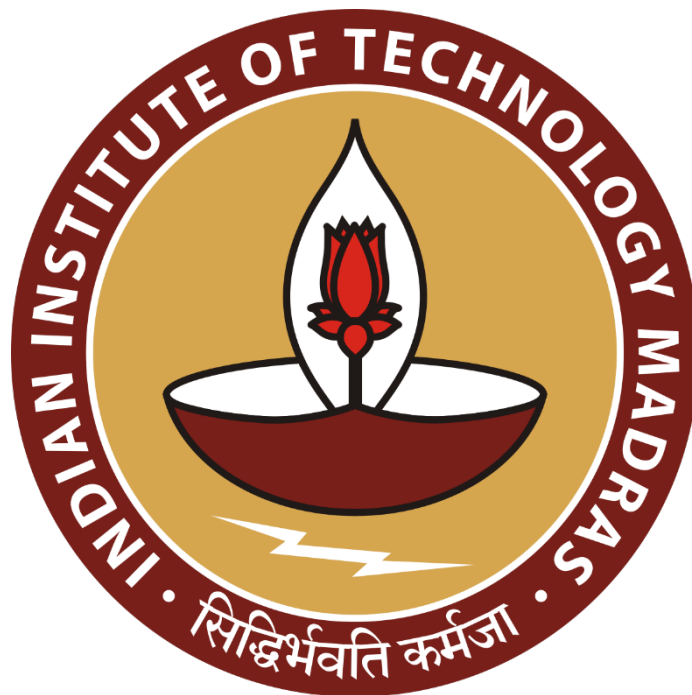# BEAUTIQUE DATA SYNC OPERATION AND INTEGRATION ON BEAUTY PARLOUR AND BOUTIQUE BUSINESS

A Final Report for the BDM Capstone Project

Submitted by

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Contents

1. Executive Summary

The present report titled **"Beautique Data Sync Operation and Integration on Beauty Parlour and Boutique Business"** focuses on implementing data-driven solutions to improve the performance and sustainability of a rural-based beauty parlour and boutique business—**Saini Boutique and Beauty Parlour**, located in **Balapur, Raebareli, Uttar Pradesh**. This dual-service enterprise offers a combination of beauty treatments, including skincare, threading, bridal makeup, waxing, and hair care, along with tailoring services such as blouse sewing, suit fitting, saree pico, and more.

Over the years, despite its reputation for quality service in the local area, the business has faced several critical challenges. Key concerns include:

- **Excessively long customer wait times** are due to a lack of structured appointment scheduling.

- **High churn rates**, with customers seeking alternatives due to delays and a lack of engagement.

- **Product wastage**, when cosmetic items expire due to unsold inventory and low footfall during off-seasons.

This BDM Capstone Project has been developed with the core objective of identifying, quantifying, and resolving these operational inefficiencies through rigorous data collection, analysis, and strategic planning. A primary focus of the project was to establish a robust method of syncing daily transactional data and then applying statistical and visual tools to derive actionable business insights.

Data for this project was collected over three months **(25th January to 25th April 2025)** through collaboration with the shop owner. Despite initial challenges in data availability, a structured recording format was established, and data was successfully captured on service types, frequency, revenue, and cost price.

The overall business revenue during the period was ₹**29,420**, with the majority (63.3%) generated through parlour services, followed by boutique services (31.4%) and cosmetic sales (5.3%). The analysis revealed several important trends, including:

- **Threading** and **blouse sewing** emerged as the most frequently availed services.

- **Bridal makeup packages** created significant revenue spikes on specific days.

- **Cosmetic sales** were minimal, highlighting a need for better inventory planning or marketing.

To address these findings, several targeted strategies are proposed, such as implementing a basic appointment system, optimising service pricing, and boosting customer retention through promotional offers. This project demonstrates how even a small-scale rural business can benefit significantly from structured data analytics and digital operational tools.

The ultimate goal is to enable this business to become more efficient, profitable, and scalable, paving the way for similar ventures in rural India to adopt data-driven growth

2. Methodology

The methodological framework of this project was designed in line with data science best practices and adapted to the context of a micro-enterprise operating in a semi-urban/rural setting. The approach followed a 5-stage process:

2.1 Data Collection & Preliminary Visualisation

The primary data source consisted of handwritten records maintained by the owner of the beauty parlour and boutique. Given the manual nature of operations and limited digital infrastructure, data collection was initially unstructured. However, with consistent effort over weeks, the data was digitised into a standardised spreadsheet, covering:

- Date of transaction

- Type of service (Parlour, Boutique, Cosmetic)

- Quantity availed

- Cost price and selling price

- Profit margins (computed later)

Once the spreadsheet was populated, initial exploratory charts were created using **Google Sheets**, such as pie charts to show revenue share and bar charts for service frequency.

Data link - Data Link

2.2 Data Cleaning and Preparation

Using **Python (Pandas)**, the dataset was imported and cleaned:

- Converted date fields into datetime objects.

- Removed blank rows and handled missing data for days the shop was closed.

- Calculated derived fields like total revenue per day and profit percentage.

- Standardised categories across all service types for consistent analysis.

This preparation was crucial for ensuring data quality and reliability in subsequent analysis steps.

Google Collab link - Google Collab Link

2.3 Exploratory Data Analysis (EDA)

The cleaned data was segmented by service category, and various statistical metrics were computed:

- Total revenue and count per category

- Peak transaction days

- Popular service frequency

- Profit margins across different services

The goal of EDA was to uncover hidden patterns and understand customer behaviour. For example, parlour services had the most engagement, and blouse sewing was dominant in boutique services. Also, a bridal package transaction caused a noticeable revenue spike, indicating a high seasonal impact.

2.4 Advanced Visualisation

Using **Matplotlib** and **Seaborn**, several insightful plots were developed:

- **Daily revenue trend:** Illustrated consistency of income and identified high-revenue days.

- **Profit margin vs. cost/selling price:** Helped understand pricing efficiency.

- **Service frequency charts:** Provided insight into the most and least popular offerings.

- **Revenue breakdowns** per category and sub-category.

