

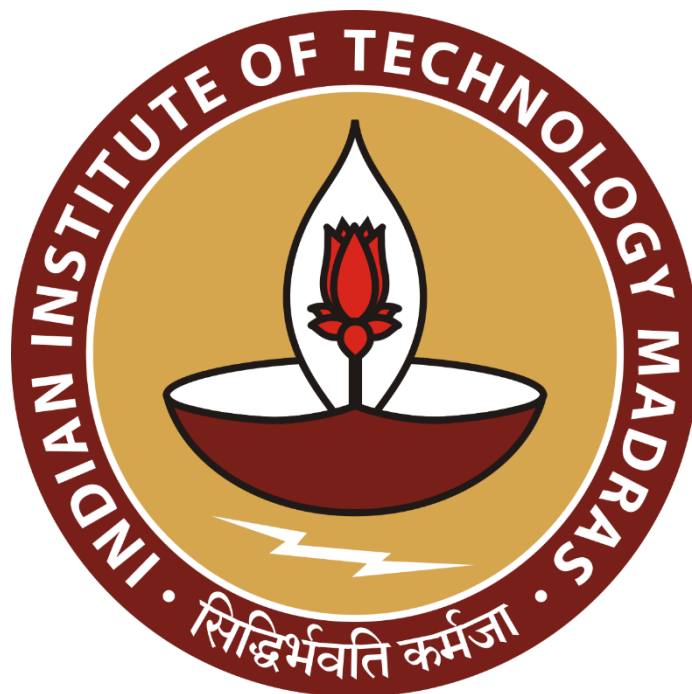
Data-Driven Revamp for 'Friends': Enhancing Inventory Management and Customer Engagement

A Mid-Term Report for the BDM capstone Project

Submitted by

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Contents

| | | |
|---|--|---|
| 1 | Executive Summary and Title | 2 |
| 2 | Proof and Originality of Data | 2 |
| 3 | Metadata and Descriptive Statistics | 4 |
| 4 | Detailed Explanation of Analysis Process | 6 |
| 5 | Results and Findings | 7 |

1 Executive Summary and Title

The project titled **"Data-Driven Revamp for 'Friends': Enhancing Inventory Management and Customer Engagement"** attempts to improve the business of "Friends," a B2B wholesale shop in Kolkata. The data, collected manually from the shop's register notebooks for August and September 2023, was entered into an Excel workbook. This data contains details such as the product, quantity purchased, total value, buyer, and date of sale. The crux of the analysis is Pareto Analysis, Customer Segmentation, and Inventory Management.

The analysis has revealed some interesting insights about the business. A4 size paper plays a significant role in the revenue, accounting for 23.52% of the total business. Three specific companies: JK, Bilt, and April, are the primary contributors within the A4 paper segment. Interestingly, consumers show flexibility in stocking both 70 and 75 GSM variants of A4 paper, regardless of the brand. This opens an opportunity for "Friends" to broaden its product offerings within this category.

On the other hand, while other stationary items do add to the revenue, their contribution is considerably less compared to A4 size paper. Pen drives and trophies, despite showing a high margin, are exceptions and not a consistent. The top 20 customers and products sold account for over 59% of the revenue, suggesting the potential for targeted marketing and customer engagement strategies. Also, the inventory can be optimized well by removing the many trophies stored as obsoletes in the shop because of the pandemic.

The main goal of the project is to boost profitability, streamline inventory control, enhance customer understanding, and enable better decision-making through these insights.

2 Proof of Originality of Data

I have collected the data of 2 months manually from the notebooks of **"Friends"**. I then entered the data into an Excel workbook.

