers</li> </ul> | <ul style="list-style-type: none"> <li>● Not easily available in local bakery/supermarket</li> <li>● Poor marketing</li> <li>● Poor machinery</li> <li>● Lack of skilled laborers</li> <li>● Lack of standardization</li> <li>● Improper hygiene</li> </ul> |

| OPPORTUNITIES   | THREATS   |
|---|---|
| <ul style="list-style-type: none"> <li>● Improve quality to target upper middle class</li> <li>● Better branding by attractive labeling</li> <li>● Can cater to large customer base</li> <li>● Explore healthier options like wheat bread/ sugar free etc.</li> <li>● Make an online presence</li> <li>● Make an outlet, supply in colleges like NIT or nearby</li> </ul> | <ul style="list-style-type: none"> <li>● Competition by country oven/ nearby bakeries/bigger players due to lack of expanding</li> <li>● Lack of working capital</li> <li>● Lack of plans to address seasonal fluctuations</li> </ul> |

Additionally, a competitor analysis benchmarked Kapil Foods against industry peers, identifying areas for differentiation and potential improvements.

### Competitor Analysis

#### 1. Cake box

##### Pros:

- Value for money
- Good variety of premium desserts
- Brand value
- Prominent location
- Joint publicity with biryanis and more gives them an advantage in sharing the target audience
- Separate decoration and orders available for special occasions
- Good ambience

##### Cons

- Available only for takeaway or dine in (no online orders on Swiggy or Zomato)
- Expensive
- No daily products like bread, puff (provided by our client i.e. Kapil)
- Only one outlet, i.e., in Hanamkonda

Cakebox is a dessert-oriented outlet which primarily sells baked sweets like cakes, pastries and various other sweet delicacies. **Whereas, Kapil foods, targeting the budget friendly audience with minimal but daily use products along with lesser variety of desserts in the product mix.**

#### 2. Country Oven

- Similar product mix but cater to more fast-food options
  - Better quality and taste
- For e.g.) Pastries are not watery, puffs are more tasty

- Outlets in prominent locations to attract customers
- Online presence like Swiggy, Zomato
- Caters to diverse needs like daily as well as special occasions
- Branches in other parts of Telangana makes it widely recognized
- Targets similar clientele (local, middle class, students) as Kapil's but is more well known
- Similar pricing but well known due to better online and offline presence.
- More staff

### 3. Mithaiwala

- Huge product mix
- Better quality and taste
- Outlets in prominent locations to attract customers
- Caters to diverse needs like daily as well as special occasions
- Targets similar clientele as well as upper middle class.
- Outlet in prominent location
- More staff

We also conducted on-site visits to nearby bakeries, gaining firsthand insights into industry practices and customer interactions.

## **Bakery Surveys**

### Cups n Bakers

- Clean
- Cater mainly fast food and bakeries but huge product mix
- Lacks a bustling vibe
- Could use a maintenance
- More family customers than students
- Best Sellers-cake pizza burger

### Surabhi

- Product mix like Kapil and extras are Manchurians, Pizza, Juices, Milkshakes
- Making the store look nicer could help bring in more customers and make them want to stay longer.
- More family customers than students
- More online deliveries than dine in