One example is the following graph showing the daily revenue trend over three months:
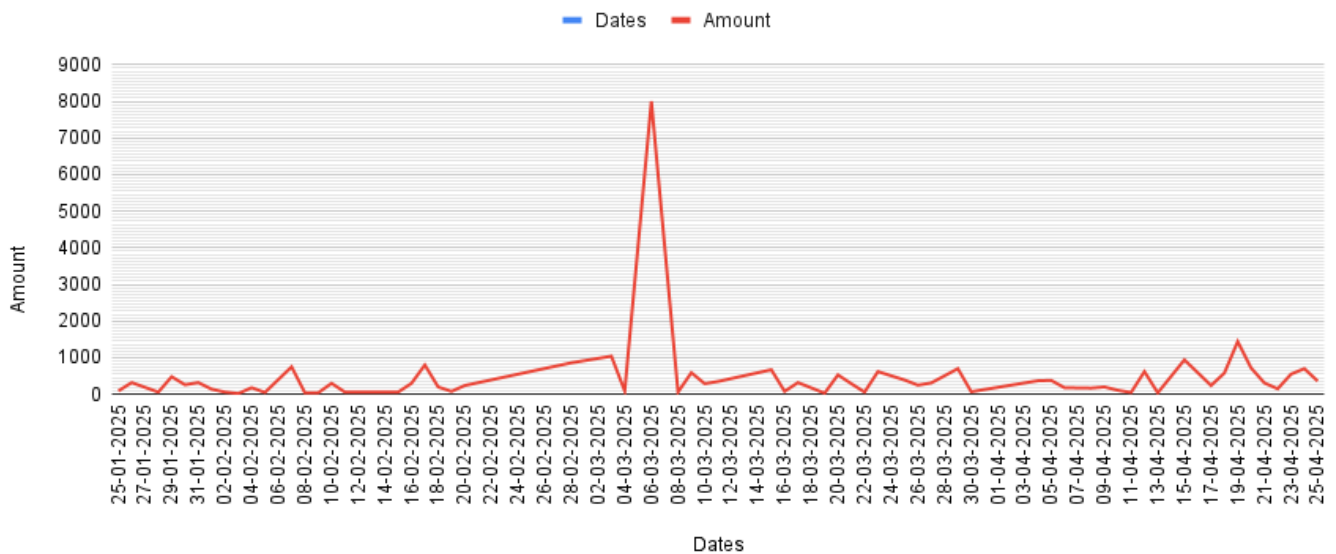
This visual clearly shows how regular income was occasionally boosted by special packages like bridal makeup, which could be leveraged strategically in future promotions.

2.5 Insight Extraction & Recommendations

The final step in the methodology was to derive insights and propose practical actions. These included:

- **Adopting basic appointment scheduling** (via phone or digital calendar).

- **Focusing on high-margin services** like bridal packages during wedding seasons.

- **Reducing inventory losses** by offering small combo kits or discount bundles on cosmetics.

- **Launching referral or loyalty programs** to improve customer retention and reduce churn

3. Results and Findings :

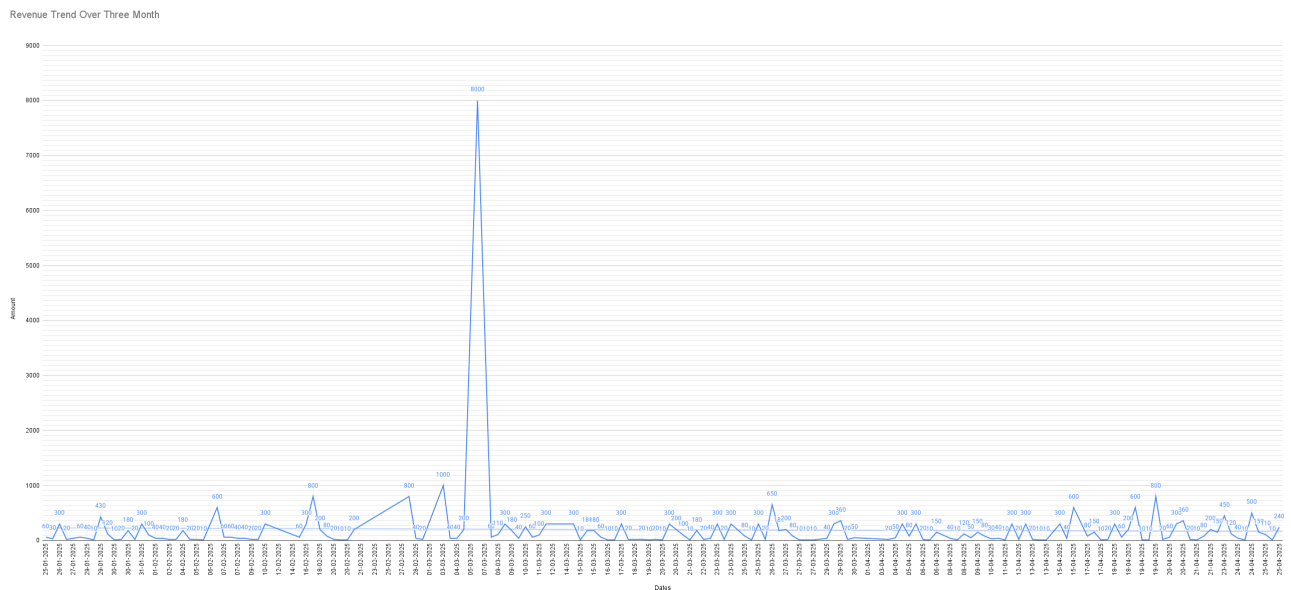1. **Revenue Trend Over Three Months**

Fig. (3.1) Total Revenue Trend over three months.

The revenue trend in Fig. (3.1) shows that the revenue is low to moderate, daily revenue.

And there is one major spike around 01-03-2025 because of the bridal package, otherwise

stable but relatively low day-to-day, which mostly range between ₹50 and ₹800.

Apart from this, Smaller spikes around ₹600–₹800 appear periodically. The chart

indicates that while the business experiences regular income, occasional high-revenue days can significantly impact overall earnings.

2. Revenue Proportion By Service Type
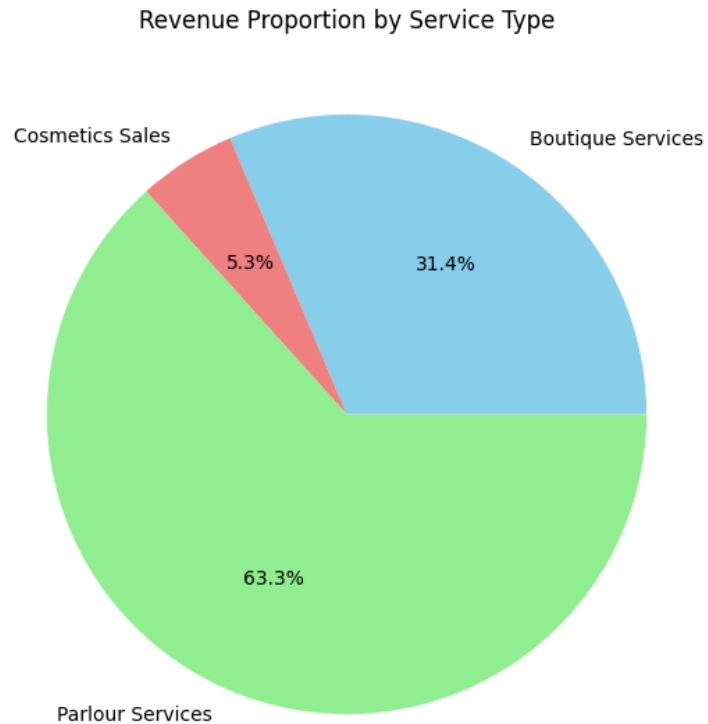
Revenue Proportion by Service Type

Fig. (3.2) Revenue Proportion by Service type observed over three months.