| Date | Particular | Voucher no. | Qty | (Rs) price | Rs. Amt. |
|----------|---------------------------------|-----------------|-----|------------|----------|
| 01.08.23 | Victessore Enterprise Pvt. Ltd. | CAMAC/23-24/814 | | | |
| | Collection Pen | | 1 | 24.5 | 24.50 |
| | Rule Dista | | 1 | 29.0 | 29.00 |
| 01.08.23 | Cash | CAMAC/23-24/815 | | | |
| | Exercise copy page | | 1 | 142.0 | 142.00 |
| | 400 Hand Bound | | 4 | | |
| | OCTANE RED GEL PEN | | 4 | 7.0 | 28.00 |
| | OCTANE BLUE GEL PEN | | 6 | 7.0 | 42.00 |
| 01.08.23 | Susni Apparels | CAMAC/23-24/816 | | | |
| | Rule Dista | | 1 | 30.0 | 30.00 |
| 01.08.23 | Cash | CAMAC/23-24/817 | | | |
| | Battery Ultra | | 4 | 18.0 | 72.00 |
| | Pen Pentonic 0.5mm 12/18/ | | 4 | 99.0 | 396.00 |
| | Bell Gears clip 3mm | | 1 | 19.0 | 19.00 |
| 01.08.23 | Sintex Bapla & Ltd | CAMAC/23-24/818 | | | |
| | Milk Powder | | 1 | 470.0 | 470.00 |
| | Tata Tea Gold Snuggles | | 4 | 250.0 | 1000.00 |
| 01.08.23 | Trident Iron + Steel Pvt. Ltd. | CAMAC/23-24/819 | | | |
| | Steel file Kagasol (Bp) | | 18 | 90.0 | 1620.00 |

Figure 1: Notebook of records

The pictures of the shop are as follows:



Figure 2: Mr. Anurag Agarwal and his wife Mrs. Manisha Agarwal in the shop counter



Figure 3: The main gate of the shop



Figure 4: Me with Mr. Anurag Agarwal

Subject: Proof of Originality of Data for BDM Project

I, Anurag Agarwal, confirm that the data provided to Pranshu Jaiswal for his BDM Capstone Project is original and authentic. The data has been collected from our business, 'Friends'.

I have personally overseen the data collection process and can vouch for its accuracy and confidentiality. The data reflects the actual state of our business operations.

Thank you,
Regards,

Anurag Agarwal

Figure 5: Consent letter signed by Mr. Anurag Agarwal

[Google Drive link for Excel data and additional proof \(along with video\)](#)

3 Metadata and Descriptive Statistics

3.1 Metadata

- 3.1.1 *Data Collection:* The data is collected from the register notebook of “Friends” for the months of August and September 2023. As “Friends” purge the date after 2 months, I was unable to collect date of previous months.
- 3.1.2 *Data Format:* I manually typed the data from register notebook into an Excel workbook for my analysis. The Excel workbook is saved in .xlsx format.
- 3.1.3 *Data Description:* The below table shows the columns of data I received along with its description.

| Name of Column | Description |
|--------------------|---|
| Date | The dates of sales ranging from 1 st August 2023 to 30 th September 2023. |
| Particulars | The companies (customers) who bought their products from “Friends.” |
| Items | The name of the item bought by a company (customer). |
| Quantity | The number of items bought by a company. |
| Price Per Quantity | The price per quantity being offered by “Friends.” |
| Amount | The product of Quantity and Price Per Quantity Columns which is the total amount paid by the company for the number of products they purchased. |

Column Vch No. was not taken into consideration as it is irrelevant to the analysis.

3.2 Descriptive Statistics

- 3.2.1 The total revenue of the months of August 2023 and September 2023 is ₹ **26,89,288.64**. With August 2023 having revenue of ₹ **14,19,408.32** and September 2023 showing small decline with revenue ₹ **12,69,880.32**.
- 3.2.2 The number of companies who were customers of “Friends” in this 2 month period were **267** with **64629** items sold.
- 3.2.3 Week 2 saw highest margins of revenue with ₹ **4,55,145.67** and Week 1 was the lowest with ₹ **1,48,333.48**.



Figure 6: Line Chart showing Week wise variation of revenue

- 3.2.4 The most sold item in the shop is **Envelop Brown 10X4.5** with 5300 units sold. The item which brings the highest revenue is **Bilt Copy Power (75GSM) A4 Paper** which is **₹2,60,655.74**
- 3.2.5 The customer with the highest purchase is **Lanshree Products & Services Ltd.** With **₹2,37,560.00**
- 3.2.6 The top 20 customers bring in **59.33%** revenue of a whopping which is **₹ 15,74,234.22**.
- 3.2.7 The top 20 products sold show similar results with **59.63%** revenue which is **₹ 16,03,740.74**.