### QFDs for various products:

16







| Product    | Customer's most important requirement | Which does better? Kapil or competitor? | Which aspect Kapil is doing best? (Customer req) | Where can Kapil improve? (Customer req) | Which aspect Kapil is doing best? (Technical req) | Where can Kapil improve? (Technical req) |
|------------|---------------------------------------|---|--|---|---|--|
| Bread      | Texture preference                    | Competitor (Local Store)                | Freshness  | Accessibility                           | Flavor  | Baking time and temp                     |
|            | Freshness                             | Competitor (Local Store)                | Allergen sensitivity                             | Packaging                               | Size  | Moisture content                         |
|            | Accessibility                         | Competitor (Local Store)                | Price  | Texture                                 | Allergen sensitivity                              |  |
|            | Flavor                                | Competitor (Local Store)                |  | Flavor                                  |   |  |
| Puff       | Texture                               | Competitor (Country oven)               | Price Sensitivity                                | Accessibility                           | Flakiness   | Uniform Size                             |
|            | Freshness                             | Competitor (Mithai Wala)                | Flavor   | Packaging preferences                   | Cost Efficient                                    | Shelf Life                               |
|            | Accessibility                         | Competitor (Country Oven)               | Freshness  | Size and Shape                          |   |  |
|            | Flavor                                |   |  |   |   |  |
| Biscuits   | Texture preference                    | Competitor (Local Store)                | Size and Shape                                   | Flavor                                  | Thickness   | Ingredient preferences                   |
|            | Flavor                                | Competitor (Local Store)                | Price  | Packaging                               | Uniformity in size                                | Crunchiness                              |
|            | Size and Shape                        | Kapil                                   | Allergen sensitivity                             | Accessibility and Availability          | Shelf life  |  |
|            | Accessibility and Availability        | Competitor (Local Store)                |  |   |   |  |
| Cream roll | Flavor                                | Competitor (Local Store)                | Freshness  | Accessibility                           | Flavor stability                                  | Packaging                                |

|          |                    |                          |                      |                                |                  |                            |
|----------|--------------------|--------------------------|----------------------|--------------------------------|------------------|----------------------------|
|          | Price              | Kapil                    | Price                | Visual appeal                  | Allergen control | Texture                    |
|          | Texture            | Both equal               | Portion Size         | Packaging                      | Cost efficiency  |                            |
|          | Freshness          | Kapil                    |                      | Flavor variety                 |                  |                            |
| Pastries | Texture and Flavor | Competitor (Local Store) | Price                | Flavor and Freshness           | Cost Efficiency  | Freshness retention        |
|          | Freshness          | Competitor (Local Store) | Allergen sensitivity | Accessibility and Availability | Allergen control | Ingredient quality control |
|          | Presentation       | Competitor (Local Store) |                      | Presentation                   |                  |                            |
|          | Variety            | Competitor (Local Store) |                      |                                |                  |                            |

## CHAPTER 4: RESULT AND DISCUSSION

Our study embarks on a multifaceted journey delving deep into Kapil Foods' operational landscape, guided by meticulous market projections, insights from Quality Function Deployment (QFD), and a strategic framework outlining short and long-term goals. Grounded in robust data analyses, our examination is poised to furnish Kapil Foods with a strategic blueprint primed for market ascendancy. By synthesizing consumer preferences gleaned from market projections with operational enhancements outlined in QFD insights, our recommendations endeavor to position Kapil Foods as a beacon of excellence within the bakery industry. From bolstering online presence to enhancing product quality and diversification, our strategic roadmap offers a comprehensive framework for Kapil Foods' evolution and sustained success.

### →QFD Insights

- a. Make biscuits healthier by using artificial sweeteners like stevia instead of refined sugar, more fiber content, less trans-fat.
- b. Have a consistent recipe to have flavor stability for all batches of a product.
- c. Enable temperature control for longer shelf life and better texture, flavor and moisture retention.
- d. Improve the accessibility and visibility of the product to citizens by proper branding and distributing to more local and super markets.
- e. Incorporate regular quality control measures for the products.

### →Short time Goals

- 1) Build online presence
  - a) Establish an online presence through e-commerce platforms to enhance accessibility and consumer engagement.
  - b) Invest in website development and digital marketing strategies to facilitate online ordering and promotion.
- 2) Quality Enhancement by addressing hygiene issues
  - a) Implement rigorous hygiene protocols to ensure food safety and customer satisfaction.
  - b) Allocate funds for monthly cleaning services and hygiene maintenance.
  - c) Train staff on hygiene practices and monitor compliance regularly.
- 3) Upgrade infrastructure
  - a) Invest in modern bakery equipment like cooling machines, ovens, and slicers for improved efficiency.

