Major Project Report

Financial KPI Analysis for a Startup

1. Introduction

Startups operate in a fast-paced, resource-constrained environment. Making informed financial decisions early on is crucial for survival and growth. This project focuses on analyzing key financial performance indicators (KPIs) for an early-stage startup to assess its financial health and customer profitability. By leveraging modern tools such as Power BI, Excel, and Python, this study aims to provide a comprehensive view of trends, efficiencies, and key metrics that guide strategic planning.

2. Abstract

The objective of this project is to evaluate critical financial KPIs — including Monthly Revenue, Burn Rate, Customer Acquisition Cost (CAC), Customer Lifetime Value (LTV), and Run Rate — to better understand the startup's operational efficiency and long-term viability. Using a dataset that contains monthly financials and customer records, the analysis was carried out using Python for data wrangling and metric computation, Excel for financial modeling, and Power BI for dynamic visualization. A major highlight includes the LTV:CAC ratio, a key indicator of customer profitability, and cohort analysis to examine customer behavior over time. The outcome is a set of visual insights and financial reports that enable data-driven decision-making.

3. Tools Used

- **Microsoft Excel**: For financial modeling and creating calculation templates

- **Python (Pandas)**: For data preprocessing, metric calculation (e.g., LTV, CAC, Burn Rate)

- **Power BI Desktop**: For creating dashboards, trend visualizations, and cohort analysis charts

4. Steps Involved in Building the Project

1. **Data Collection & Cleaning**

   o Collected revenue, expense, and customer data from internal sources

   o Cleaned the dataset using Python (handled missing values, formatted dates, etc.)

2. **Metric Computation**

   o Calculated KPIs:

      - **Burn Rate** = Monthly Expenses – Revenue

      - **Run Rate** = Current Monthly Revenue × 12

      - **LTV** = Avg Revenue per User × Gross Margin × Customer Lifespan

      - **CAC** = Total Marketing Cost / Number of New Customers

- **LTV:CAC Ratio** = LTV / CAC

3. **Cohort Analysis**

   o Grouped users based on the month of acquisition to track retention and value contribution over time

4. **Dashboard Creation**

   o Used Power BI to visualize:

     - Revenue vs. Expense trends

     - Profitability by item type

     - Burn rate and run rate breakdowns

     - Sales and COGS metrics

     - LTV:CAC and cohort charts

5. **Reporting**

   o Exported the LTV:CAC Report as PDF

   o Created an Excel financial model template for manual inputs and future scalability

5. Conclusion

The Financial KPI Analysis project provided valuable insights into the financial dynamics of the startup. Key findings such as an improving LTV:CAC ratio and patterns in burn rate enabled better resource allocation and marketing strategy refinement. The use of Power BI and Python streamlined data analysis and visualization, offering an efficient way to track and communicate financial performance. This framework can be regularly updated to support ongoing financial planning and investor reporting, making it a powerful asset for strategic growth.