

Financial KPI Analysis for a Startup

Introduction

In today's dynamic startup landscape, understanding financial KPIs is critical for survival and growth. This project analyzes a synthetic dataset of startup financials to track and evaluate key performance indicators including Customer Acquisition Cost (CAC), Lifetime Value (LTV), Burn Rate, Run Rate, and overall Profitability. Using Power BI, we developed an interactive dashboard to derive actionable insights and visualize financial health at a glance.

Abstract

The goal was to create a robust analytical tool that provides visibility into startup efficiency and growth potential. By leveraging CAC and LTV, we evaluated marketing effectiveness, while metrics like Burn Rate and Run Rate helped assess sustainability. The analysis also segmented startups into cohorts to observe group-wise trends. The final Power BI dashboard offers clear, actionable insights for founders, investors, and financial analysts.

Tools Used

- **Power BI:** For dashboard and data visualization
- **Python (Pandas):** For initial KPI calculations and data preparation
- **Excel:** For reviewing and validating KPI outputs

Steps Involved

1. Data Preparation

Loaded and cleaned the startup dataset (50_Startups.csv)

Created calculated columns: Burn_Rate, Run_Rate, CAC, LTV, LTV_CAC_Ratio, and Cohort

2. KPI Derivations

- Burn Rate = $(R\&D + Admin + Marketing) / 12$
- Run Rate = $Monthly\ Profit \times 12$
- CAC = $Marketing\ Spend / Acquired\ Customers$ (assumed 1000)
- LTV = $Monthly\ revenue\ per\ customer \times 24\ months$
- LTV:CAC Ratio = LTV / CAC

3. Power BI Visualization

Created KPI cards for CAC, LTV, Burn Rate, Run Rate, and Profit

Developed visual charts:

- Burn Rate by State
- Run Rate by Cohort
- LTV:CAC Ratio by Cohort
- Customer Acquisition Efficiency (LTV vs CAC Scatter Plot)

Added slicers for State and Cohort to enable interactivity

4. Dashboard Design

Used clear layout: KPIs → trends → comparisons → cohort breakdown

Applied consistent color themes and clean formatting for readability

Conclusion

This project demonstrated how financial KPIs can be effectively visualized and interpreted using Power BI.

Key Insights:

- Cohort 3 had the highest LTV:CAC ratio and Run Rate, signaling high acquisition efficiency and profitability.
- Florida had the highest average Burn Rate, but also included some of the most profitable startups.
- New York startups showed balanced CAC and LTV values, reflecting stable growth strategies.
- A few rows had extremely low CAC, producing infinite LTV:CAC ratios — these are outliers and should be investigated further.
- Cohorts 3, 4, and 7 were the most promising groups for investment or scaling based on combined financial KPIs.