Over the three months, a total of 29420 in total revenue was made, 63.3% of parlour services, 31.4% of boutique services and 5.3% of cosmetic sales

1. Parlour services contribute the highest revenue, and it has the most popular services. As we can see in Fig. (5.1.b), parlour services were the most frequently used.

2. Boutique services were used less frequently but still contributed significantly to the revenue

3. Cosmetic sales had the lowest contribution in terms of revenue and transaction count.
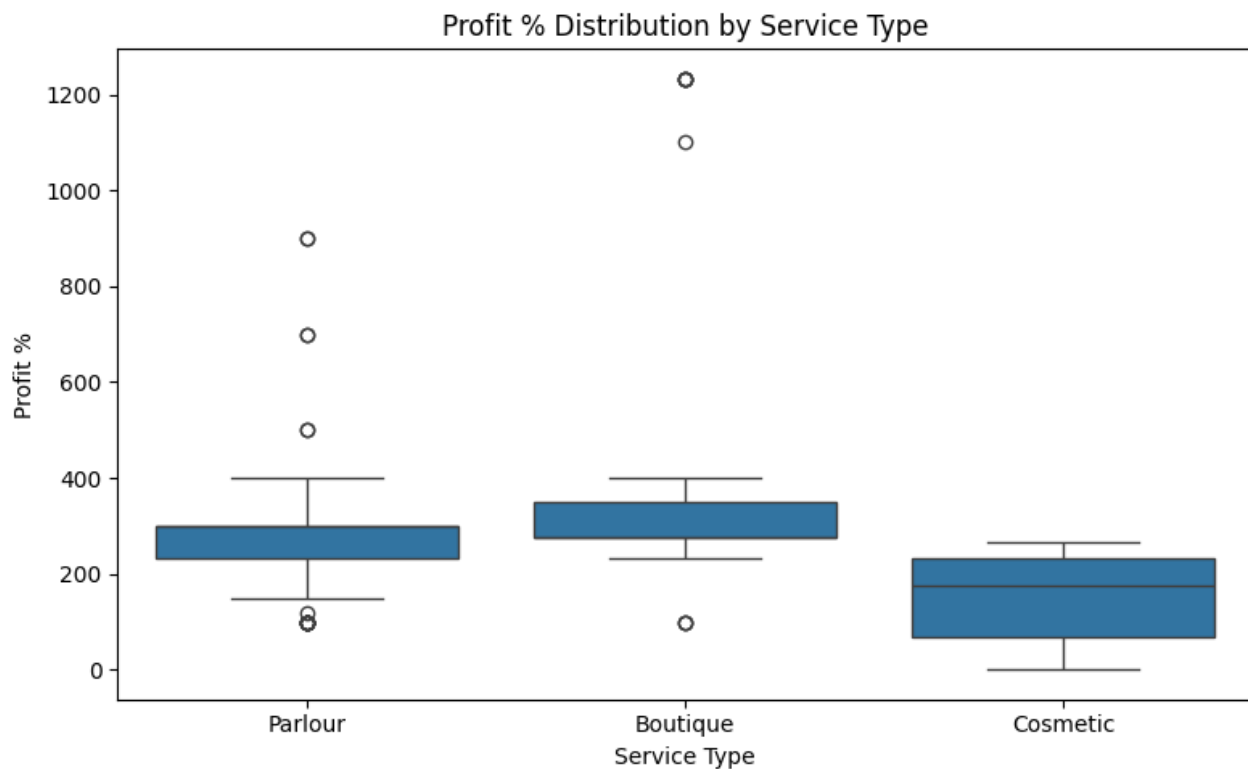
3. Profit % Distribution by Service Type

Fig. (3.3) Profit% Distribution by Service Type.

This box plot illustrates the distribution of profit percentages across different service types—Parlour, Boutique, and Cosmetic.

- Parlour and Boutique services generally maintain a high-profit margin between 200–400%.

- Cosmetic services have lower and more varied margins, sometimes dipping close to zero.

- There are several outliers in both Parlour and Boutique services, showing extreme profitability on special days (e.g., bridal services or bulk tailoring orders).
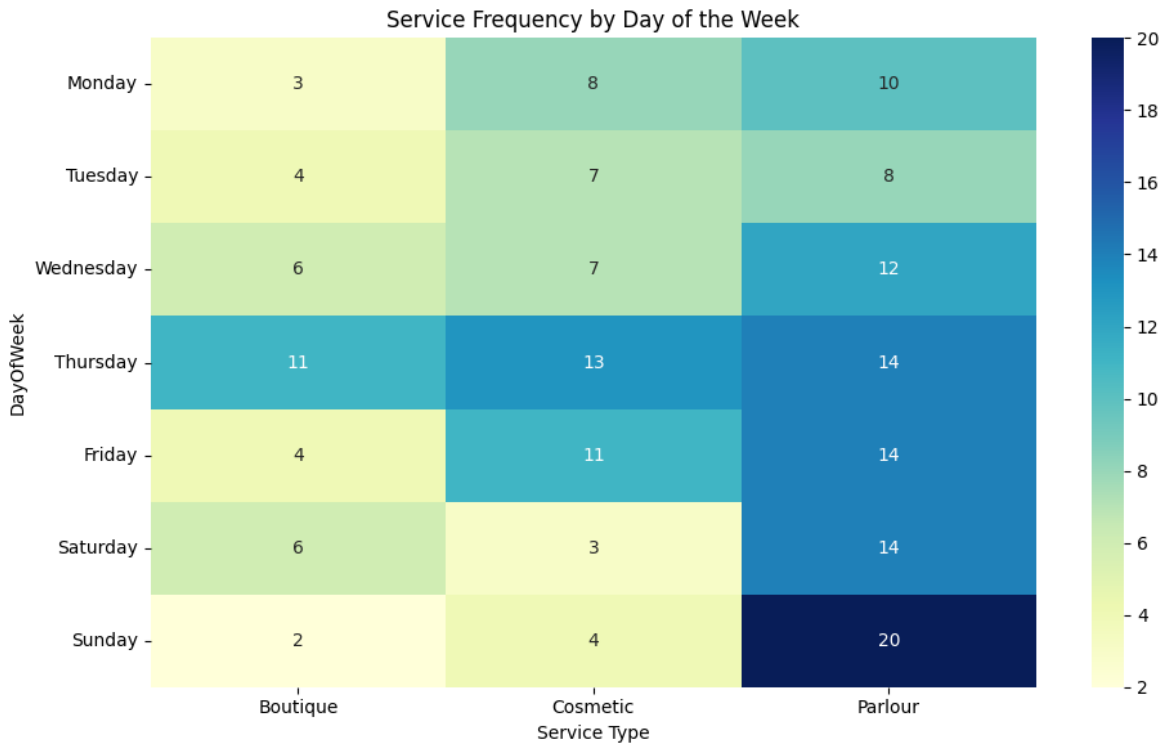
4. Service Frequency by Day of the Week

