IIT Madras, BS degree

# Optimizing Operations and Enhancing Profitability: A Comprehensive Analysis of  Inaya Cakezz

A Presentation for the BDM capstone Project

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# Agenda

- About Inaya Cakezz Shop

- Identified challenges

- Overview of collected Data

- Analysis of challenge

- Interpretation of results

- Recommendations

- Conclusion

## About The Business

- Inaya Cakezz is a B2C retail store located at Sahu Market, Shivsagar, Sasaram.
- The business sells a variety of cakes, including printed and themed cakes, as well as pastries. They also offer various other items such as decoration items, party supplies, chocolates, cookies, and gift packs. However, the majority of their revenue comes from cakes.
- Their bakery products are FSSAI registered, and they focus on making high-quality cakes. The store was established in mid 2021 with an investment of around 5 lakh.
- The main goal of the business is to provide top-quality products and excellent service to customers.
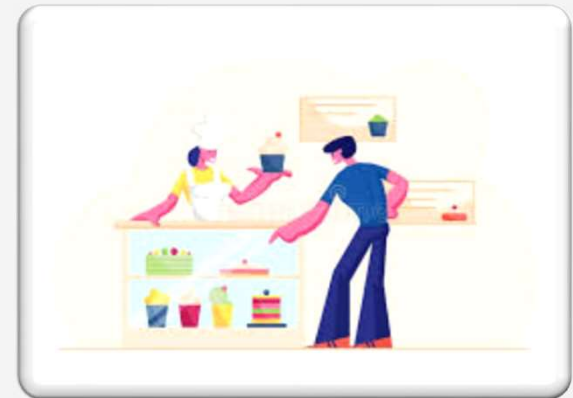
# Identified Challenges



Order
Inconsistency



Inefficient Delivery
Management



Order Fulfillment
Delays

## Collected data:

| SL.No. | Date of Order | Year | Month | Day of Week | Name | Location | Cake Flavour | Cake Size(in kg) | Delivery Time | Cost Price | Selling Price | Pro. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7/19/2021 | 2021 | July | Monday | Ananya Raj | Girdhariya | Chocolate | 1 | 7:00:00 PM | 240 | 480 | 240 |
| 2 | 7/26/2021 | 2021 | July | Monday | Riya Kumari | Shivsagar | Chocolate | 0.5 | 4:00:00 PM | 120 | 250 | 130 |
| 3 | 7/28/2021 | 2021 | July | Wednesday | Jashn-e-Ghadeer | Khurmabad | Chocolate | 2 | 5:00:00 PM | 480 | 950 | 470 |
| 4 | 7/29/2021 | 2021 | July | Thursday | Shadman | Khurmabad | Chocolate | 1 | 12:00:00 PM | 240 | 480 | 240 |
| 5 | 7/30/2021 | 2021 | July | Friday | Shashidev Sharma | Shivsagar | Chocolate | 1 | 5:00:00 PM | 240 | 480 | 240 |
| 6 | 7/31/2021 | 2021 | July | Saturday | Niru | Shivsagar | Chocolate | 3 | | 720 | 1350 | 630 |
| 7 | 7/31/2021 | 2021 | July | Saturday | Piyush | Pakhnari | Chocolate | 1 | 12:00:00 PM | 240 | 480 | 240 |
| 8 | 8/1/2021 | 2021 | Aug | Sunday | Rahul Soni | Shivsagar | Chocolate | 0.5 | 6:00:00 PM | 120 | 250 | 130 |
| 9 | 8/3/2021 | 2021 | Aug | Tuesday | Imadad + Yunus | Shivsagar | Vanilla | 0.5 | 3:00:00 PM | 120 | 250 | 130 |
| 10 | 8/3/2021 | 2021 | Aug | Tuesday | Vivan Babu | Shivsagar | Pineapple | 0.5 | 6:00:00 PM | 120 | 250 | 130 |
| 11 | 8/4/2021 | 2021 | Aug | Wednesday | Aditya | Sikraur | Chocolate | 1 | 6:00:00 PM | 240 | 480 | 240 |
| 12 | 8/4/2021 | 2021 | Aug | Wednesday | Rimee Singh | Bamhaur | Chocolate | 2 | 2:00:00 PM | 480 | 900 | 420 |
| 13 | 8/7/2021 | 2021 | Aug | Saturday | Saloni | Girdhariya | Chocolate | 0.5 | 5:30:00 PM | 120 | 250 | 130 |
| 14 | 8/9/2021 | 2021 | Aug | Monday | Aditya | Rojhain | Strawberry | 2 | 5:00:00 PM | 480 | 900 | 420 |
| 15 | 8/9/2021 | 2021 | Aug | Monday | Ayushi | Shivsagar | Chocolate | 0.5 | 6:00:00 PM | 120 | 250 | 130 |

