DOCUMENTATION FOR FOOD DELIVERY COST AND PROFITABILITY ANALYSIS

SUMMARY

This document provides a comprehensive analysis of the food delivery cost and profitability dataset. The analysis aims to understand the cost structure, revenue generation, and profitability of a food delivery company operating in New Delhi. The dataset consists of 1000 orders with various attributes such as order value, delivery fee, payment method, discounts, commission fee, payment processing fee, and refunds/chargebacks.

The analysis involves handling missing values, calculating key metrics, visualizing data, and implementing strategies to improve profitability. The ultimate goal is to identify factors affecting profitability and recommend actionable steps to enhance the company's financial performance.

METHODOLOGY

1. Data Loading and Initial Inspection:

   - The dataset was loaded into a pandas Data Frame for analysis.

   - Initial inspection of the dataset was performed to understand its structure, including the number of rows, columns, and data types.

2. Handling Missing Values:

   - Missing values in the 'Discounts and Offers' column were replaced with 'No Discount'.

   - For numerical columns, negative values were clipped to zero, and missing values were filled with the mean or mode as appropriate.

3. Cost Analysis:

   - Calculated the discount value for each order by extracting numerical values from the 'Discounts and Offers' column and converting them to decimal.

   - Calculated the total cost per order by summing the delivery fee, payment processing fee, and refunds/chargebacks.

   - Calculated the total revenue by subtracting the discount value from the commission fee.

   - Calculated the net profit by subtracting the total cost from the total revenue.

4. Visualization:

  - Used bar plots to visualize the total revenue, total cost, and profit.

  - Used pie charts to understand the proportion of different cost components.

5. Profitability Improvement Strategy:

  - Implemented strategies to improve profitability, including increasing commission fees and limiting discounts.

  - Recalculated key metrics and visualized the impact of these changes on profitability.

6. Future Profitability Analysis:

  - Analysed the trend of profitability over time using linear regression to predict future profits.

Problem Statement

The food delivery company operating in New Delhi is experiencing significant financial losses. The primary objective of this analysis is to identify the factors contributing to these losses and recommend strategies to improve profitability. The key challenges include:

1. Excessive Discounts: The Company offers various discounts and promotions, which significantly reduce the revenue generated from each order.

2. Refunds and Chargebacks: Occasional refunds and chargebacks further reduce the net revenue.

The goal is to analyse the dataset, understand the cost and revenue dynamics, and propose actionable steps to enhance the company's financial performance.

Problem Resolution

To address the financial challenges faced by the food delivery company, the following steps were taken:

1. Cost and Revenue Analysis:
   - Calculated the total cost per order by summing delivery fees, payment processing fees, and refunds/chargebacks.
   - Determined the total revenue by subtracting discount values from commission fees.
   - Computed the net profit by subtracting total costs from total revenue.

2. Visualization and Insights:
   - Visualized the total revenue, total cost, and profit using bar plots to understand the overall financial performance.
   - Used pie charts to identify the proportion of different cost components, highlighting the impact of excessive discounts.

3. Profitability Improvement Strategy:
   - Increased commission fees by a fixed amount to boost revenue.
   - Limited discounts to a maximum of 5% and introduced a minimum order value for discounts to reduce their impact on revenue.
   - Recalculated key metrics and visualized the improved financial performance.

4. Future Profitability Analysis:
   - Analysed the trend of profitability over time using linear regression to predict future profits.
   - Visualized the trend to understand the long-term impact of the implemented strategies.

By implementing these steps, the company can improve its profitability and achieve sustainable financial growth.

Conclusion

The analysis of the food delivery cost and profitability dataset revealed several key insights and actionable steps to improve the financial performance of the company. The primary factor contributing to financial loss of the company was the very excessive discounts and offers.

By implementing strategies such as increasing commission fees and limiting discounts, the company can significantly improve its revenue and profitability. The visualization of the data and the trend analysis using linear regression provided a clear understanding of the current financial situation and the potential future impact of the implemented strategies.

In conclusion, the company must take proactive measures to optimize its cost structure, reduce unnecessary discounts, and increase revenue through higher commission fees. These steps will help the company achieve sustainable financial growth and improve its overall profitability.