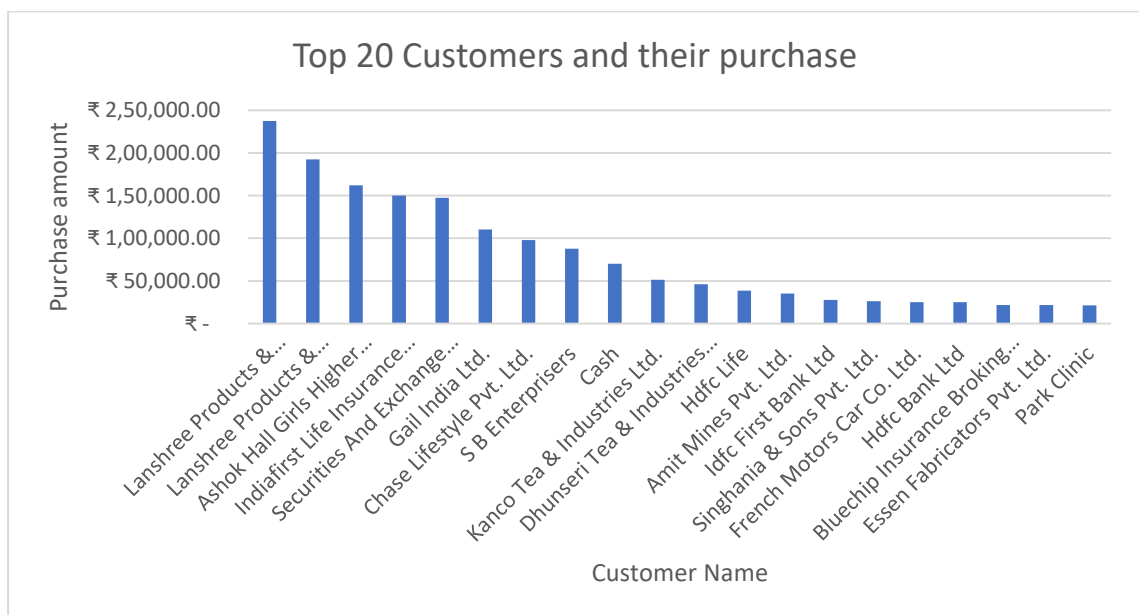


Figure 7: Bar Chart showing distribution of customers according to revenue



Figure 8: Bar Chart showing distribution of product with respect to amount

4 Detailed Explanation of Analysis Process

All the records from the notebook were entered into Excel. A column Vch No was deleted and another column Week was added for further analysis. It is crucial to note that since “Friends” purges their data after 2 months, it was impossible to get the data before August 2023.

4.1 Pareto Analysis:

- 4.1.1 Pareto Analysis is employed to prioritize efforts based on substantial revenue contributors.
- 4.1.2 The cumulative revenue and its percentage contribution to the total revenue are computed.
- 4.1.3 A Pareto chart is used to visually pinpoint key products and sales channels for the allocation of resources and profit maximization.

4.2 Sales Trend Analysis:

- 4.2.1 Sales records were observed to figure out the key customers and key products in terms of revenue and quantity sold.
- 4.2.2 Table was constructed to find (if) any correlation between top customers and weekly trends.

4.3 Strategic Recommendations:

- 4.3.1 Business owners were shown the dominance of certain products and the obsolescence.
- 4.3.2 Based on product purchase frequency, proposed a strategy for optimizing stock procurement during offers, aiming to reduce stockouts and eliminate dead stock.

4.4 Discount Strategies and Customer Loyalty:

- 4.4.1 Identified products suitable for maximum discounting to encourage customer loyalty and secure a strong customer base.

5 Results and Findings

5.1 A4 Size Paper Dominance:

- 5.1.1 Analysis reveals that a significant share, 23.52%, of the overall business is attributed solely to A4 size paper.
- 5.1.2 This is a clear indication of the pivotal role of A4 size paper in the revenue stream of “Friends”.