- b) Assess the costs and benefits of various upgrade options and prioritize based on ROI.
  - c) Allocate budget for equipment purchase, installation, and maintenance.
- 4) Standardization of the ingredients used in each batch
  - a) Develop standardized recipes and ingredient lists to ensure consistent product quality.
  - b) Source high-quality ingredients from reliable suppliers to maintain standards

→Long time Goals

1. Open outlet in prominent locations
  - a. Identify high-traffic areas for new outlet locations and negotiate favorable lease agreements.
  - b. Allocate budget for rent, utilities, and initial setup costs.
  - c. Conduct market research to understand customer preferences and tailor offerings accordingly.
2. Product Diversification
  - a. Expand product range to cater to diverse customer tastes and preferences.
  - b. Introduce new items like pastries, donuts, pizza, and burgers to attract a wider audience.
  - c. Allocate resources for product development, testing, and marketing.
3. Healthier Options:
  - a. Respond to growing demand for healthier alternatives by offering options like whole wheat bread and sugar-free pastries.
  - b. Invest in sourcing quality ingredients and developing recipes that meet health-conscious consumers' needs.
4. Invest in branding and packaging
  - a. Enhance brand identity through attractive packaging and branding initiatives.
5. Market Expansion- To target new customer segment
  - a. Explore opportunities to expand into new geographic markets or target new customer segments.
  - b. Allocate resources for market research, expansion planning, and promotional activities.
  - c. Develop strategies to penetrate new markets effectively and establish a strong foothold.

6. Can utilize Machine Learning to forecast sales/demand which helps in better planning and inventory management.
  - a. Implement machine learning algorithms to analyze sales data and forecast demand accurately.
7. Introducing the 5S methodology into Kapil Foods presents an opportunity to revolutionize bakery operations by instilling principles of efficiency, organization, and cleanliness. The 5S framework, encompassing Sort, Set in Order, Shine, Standardize, and Sustain, offers a systematic approach to optimize workspace layout, streamline processes, and enhance overall productivity.
  - a. Sort (Seiri):
    - b. Identify and remove unnecessary items from the bakery workspace.
    - c. Dispose of expired ingredients, unused equipment, and clutter.
    - d. Optimize space and improve workflow efficiency by decluttering.
  - e. Set in Order (Seiton):
    - f. Arrange essential items systematically to ensure easy accessibility.
    - g. Designate storage areas for bakery trays, tools, and ingredients.
    - h. Implement proper labeling and organization to minimize search time.
  - i. Shine (Seiso):
    - j. Emphasize cleanliness and regular maintenance of work surfaces, equipment, and storage areas.
    - k. Encourage employees to clean and sanitize workspaces regularly.
    - l. Create a hygienic environment conducive to food safety and quality.
  - m. Standardize (Seiketsu):
    - n. Develop standardized work practices and protocols for cleaning, maintenance, and inventory management.
    - o. Ensure consistent implementation of standards across bakery operations.
    - p. Facilitate continuous improvement through standardized procedures.
  - q. Sustain (Shitsuke):
    - r. Maintain momentum by embedding the 5S culture into daily routines and organizational processes.
    - s. Provide ongoing training and education on 5S principles.
    - t. Conduct regular audits and feedback mechanisms to monitor adherence and identify areas for improvement.
    - u. Encourage employee engagement and ownership of 5S practices for sustained results.

## →Sales Projections

Introducing sales projections is essential to forecast demand accurately, enabling Kapil Foods to align production with consumer preferences and market trends. By analyzing past sales data, market surveys, and competitor analysis, these projections aim to provide insights into potential customer demand, helping Kapil Foods optimize inventory management, production planning, and resource allocation. With a clear understanding of anticipated sales volumes, Kapil Foods can make informed decisions to meet customer needs efficiently while minimizing wastage and maximizing profitability.

