Simple Threads: Q1 2025 Performance Review

Thisreport providesan in-depthanalysis of Simple Threads' business performance, customer behaviour,and the efficacy ofouryear-end discount campaign for Q1 2025. Our objective is to furnish actionable insights to drive future strategic decisions.

Analyst: Mayank Jindal

Roll: B25BS1195
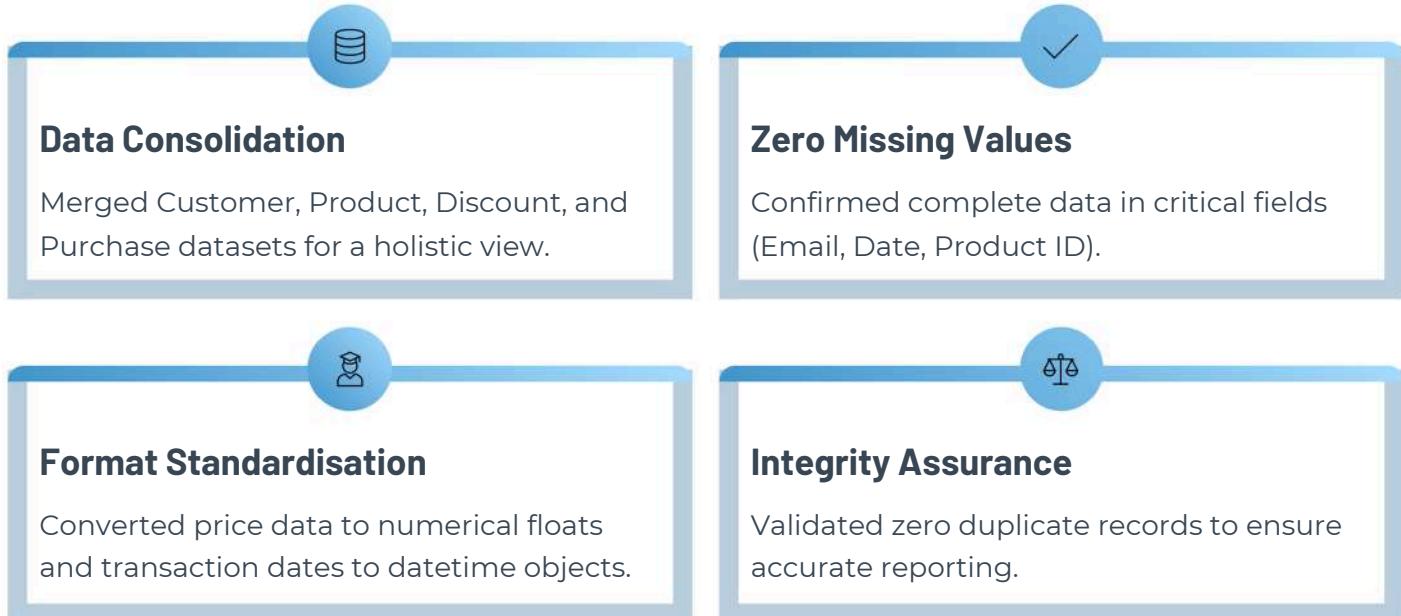
Department: AIDE

Institution: Indian Institute of Technology Jodhpur

Course: BDA – Basics of Data Analytics

Strategic Foundations: Data Preparation

Our analysis commenced with the meticulous consolidation and cleaning of four essential datasets: Customers, Products, Discounts, and Purchases. Rigorous data quality checks ensured the integrity of our insights.

Data Consolidation

Merged Customer, Product, Discount, and Purchase datasets for a holistic view.

Zero Missing Values

Confirmed complete data in critical fields (Email, Date, Product ID).

Format Standardisation

Converted price data to numerical floats and transaction dates to datetime objects.

Integrity Assurance

Validated zero duplicate records to ensure accurate reporting.

Data Loading and Cleaning:

- Four datasets (customers, products, purchases, discounts) were loaded.
- The 'Price(INR)' column in the products DataFrame was cleaned by removing 'Rs.' and converting it to float.
- The 'Transaction Date' column in the purchases DataFrame was converted to datetime, and missing dates were identified.
- No duplicate rows were found in any of the dataframes. Missing values were handled where appropriate (e.g., in purchases['Transaction Date']).

Q1 2025 Key Performance Metrics

Q12025 demonstratedsolid performance, highlighted by significantrevenue generation and a growing customerbase.The figuresbelow summarise our keyachievements and financial health.

24,730
Total Revenue (INR)

Revenue generated in Q1 2025.

21
Unique Customers

Customers completing transactions.