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Data columns (total 18 columns):
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 2   Year                           1754 non-null   int64
 3   Month                          1754 non-null   object
 4   Day of Week                    1754 non-null   object
 5    Name                          1500 non-null   object
 6   Location                       1753 non-null   object
 7   Cake Flavour                   1754 non-null   object
 8   Cake Size(in kg)               1754 non-null   float64
 9   Delivery Time                  1478 non-null   object
 10  Cost Price                     1754 non-null   int64
 11  Selling Price                  1754 non-null   int64
 12  Profit                         1754 non-null   int64
 13  Profit Margin (%)              1754 non-null   float64
 14  Contact Name                   725 non-null    object
 15  Other Items Ordered with Cake  90 non-null     object
 16  Net Profit                     1754 non-null   int64
 17  ROI                            1754 non-null   float64
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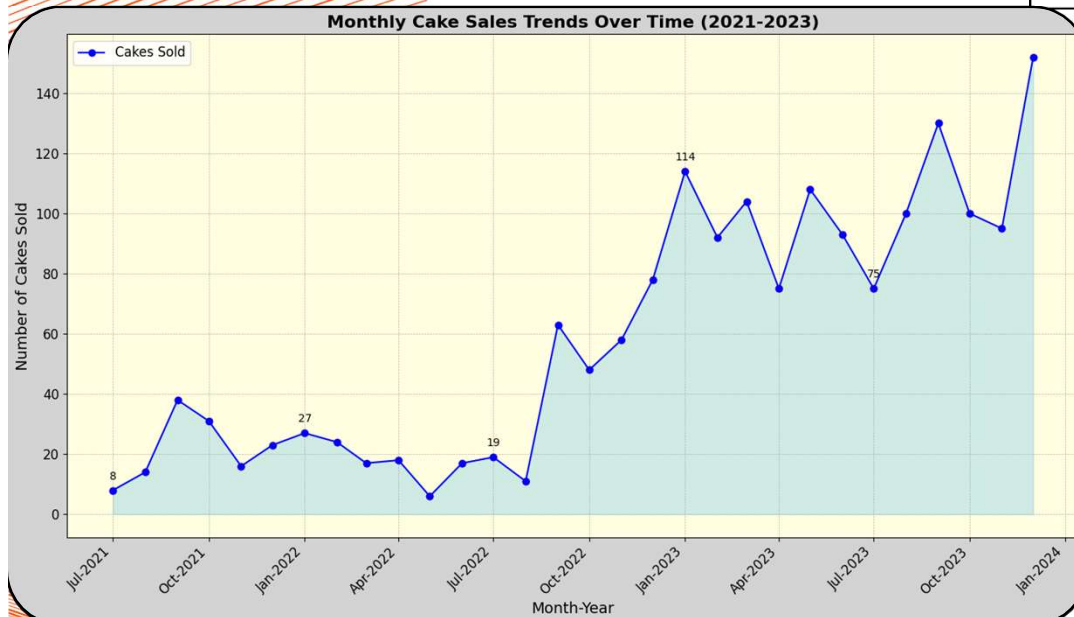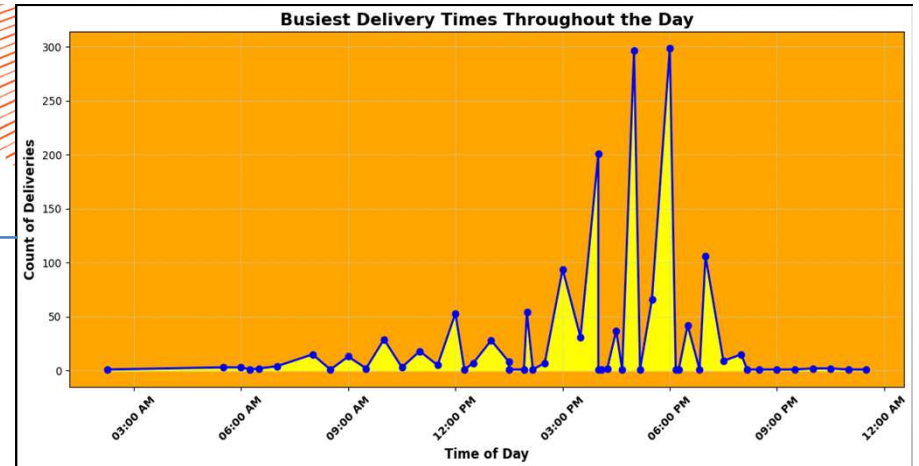
How to Enhance Sales, Increase Profit, and Manage Orders and Delivery Efficiency at Inaya Cakes Shop