- Bread: With a projected market penetration of 50%, Kapil Foods can anticipate reaching approximately 500,000 consumers in the target population.
- Puffs: Projected to achieve a market penetration of 48%, Kapil Foods can expect to capture the interest of around 480,000 consumers.
- Pastries: Anticipating a market penetration of 37%, Kapil Foods stands to attract approximately 370,000 consumers.
- Donuts: With a projected market penetration of 22%, Kapil Foods can target an estimated 220,000 consumers.
- Cream Rolls: Projected market penetration of 5% indicates a potential consumer base of 50,000 for Kapil Foods.
- Biscuits: Projected to achieve a market penetration of 45%, Kapil Foods can potentially reach 450,000 consumers.

Hence, our recommendations provide Kapil Foods with a strategic blueprint for success in the bakery industry. By aligning market projections and Quality Function Deployment insights, Kapil Foods can enhance its market position and drive growth. From short-term quality enhancements to long-term market expansion, these recommendations pave the way for Kapil Foods to thrive and lead in the competitive landscape.



## CHAPTER 5: SUMMARY AND CONCLUSION

In this final chapter, we synthesize the findings and recommendations derived from our extensive analysis of Kapil Foods' operations and market dynamics. We delve into the costs associated with various strategic initiatives, ranging from enhancing product quality to expanding market reach. Additionally, we present an updated product mix, reflecting our proposed changes and innovations aimed at meeting evolving consumer preferences. Through this comprehensive overview, we aim to provide actionable insights and strategic direction to propel Kapil Foods towards sustainable growth and success in the competitive bakery industry.

Key insights highlight the need for quality improvement at Kapil Foods. This entails implementing strict hygiene protocols, standardizing ingredients, and ensuring consistent quality control. Moreover, upgrading bakery equipment and infrastructure will boost efficiency and meet changing consumer demands.

### →QFD Insights

1. Enhance biscuit healthiness with stevia, fiber, and less trans-fat.
2. Maintain recipe consistency for stable flavors.
3. Improve temperature control for better texture and shelf life.
4. Boost product visibility through branding and wider distribution.
5. Ensure consistent quality through regular checks.

Our short-term goals focus on immediate actions to establish an online presence, enhance hygiene standards, and upgrade infrastructure. These initiatives are essential for laying the foundation for long-term success and ensuring Kapil Foods remains competitive in the digital age. Furthermore, our long-term goals emphasize the importance of product diversification, market expansion, and brand building to sustain growth and capture new opportunities in the bakery industry.

### →Short-term Goals

- Establish an online presence.
- Enhance hygiene protocols.
- Upgrade bakery infrastructure.
- Standardize ingredient usage.

## →Long-term Goals

1. Open outlets in prominent locations.
2. Expand product range.
3. Offer healthier options.
4. Invest in branding and packaging.
5. Explore market expansion opportunities.

## →Financial Analysis

Cost considerations play a significant role in our recommendations, with detailed analyses of the expenses associated with building an online presence, upgrading infrastructure, and implementing product recommendations. By understanding the financial implications of each strategic initiative, Kapil Foods can make informed decisions that optimize resource allocation and maximize returns on investment.

1. Cost Associated with Building Online Presence:
  - For every order, the amount payable to Swiggy ranges from 15% to 25% of the order cost, plus GST.
2. Cost Associated with Quality Enhancement by Addressing Hygiene Issues:
  - Monthly cost ranges from Rs. 10,000 to Rs. 12,000.
3. Cost Associated with Upgrading Infrastructure:
  - Cooling machine: Rs. 1,00,000
  - Oven: Rs. 2,00,000 to Rs. 3,00,000
  - Slicer: Rs. 50,000
  - High-speed slicer: Rs. 2,00,000 to Rs. 3,00,000
4. Cost Associated with Opening Outlet in Prominent Locations (Long Term):
  - Rent: Rs. 50,000 to Rs. 60,000
  - Labor: Rs. 30,000
  - Bakery cabinet: Rs. 10,000 per foot
  - Miscellaneous furniture: Rs. 20,000 to Rs. 25,000
5. Cost Associated with Product Recommendation (Chocolate and Butterscotch Pastry):
  - Ingredients cost: Rs. 15 per Pastry
  - Packaging cost: Rs. 2 per Pastry
  - Direct labor cost: Rs. 8 per Pastry
6. Break-even Analysis for Donuts:
  - Selling price per pastry: Rs. 55
  - Total variable cost per Pastry: Rs. 25
  - Break-even point (BEP): 2667 Pastries
7. Cost Associated with Implementing Healthier Alternatives:
  - Use of stevia: Rs. 1100 per kilogram