Fig. (3.4) Service Frequency by Day of the Week

This heatmap shows how frequently each service type is availed throughout the week.

- Sunday and Friday are the busiest days for Parlour services, likely due to customer convenience and weekend grooming needs.

- Thursday shows high activity across all categories—especially Boutique and Cosmetic—suggesting a possible preparation trend before weekend events.

- Saturday sees good engagement in Parlour and Boutique services, though cosmetic sales drop to zero.

- Helps with staffing decisions and inventory readiness based on demand patterns.

5. Top 5 Most Frequent Services
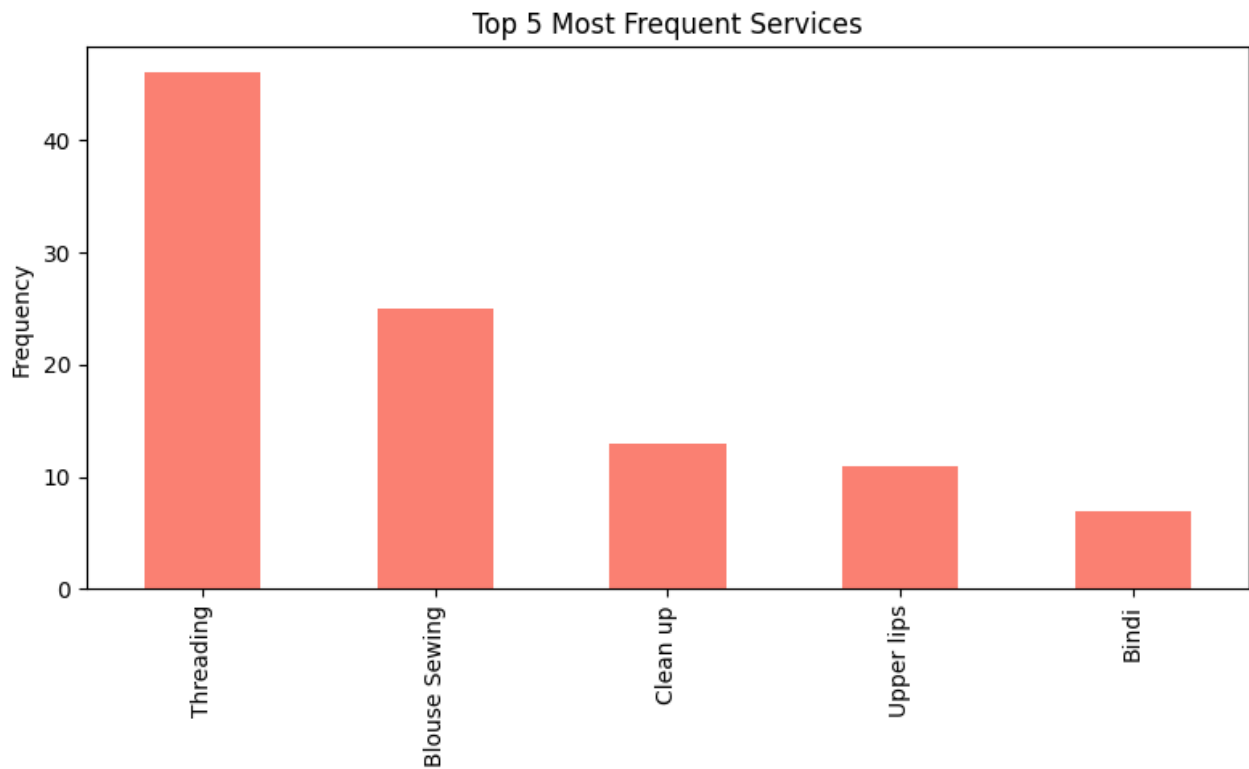
Fig(3.5) Top 5 Most Frequent Services

This bar chart displays the five most commonly availed services across the business.

- Threading dominates as the most frequent service (45+ times), making it a core business driver.

- Blouse sewing leads in boutique services.

- Services like Clean-up, Upper lips, and Bindis are moderate contributors.

- These insights can guide pricing strategies, staff specialisation, and bundled offers.

6. Number of Transactions Per Day
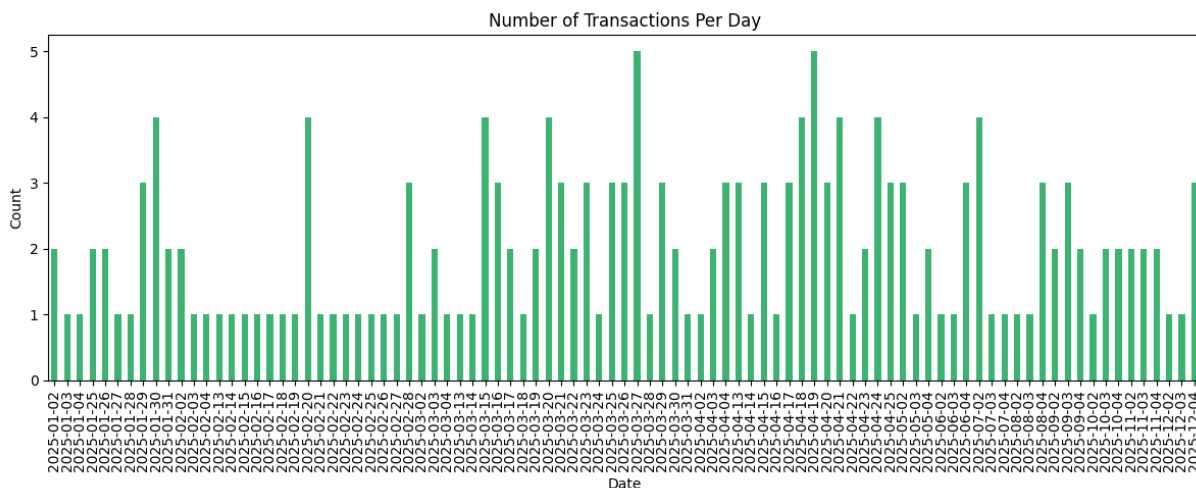
Fig(3.6) Number of Transactions Per Day

This bar chart reflects the number of service transactions that occurred each day during the recorded period.