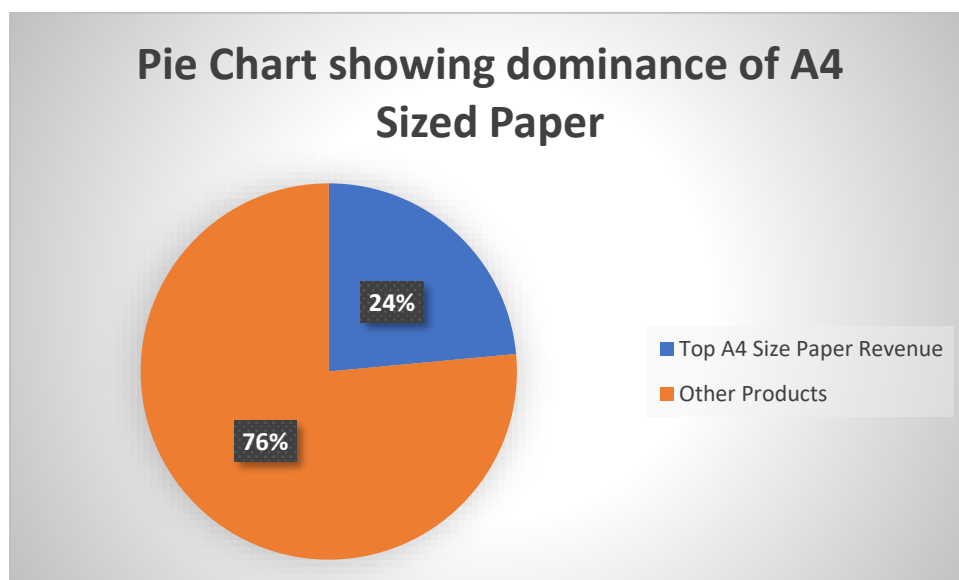


Figure 9: Pie Chart showing the revenue yielded by A4 size paper and other products.

5.2 Three Major Companies:

- 5.2.1 Within the A4 paper segment, most business comes from three specific companies: JK, Bilt and April.
- 5.2.2 The presence of multiple companies shows partnership potential for the business.

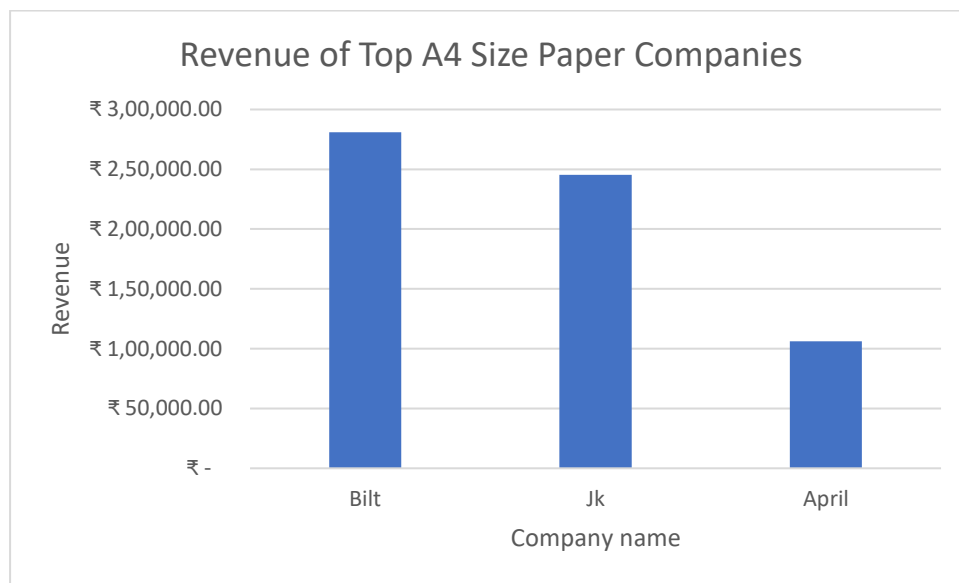


Figure 10: Bar Graph of Revenue of Top A4 Size Paper Companies

5.3 Customer Preferences:

- 5.3.1 Consumers are willing to stock both 70 and 75 GSM variants of A4 paper, irrespective of the brand.
- 5.3.2 This flexibility in preferences provides an opportunity for the "Friends" to diversify its product offerings within the A4 paper category.

5.4 Contrasting Margins from other items:

- 5.4.1 While other items such as trophies and other products do contribute to the revenue, their yield is ultimately pale compared to A4 size paper.
- 5.4.2 Although Pendrives do show a high margin of ₹ 1,50,000 they can be considered an exception as this feat is not repeated.

5.5 Inventory Management:

- 5.5.1 As evident from the pictures given in the link, the shop consists of many trophies. These were all high revenue items in the Pre-Pandemic days.
- 5.5.2 Currently, they are only occupying storage and not being sold anymore as many companies have shut down or either no longer organize competitions.