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**Sales Trends and Performance Analysis**

High concentration of deliveries between 3 PM and 6 PM, peaking at 6 PM.

Busiest Delivery Times Throughout the Day

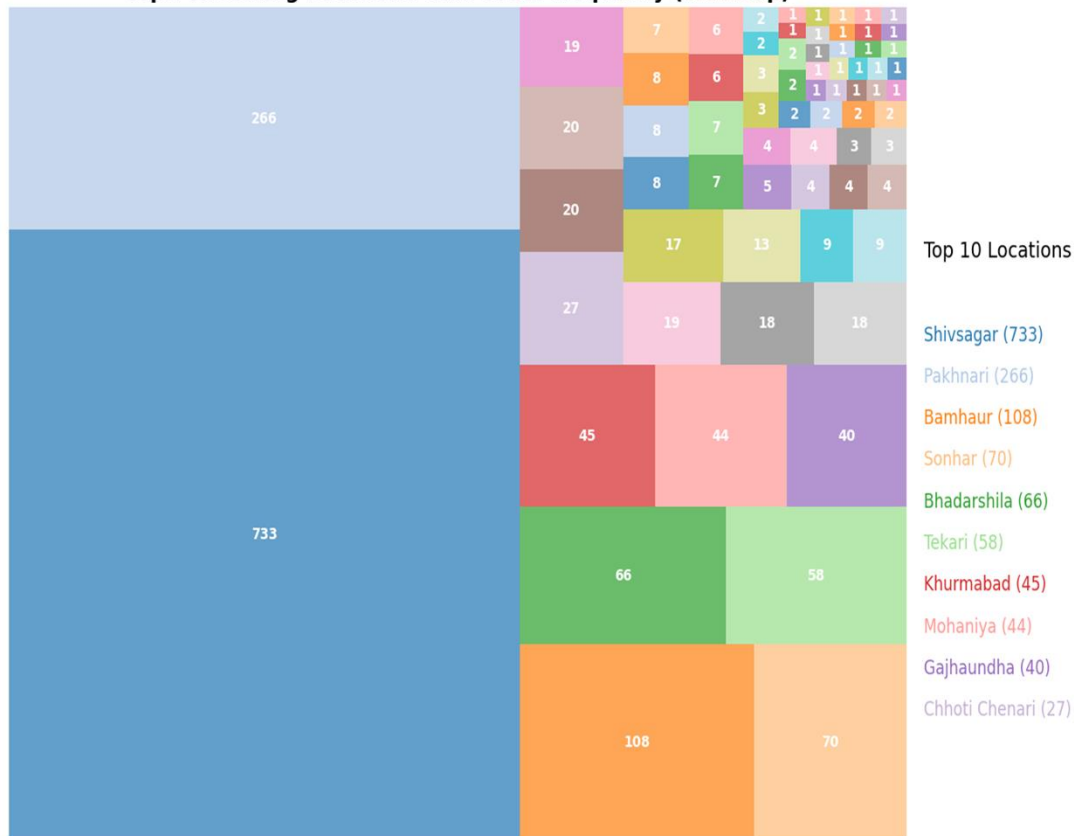Monthly Cake Sales Trends Over Time (2021-2023)