- Several days see spikes up to 5 transactions, while many fall to 1 or none.

- The pattern highlights inconsistency in daily footfall, with a visible impact on overall profitability.

- Low-transaction days could be addressed via promotions, appointments, or off-peak offers.

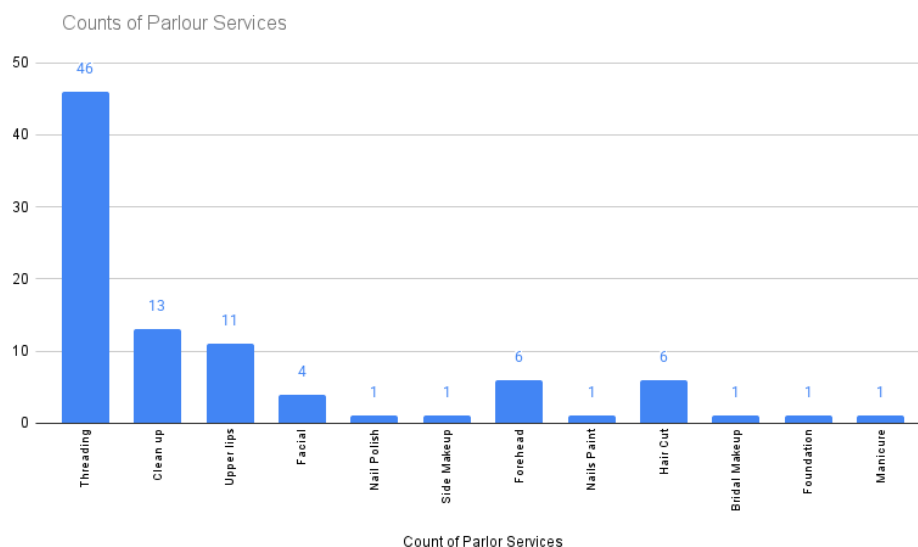**7. Counts of Parlour Service**

Fig. (3.7) Counts of Parlour Service

This figure, Fig. (3.7) shows the Total Number of Counts of parlour services over three months. The bar chart of Parlour Services shows a strong concentration in Threading, with 46 times, far exceeding all other categories. Secondary services such as Cleaning(13 times) and Upper lips(11 times) have significantly fewer occurrences. This skewed distribution highlights that threading is the most commonly used service, Within the parlour SKUs.
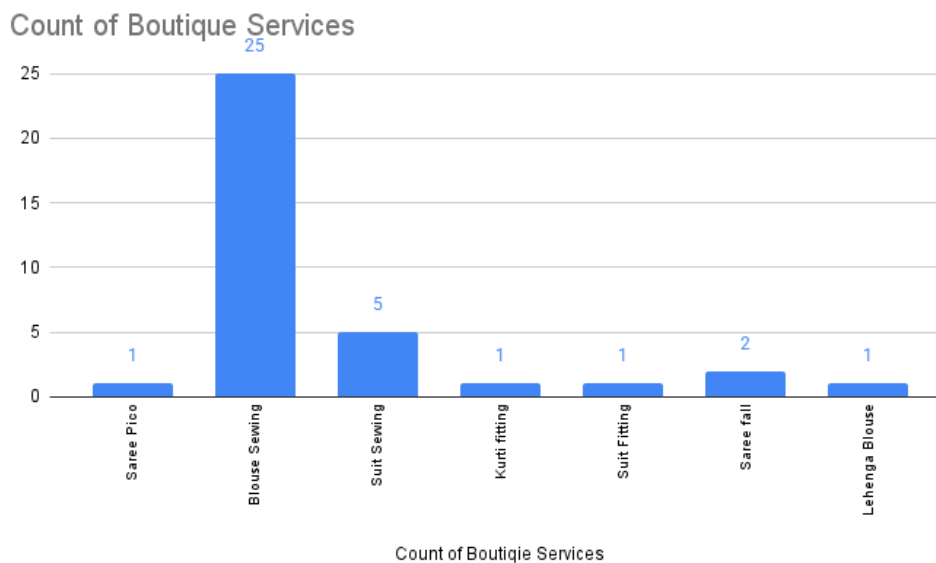
8. Counts of Boutique Services

Fig. (3.8) Total Number of Counts of Boutique services over three months.

The Boutique Services chart is heavily weighted toward Blouse Sewing service, which was recorded 25 times, while other services like Suit Sewing(5 times), Saree Fall(2 times), and Kurti(1 time) have much lower usage. This indicates a high preference or demand for blouse sewing within boutique SKUs. The rest of the services are relatively minimal, supporting the category's smaller share in the overall usage chart.

9. Counts of Cosmetic sales
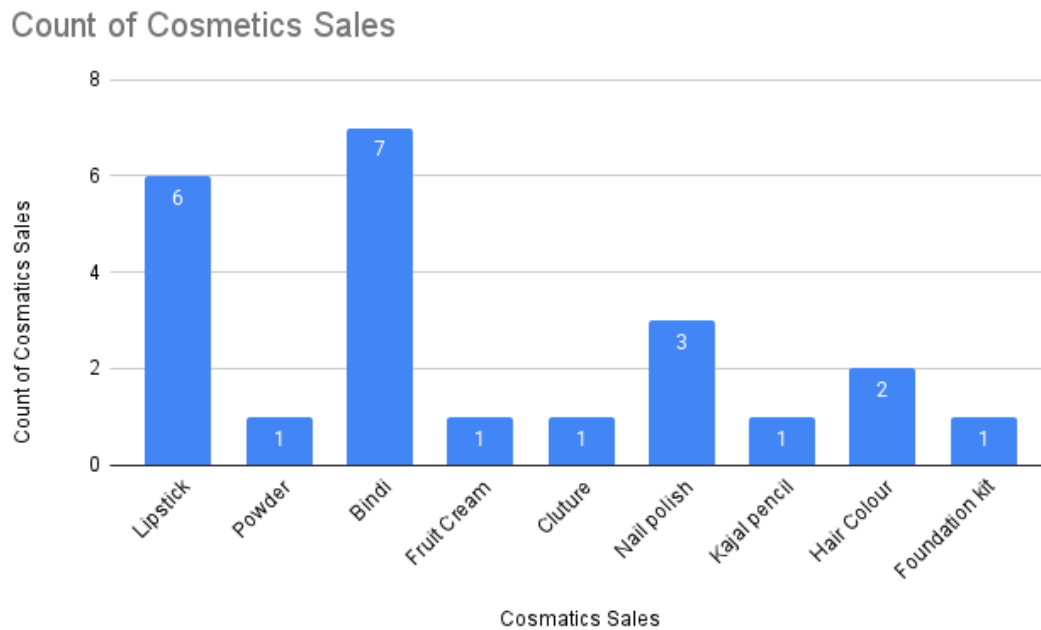
Fig. (3.9) Total Number of Counts of cosmetics services over three months.