987.14
Average Order Value (INR)

Spend per customer, approximately.

A crucial insight reveals that while our customer base is expanding, revenue remains concentrated within specific, high-performing product categories.

Q1 2025 Key Performance Metrics

Based on the analysis of purchases from January 1, 2025, to March 31, 2025:
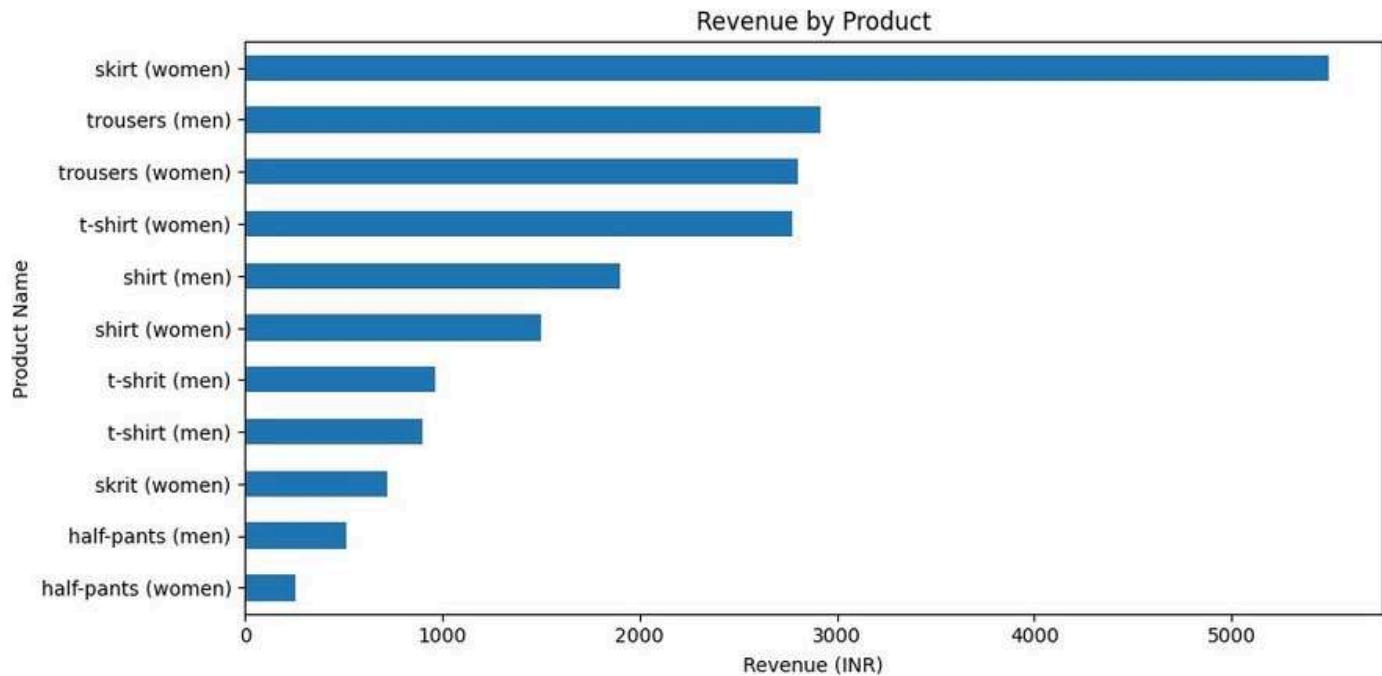
- **Total Sales Revenue:** 20,730.0 INR
- **Number of Unique Customers:** 21
- **Average Spend per Customer:** 987.14 INR
- **Top Selling Product (by revenue):** Skirt (women) - 5,490.0 INR
- **Correlation between Product Price and Amount Spent:** 0.954 (Strong positive correlation)

Average Amount Spent by Discount Percentage:

- **10% Discount:** 593.18 INR
- **15% Discount:** 500.42 INR
- **20% Discount:** 706.00 INR

Product Performance Spotlight

AnanalysisofproductrevenuedriversinQ12025showsclearmarketpreferences and areas for strategic focus.

Women's Skirts were the top revenue driver. Conversely, Half-pants (Women) exhibited the lowest sales, indicating a potential need for seasonal adjustment or a revised promotional approach.

Product Performance Spotlight (Q1 2025)

To identify key performing products, we've analyzed the total revenue generated by each product during Q1 2025. This gives us a clear picture of which products contribute most to overall sales.