A 206% growth in order volume in 2023 compared to 2022. Seasonal peaks in September and December indicate the impact of festive seasons and promotions. December consistently shows the highest revenue

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**Location Performance Analysis**

**Top Performing Locations with Order frequency (Treemap)**

Top 10 Locations

Shivsagar (733)
Pakhnari (266)
Bamhaur (108)
Sonhar (70)
Bhadarshila (66)
Tekari (58)
Khurmabad (45)
Mohaniya (44)
Gajhaundha (40)
Chhoti Chenari (27)

**High-Performing Locations**

Shivsagar, Pakhnari, and Bamhaur show exceptional sales and customer engagement, indicating strong market presence.

**Moderate Performers**

Sonhar, Bhadarshila, and Tekari need targeted strategies to enhance performance and customer outreach.
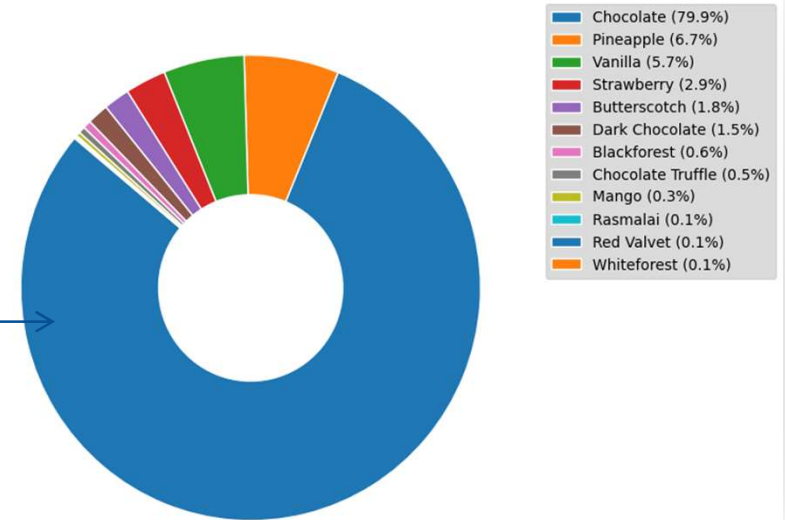
**Low-Performing Areas**