This bar graph, Fig. (3.9) shows a balanced distribution, with Bindi(7 times)
and Lipstick(6 times) as the most commonly purchased items. Other products such as
Nail Polish(3 times), Kajal pencil, Hair colour(2times) shows a moderate usage, while
the remaining items -including Powder, Fruit Cream, Cluture, Kajal pencil, and
 Foundation kits were sold only once each.

10. Daily Profit Trend
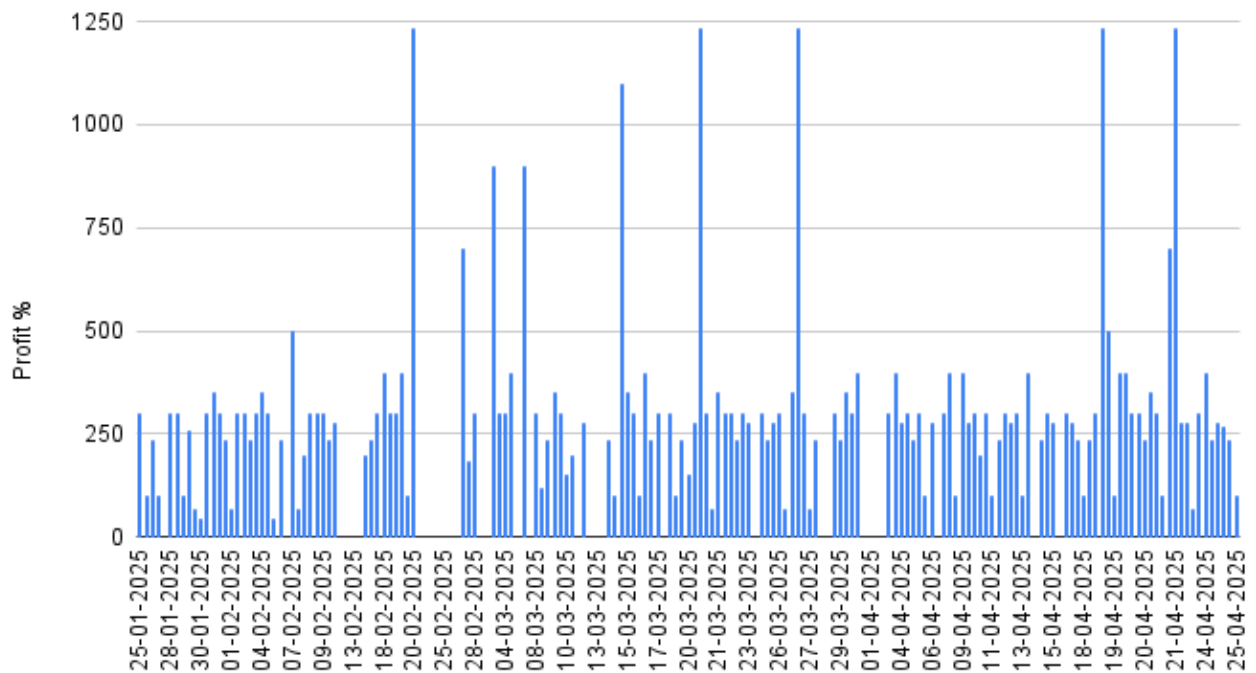

Daily profit% over three months

Fig. (3.10) Daily Profit Trend

This Graph Fig. (3.10) shows a percentage profit earned daily over a period from 25 January to 25 April 2025.

- X-axis: Dates
- Y-axis: Daily Profit Percentage(Profit %)
- There are occasional extreme spikes reaching values above 1200%, indicating very high profit on a few specific days.
- Most daily profit percentages seem to fall within the 200-350% range, suggesting consistently profitable days with a few outliers.
- Spikes occur irregularly, possibly indicating special events or market opportunities on those days.

Overall, the business appears to be consistently profitable, with a few highly profitable days.
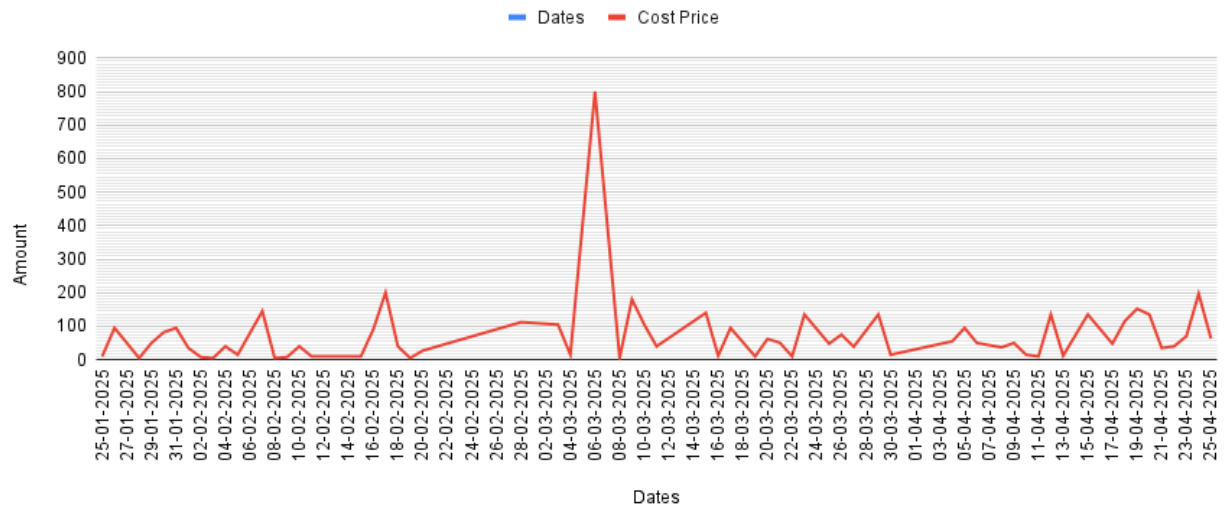
11. Cost Price Trend

Fig. (3.11) Cost Price Trend Over Three Months

This Graph Fig(3.11) shows the daily cost price trend from 25 January 2025 to 25 April 2025

- X-axis: Dates
- Y-axis: Cost Price
- The red line represents the daily cost price of a product or service.
- Most values are relatively low and stable, generally ranging from 0 to 150.
- There is a notable spike around 6 March 2025, where the cost price sharply rises to nearly 800-900 units, indicating a one-time or rare event that caused an irregular increase in cost.
- Apart from this spike, the graph shows fluctuations but stays within a predictable range

Overall, the trend suggests costs are generally well-controlled except for isolated events.