Top Performing Products by Revenue:

- **Skirt (women):** This product category was the highest revenue generator, bringing in **5490.0 INR**.
- **Trousers (men):** Followed as a strong performer with **2920.0 INR** in sales.
- **Trousers (women):** Also contributed significantly with **2800.0 INR**.
- **T-shirt (women):** Generated **2775.0 INR**.

These insights suggest that women's skirts and both men's and women's trousers are critical components of the sales strategy, being the highest revenue contributors in the first quarter.

Campaign Effectiveness: Discount Tiers

Ourpromotional strategiesplayedasignificantroleinQ12025sales.Understandingtheimpactof differentdiscount tiersiskeytooptimisingfuturecampaigns.

37 Customer Conversions

All customers who received promotional discounts successfully made purchases.

20% Discount Lead

Most effective, resulting in an average spend of 706.00 INR.

10% Discount Baseline

Solid performance with an average spend of 593.18 INR.

15% Tier Underperforms

Lowest average spend at 500.41 INR, suggesting it lacks incentive.

The 15% discount tier did not incentivise high-value purchases as effectively as the 20% tier, indicating a need for reassessment.

Campaign Effectiveness: Discount Tiers (Q1 2025)

We analyzed the average amount spent by customers based on the different discount percentages offered. This helps understand which discount tiers might be more effective in driving higher transaction values.

- **20% Discount:** Transactions with a 20% discount had the highest average amount spent, totaling **706.00 INR**.
- **10% Discount:** Transactions with a 10% discount followed with an average spend of **593.18 INR**.
- **15% Discount:** Transactions with a 15% discount had the lowest average amount spent, at **500.42 INR**.

This suggests that a 20% discount was most effective in encouraging higher spending during Q1, while the 15% discount tier saw comparatively lower average transaction values.

Advanced Insights: Price & Quantity
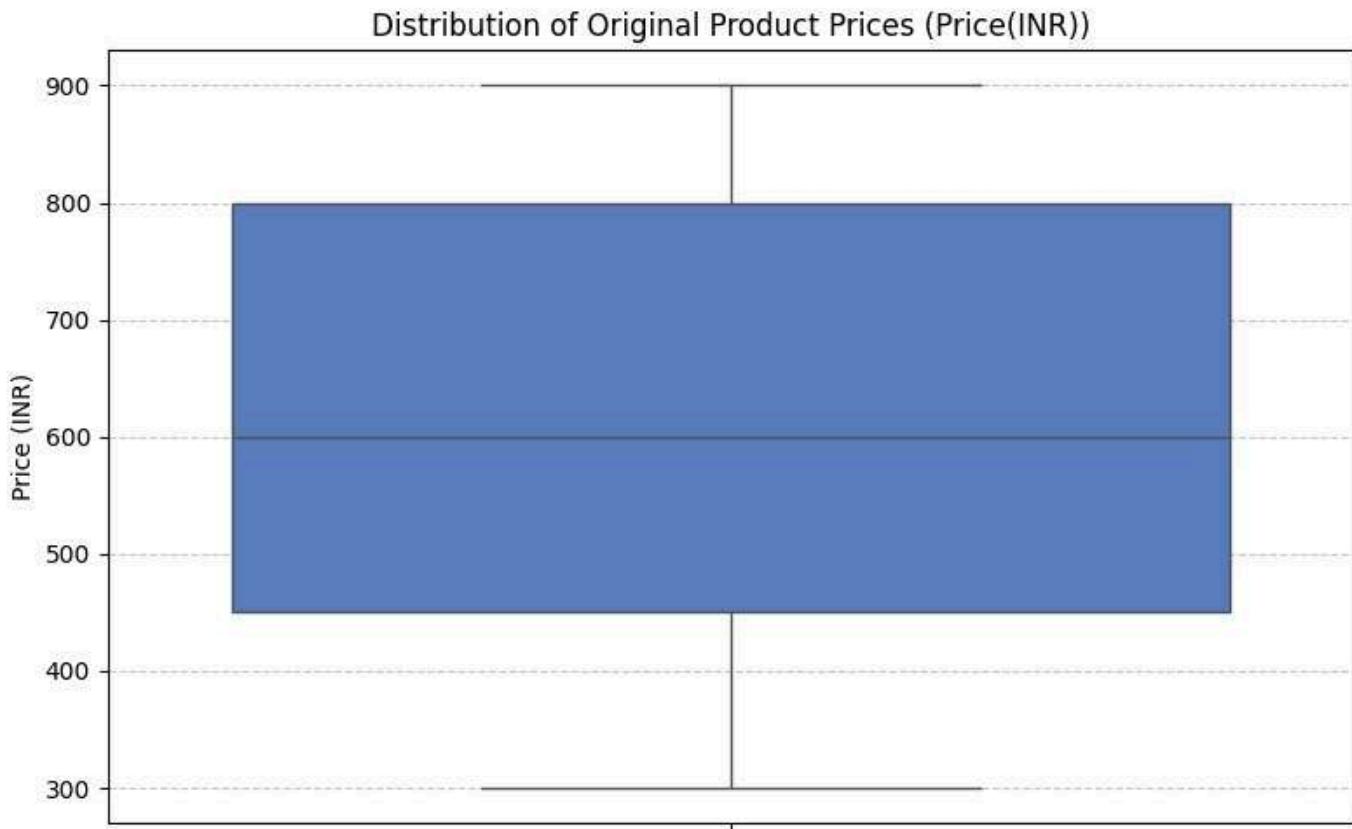
Delving deeper intocustomerpurchasingbehaviour,weuncoverstrongcorrelationsbetween product pricing, purchaseamounts,andcustomerbuyingtrends.