Further investigation is essential to assess market penetration feasibility in low-performing regions.
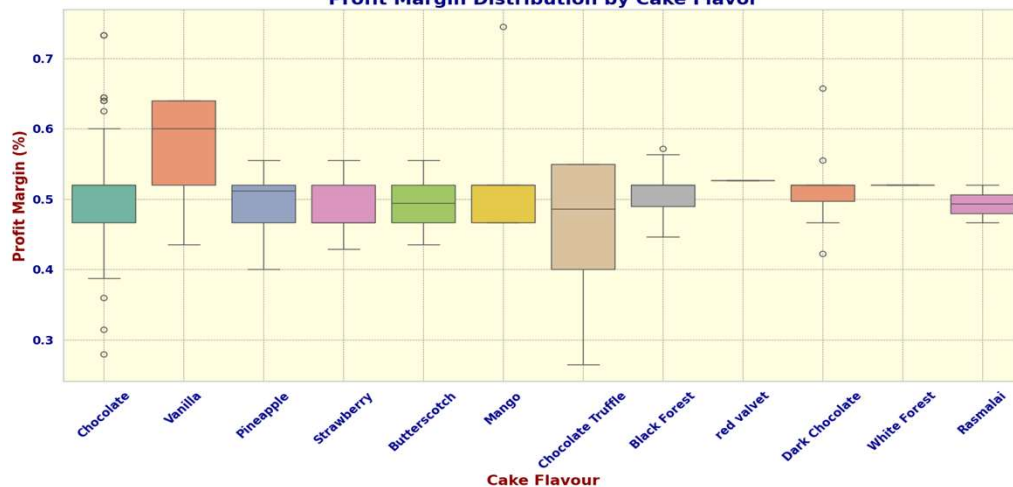
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**Product Performance Analysis**

Chocolate-flavored cakes dominate sales, showcasing a clear customer preference for this flavor.

**Most Popular Cake Flavors**

Chocolate (79.9%)
Pineapple (6.7%)
Vanilla (5.7%)
Strawberry (2.9%)
Butterscotch (1.8%)
Dark Chocolate (1.5%)
Blackforest (0.6%)
Chocolate Truffle (0.5%)
Mango (0.3%)
Rasmalai (0.1%)
Red Valvet (0.1%)
Whiteforest (0.1%)

**Profit Margin Distribution by Cake Flavor**

Profit Margin (%)

Cake Flavour: Chocolate, Vanilla, Pineapple, Strawberry, Butterscotch, Mango, Chocolate Truffle, Black Forest, red valvet, Dark Chocolate, White Forest, Rasmalai

**Highest profit margin**

Vanilla cakes yield the highest profit margin, suggesting potential for increased focus on marketing and promoting this flavor.

# Interpretation of Results

**Sales Growth**:

From July 2021 to December 2023, Inaya Cakezz saw a 206% increase in order volumes, driven by successful promotions and festive sales, especially in September and December.

**Top Performing Products**:

Half-kilogram cakes lead with 58% of total orders, while larger cakes offer higher profit margins. Chocolate remains the most popular flavor (79% of sales), but Vanilla and Mango show higher ROI, presenting opportunities for promotion.