12. Comparison between Cost profit margin vs Selling profit margin

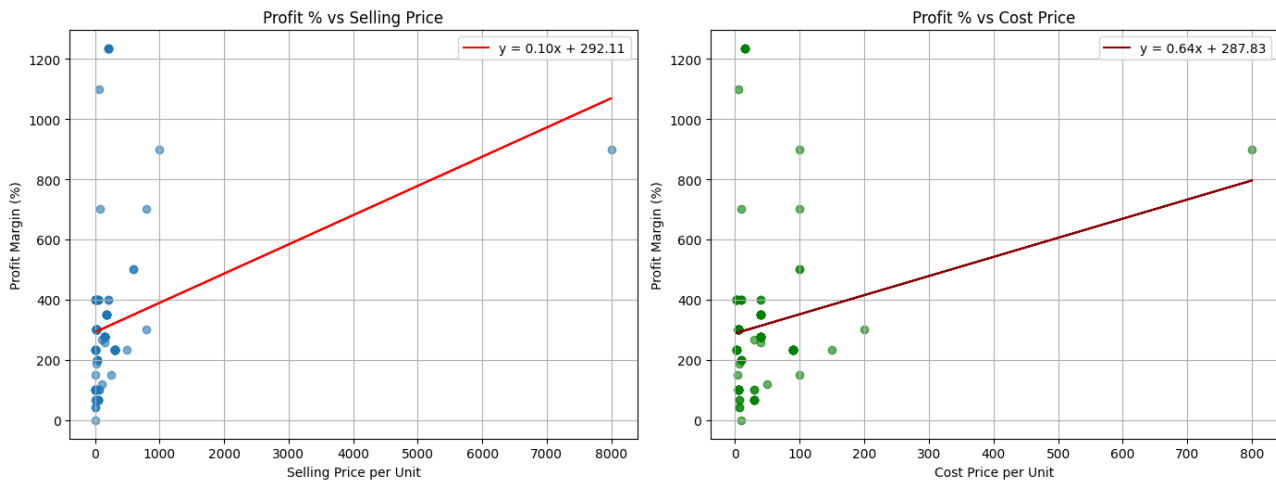Comparison of Profit Margin with Selling and Cost Prices

Fig. (3.12) Comparison between Cost profit margin vs Selling profit margin

Left Plot: Profit% vs Selling Price

- X-axis: Selling Price per unit

- Y-axis: Profit Margin(%)

- A positive trend is shown as the selling price increases, profit % tends to increase.

- However, the slope is shallow (0,10), meaning the selling price has a weaker influence on profit %.

- Equation of trend-line: y = 0.10x + 292.11

    - suggests that for every 1 unit increase in selling price, profit% increases by only 0.10%.

Right Plot: Profit% vs Cost Price

- X-axis: Cost Price per unit

- Y-axis: Profit Margin%

- Another positive trend, but the slope is steeper (0.64).

- This means the cost price has a stronger influence on profit % than the selling price does.

- Equation of trendline: y = 0.64x + 287.83

    - For every 1 unit increase in cost price, profit% increases by 0.64%.

Overall, both selling price and cost price affect profit margin. Cost price has a stronger correlation with profit margin(based on slope). This could mean high profits may be more linked to low initial cost than just increasing the selling price. Outliers still exist and may skew overall trends.

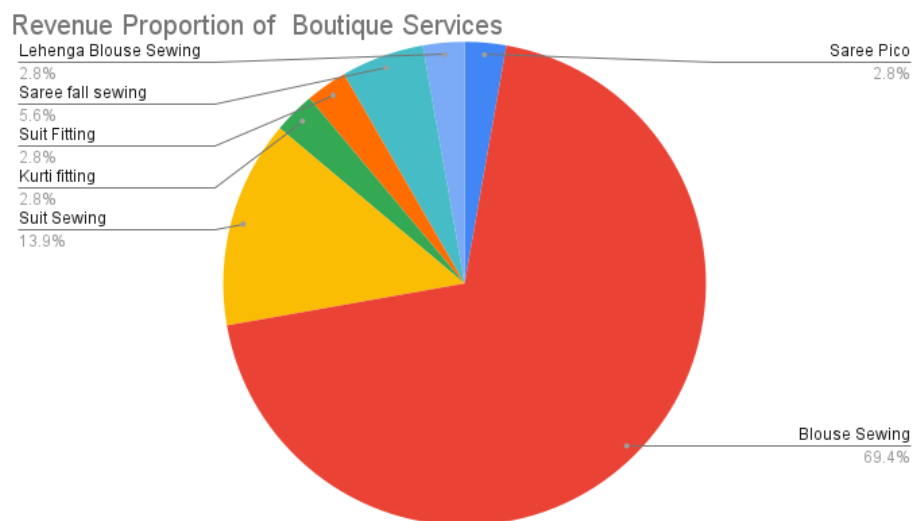## 13. Revenue Proportion of Boutique Services

Fig. (3.13) Revenue Proportion of Boutique Services

This graph(3.13) shows how revenue is distributed across different tailoring services in a boutique.

• Blouse Sewing contributes 69.4% of the total revenue. The main source of income for the boutique.

• Other services with much smaller shares, like Suit Sewing 13.9%, Saree Fall Sewing 5.6% and Lehenga Blouse Sewing, Suit Fitting, Kurti Fitting, Saree Pico, all contribute 2.8% each.

Overall, the boutique relies heavily on Blouse Sewing for revenue, and other services contribute very little.