Price-Purchase Correlation

A very strong positive correlation (0.854) exists between product price and the final purchase amount. This suggests that customers are not deterred by higher prices, and premium items are significant revenue generators.

While most customers purchase 132 items, specific high-value customers (VIPs) consistently drive significantly higher transaction volumes, as illustrated by our boxplots.

Distribution of Original Product Prices (Price(INR))

Strategic Recommendations: Product & Promotion

Basedon our Q12025 analysis, weproposetargeted strategies to enhance product offeringsandoptimise promotional efforts.

Product Optimisation

Increase inventory and marketing focus on "Women's Skirts" and "Men's Trousers," which are core business drivers.

Targeted Promotions

Leverage the 20% discount for high-stock or premium items to maximise Average Order Value (AOV), given its proven effectiveness.

Customer Loyalty Programme

Develop a loyalty programme for the 37 converted customers to encourage repeat business and ensure retention in Q2 and beyond.
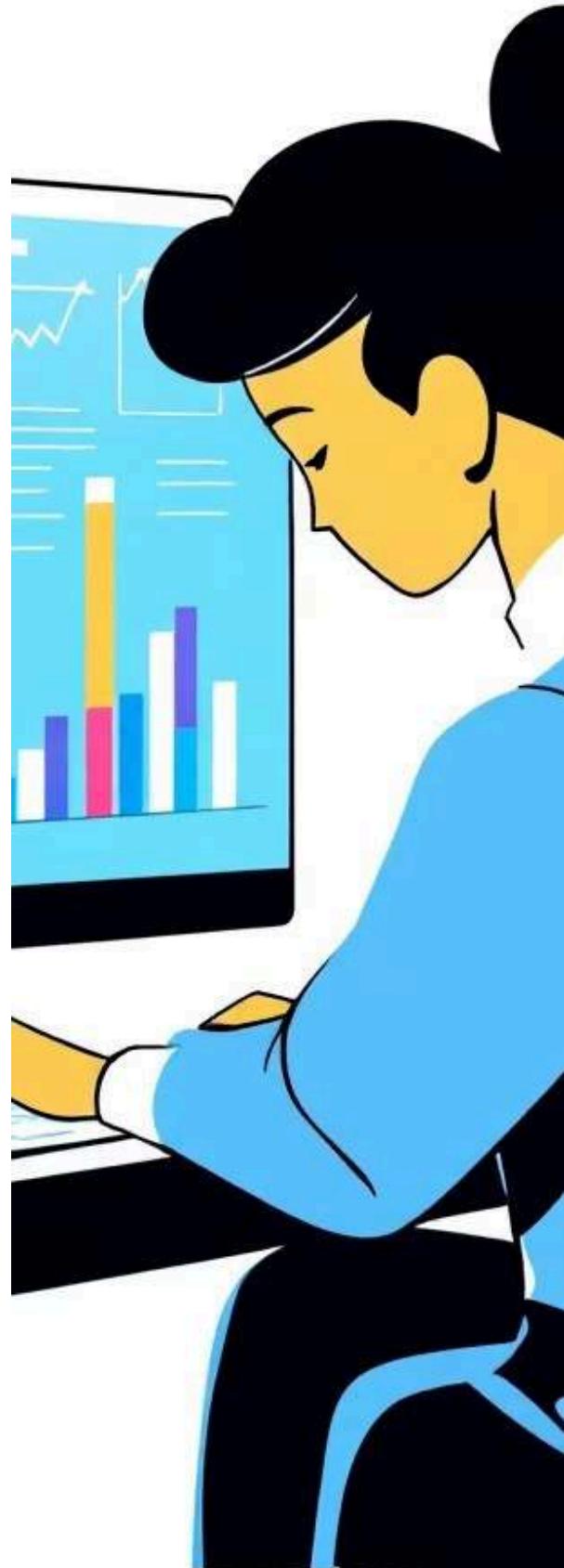
Data Loading & Cleaning Summar y

The foundational step ofouranalysis involvedrobust

data loading and cleaning acrossall criticaldatasets. This ensured the accuracy and reliability of subsequent insights.