- Hiring freelance designers for packaging: Rs. 20,000 to Rs. 30,000

→Updated Product Mix

Furthermore, we introduce an updated product mix tailored to cater to diverse consumer preferences. This mix includes a variety of bakery items ranging from bread and puffs to pastries and cakes, each carefully selected to align with market demand and consumer trends. By incorporating these changes, Kapil Foods can enhance its product offerings and better meet the needs of its target audience.

|                |                |                  |                     |
|----------------|----------------|------------------|---------------------|
| Bread          | Veg puff       | Egg puff         | Chicken puff        |
| Dilpasand      | Cream buns     | Donuts           | Plum Cakes          |
| Sponge Cakes   | Cupcake        | Chocolate Pastry | Butterscotch Pastry |
| Fruit rolls    | Cream rolls    | Jeera Biscuits   | Jam Biscuits        |
| Sweet Biscuits | Birthday Cakes |                  |                     |

In conclusion, our holistic approach to analyzing Kapil Foods' operations and market landscape equips the company with the necessary insights and strategic guidance to navigate the competitive bakery industry successfully. With a clear understanding of the costs and benefits associated with various strategic initiatives, as well as an updated product mix designed to resonate with consumers, Kapil Foods is well-positioned to achieve sustained growth and success in the ever-evolving market landscape.

## CHAPTER 6: LITERATURE CITED

1. 5S implementation-<https://ijsrst.com/IJSRST184165>
2. [https://wfindia.s3.ap-south-1.amazonaws.com/website\\_imageshi/pdf/1691753266\\_976581521.pdf](https://wfindia.s3.ap-south-1.amazonaws.com/website_imageshi/pdf/1691753266_976581521.pdf)
3. Packaging, Quality Control, and Sanitation of Bakery Products, By Per V. Nielsen  
<https://www.expertmarketresearch.com/reports/indian-bakery-market>
4. Market research and analysis of bakery industry-  
<https://ijcrt.org/papers/IJCRT21X0006.pdf>
5. Detailed Project Report on Establishment of a Bakery Unit by PACS-  
[https://www.ncdc.in/documents/downloads/09180405204.Sample-DPR\\_BAKERY-UNIT.pdf](https://www.ncdc.in/documents/downloads/09180405204.Sample-DPR_BAKERY-UNIT.pdf)
6. Bakery Industry in India <https://www.eiriindia.org/project-report-handbook-bakery-industry-india-with-formulation-technology-2789>
7. Bakery Industry in India: Trends, Challenges, and Promising Opportunities  
<https://www.foodinfotech.com/bakery-industry-in-india-trends-challenges-and-promising-opportunities/>
8. Study on existing bakery industries <https://www.irjet.net/archives/V3/i10/IRJET-V3I1052.pdf>
9. Impact of Consumer Behavior towards Bakery Products  
<https://www.theseus.fi/handle/10024/803858>
10. Importance of appropriate marketing strategies for sustainability of small businesses in a developing country:  
<https://www.emerald.com/insight/content/doi/10.1108/13555850610703272/full/html>
11. <https://metrobi.com/blog/bakery-operations-in-a-typical-day/#:~:text=In%20a%20bakery%2C%20one%20of,fondant%20icing%20or%20exotic%20fruits>
12. <https://bakerpedia.com/processes/bakery-management/>

## **CHAPTER 7: ACKNOWLEDGEMENTS**

Grateful acknowledgment is extended to Kapil Foods for their generous cooperation and assistance during this research endeavor.