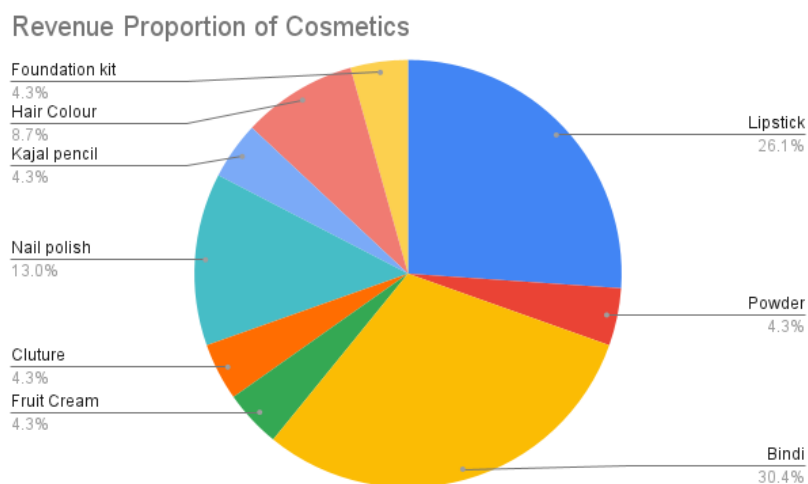## 14. Revenue Proportion of Cosmetics Services

Fig. (3.14) Revenue Proportion of Cosmetics Service

This graph, Fig. (3.14) shows how revenue is distributed across different cosmetic products sold.

- Bindi (30%) and Lipstick are the main revenue drivers, possibly due to higher volume or better margins.

- Most other products contribute marginally, indicating lower demand or occasional use

Overall, the revenue is heavily skewed toward a few high-performing items, especially Bindi and Lipstick, indicating where demand is strongest.

15. Revenue Proportion of Parlour Services
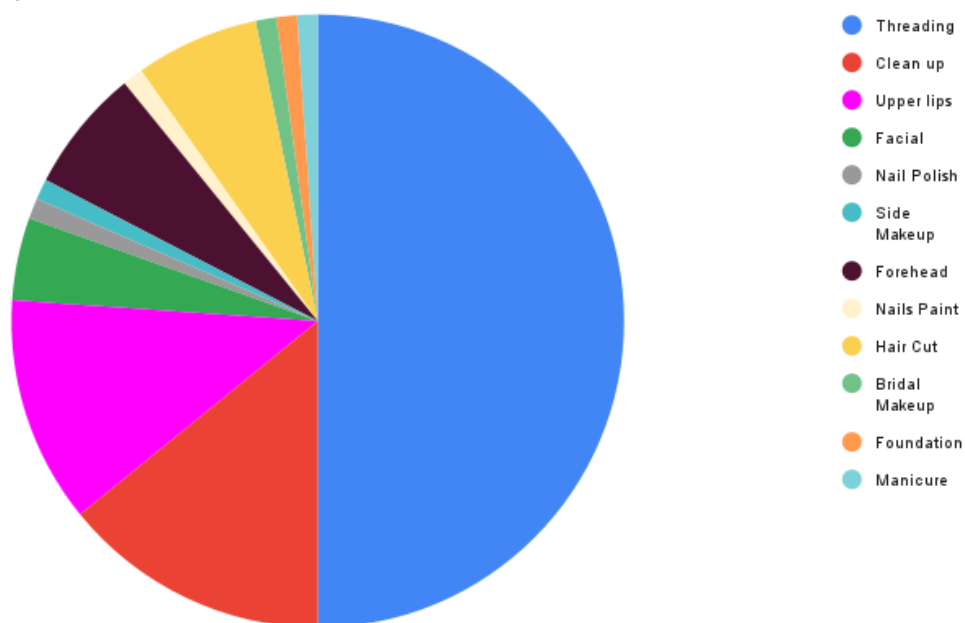

Fig. (3.15) Revenue Proportion of Parlour Services

This graph(3.15) shows how various services contribute to total parlour revenue

- Threading contributes a massive 50% of the total parlour revenue, clearly the most in-demand service.

- Moderate Contributors:

  - Clean up:~ 13-14%

  - Upper lips:~12%

  - Forehead:~7%

  - Hair Cut:~7%

- Lower Contributors(each 1-5%):

  - Facial

- Nail Polish
- Side Makeup
- Nails Paint
- Bridal Makeup
- Foundation
- Manicure

Overall, Parlour service is highly concentrated, with Threading alone accounting for half of the income. Service like Clean up and Upper lips follow but at a much lower scale. Most of the services contribute marginally, suggesting either lower demand or potential areas for business growth and marketing

4. Key Findings

Several important patterns and insights emerged from the data collected from 25th January to 25th April 2025:

4.1 Revenue Insights

- The business generated a total of ₹29,420 in revenue over the 3 months.

- Parlour services contributed the largest portion, 63.3% to total revenue.

- Boutique services followed with 31.4%, and cosmetic sales contributed the smallest share at 5.3%.

4.2 Service Popularity

- Threading was the most frequently availed service, performed 46 times, generating consistent income.

- Blouse sewing was the most popular boutique service, contributing 69.4% of boutique revenue.

- Cosmetic sales like Bindis and lipsticks are sold in low volumes, indicating limited demand or marketing.

4.3 Profit Margins

- Most services had high profit margins, averaging between 200% and 350%, with some days exceeding 1200%.

- Analysis showed that the cost price had a stronger impact on profit margins than the selling price.

4.4 Operational Gaps

- **30 days** recorded no transactions, suggesting either the shop was closed or business was too low, directly impacting revenue.

- Lack of appointment scheduling led to customer congestion or lost clients due to waiting.

- Unsold or expired cosmetic stock was an ongoing issue, especially in off-peak seasons.

5. Conclusion

The analysis of three months of business data for the business provides a clear snapshot of both the strengths and inefficiencies within the enterprise. The parlour arm of the business is thriving, especially during seasonal peaks like weddings, while boutique services show consistent but moderate demand.

Cosmetic sales are minimal and contribute the least to revenue, indicating potential oversupply or poor marketing. The lack of digital systems for scheduling, inventory tracking, and revenue forecasting contributes to avoidable losses, poor customer retention, and underutilization of capacity.

Despite these issues, the overall profitability is strong, and with targeted improvements, the business has the potential to grow sustainably and serve as a model for similar rural ventures.

6. Recommendations

To capitalise on the findings and unlock further growth, the following recommendations are proposed:

6.1 Appointment and Queue Management

- Use a simple phone or Google Calendar system to schedule appointments, reduce customer wait times, and manage staff better.

- Introduce time-slot-based services during weekends and peak seasons.

6.2 Inventory Optimisation

- Monitor cosmetic stock regularly using a basic spreadsheet or inventory app to avoid overstocking.

- Create combo offers or discounted bundles for slow-moving cosmetic items.

6.3 Promotions and Loyalty Programs

- Implement a referral scheme where customers get a discount for bringing friends.

- Start a loyalty card system for frequent services like threading or blouse sewing.

6.4 Data Continuity

- Continue recording daily sales and service counts digitally.

- Review data monthly to identify new trends, peak periods, and product performance.

6.5 Strategic Focus on Bridal Packages

- Bridal packages significantly increase revenue—promote them more via word-of-mouth, posters, and WhatsApp status during wedding seasons.