**Customer Demographics**:

High-performing locations like Shivsagar, Pakhnari, and Bamhaur should continue to be the focus of marketing. Sonhar, Bhadarshila, and Tekari like moderate performing locations show potential for growth with targeted strategies, while low-performing areas need further market analysis
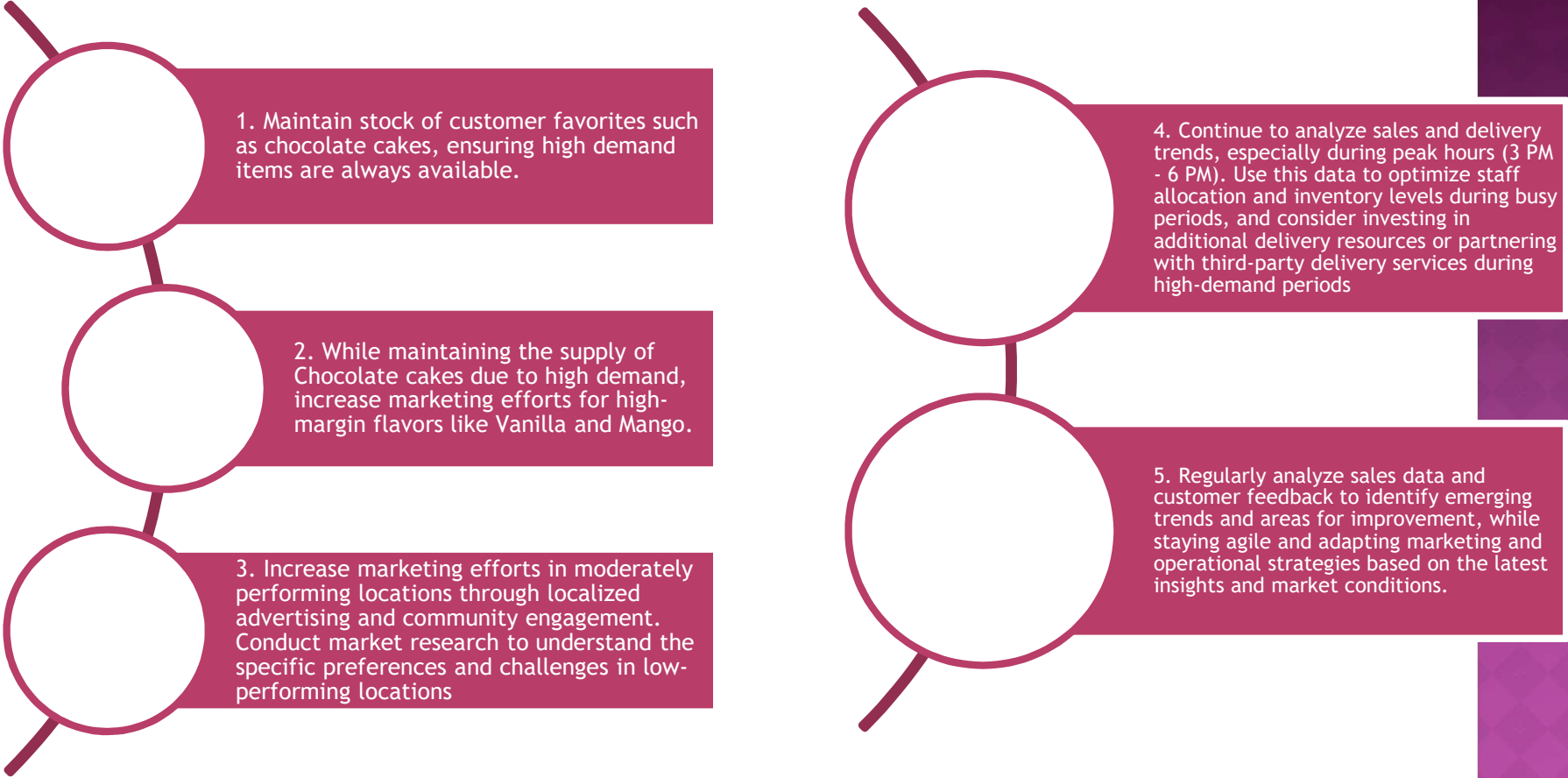
**Delivery Insights**:

Peak delivery times are between 3 PM - 6 PM, with a spike at 6 PM. Optimizing delivery during these hours is critical for maintaining customer satisfaction.

**Financial Performance**:

Strong revenue growth and consistent profit margins from 2021-2023. Vanilla and Mango flavors offer the highest returns, with effective pricing strategies boosting profitability.

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# RECOMMENDATIONS

1. Maintain stock of customer favorites such as chocolate cakes, ensuring high demand items are always available.

2. While maintaining the supply of Chocolate cakes due to high demand, increase marketing efforts for high-margin flavors like Vanilla and Mango.

3. Increase marketing efforts in moderately performing locations through localized advertising and community engagement. Conduct market research to understand the specific preferences and challenges in low-performing locations

4. Continue to analyze sales and delivery trends, especially during peak hours (3 PM - 6 PM). Use this data to optimize staff allocation and inventory levels during busy periods, and consider investing in additional delivery resources or partnering with third-party delivery services during high-demand periods

5. Regularly analyze sales data and customer feedback to identify emerging trends and areas for improvement, while staying agile and adapting marketing and operational strategies based on the latest insights and market conditions.

# Thankyou