- Four datasets (customers, products, purchases, discounts) were successfully loaded.
- The 'Price(INR)' column in the products DataFrame was meticulously cleaned, removing 'Rs.' and converting values to float.
- The 'Transaction Date' column in the purchases DataFrame was converted to datetime objects, and missing dates were identified and addressed.
- Confirmed no duplicate rows across all dataframes, maintaining data integrity.
  Missing values were handled appropriately,
- particularly in purchases['Transaction Date'].

Q1 Purchase and Sales Deep Dive

A detailed examination of Q1 2025 purchases and sales provided a granular view of customer behaviour and product performance during the period.

Q1 Purchases Analysis

- Purchases for Q1 2025 were successfully filtered.

- Identified 21 unique customers within Q1, distinct from the campaign conversions.

- Calculated the average spend per customer in Q1 as approximately 987.14 INR.

- Noted an issue with 'Customer ID' matching when merging q1_purchases with customers, leading to null customer details in some instances.

Q1 Sales Analysis

- Merged q1_purchases with products to create comprehensive q1_sales_data.

- Total sales amount for Q1 registered at 20,730.0 INR.

- Top-selling products by revenue were confirmed, with 'skirt (women)' generating the highest revenue of 5,490.0 INR.

- Reaffirmed a strong positive correlation (0.954) between product price and amount spent, reinforcing premium item value.

Data Analysis Key Findings

- **Customer Purchase Frequency:** The analysis of customer purchase frequency in Q1 revealed a distribution where a large number of customers made a single purchase, with fewer customers engaging in multiple transactions.

- **Popular Products by Purchase Count:** The top 10 most popular products in Q1 were identified based on their purchase count. A bar chart visualized these products, highlighting their relative popularity, although specific product names and exact counts were not detailed in the provided output.

- **Discount Code Usage:** The discount code '.' was the most frequently used in Q1, accounting for 11 usages. The next most popular code was 'QAZWSX', with 3 usages, indicating a significant disparity in usage among the codes.

Insights or Next Steps

- **Improve Customer Retention:** Given the likely high prevalence of single-purchase customers, focus on strategies to convert one-time buyers into repeat customers, such as targeted offers or loyalty programs.

- **Investigate Discount Code '.':** The unusually high usage of the discount code '.' (11 usages) compared to others suggests it might be a placeholder, a default value, or a specific type of system-generated discount. Further investigation is recommended to understand its origin and impact on sales data accuracy.

Q1 Discount Campaign & Visualisations
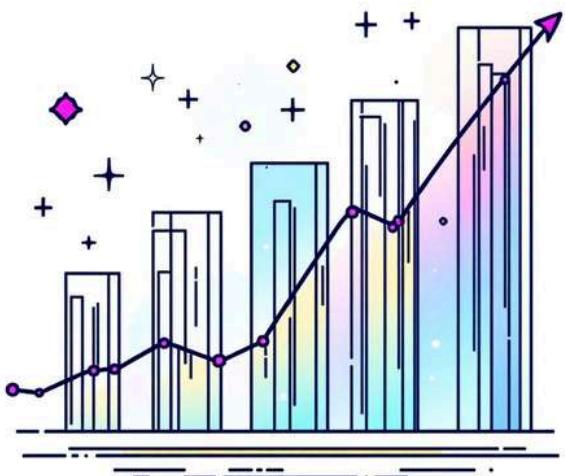
The discountcampaign'simpacton Q1 sales wasthoroughlyanalysed,alongsidethegeneration of key visualisationsanddataexports for further review.

Discount Campaign Analysis

- Merged q1_sales_data with discounts to form q1_campaign_data.

- All Q1 transactions included a 'Discount Code', indicating widespread discount application.

- Average spend analysis by discount percentage:

  - 10% discount: Average spend 593.18 INR

  - 15% discount: Average spend 500.42 INR

  - 20% discount: Average spend 706.00 INR

Visualisations & Exported Data

A bar chart illustrating 'Revenue by Product' was generated to visually depict total revenue for each product category.

Cleaned dataframes (customers, products, purchases, discounts) and the final Q1 analysis dataframe were exported for subsequent use and detailed examination.