Startup Financial KPI Dashboard & Analysis

1. Introduction

In the modern startup ecosystem, financial transparency and strategic insights are crucial for sustained growth. Startups need to continuously track their performance, identify areas of concern, and optimize operations. This project aims to deliver a comprehensive, data-driven dashboard that visualizes key financial and customer acquisition metrics, allowing stakeholders to derive meaningful insights from the startup's growth journey.

2. Abstract

This project demonstrates the development of a dynamic KPI dashboard for a fictional startup using an **assumption-based financial model**. The dataset simulates monthly startup performance between **2015 and 2020**, incorporating metrics such as revenue, expenses, investment, CAC (Customer Acquisition Cost), LTV (Lifetime Value), and burn rate. The project integrates data cleaning, transformation, KPI calculation, and interactive visualizations through **Power BI**, enabling detailed trend and ratio analysis across multiple dimensions such as time, city, and industry vertical.

3. Tools Used

- **Python (Pandas, Seaborn, Matplotlib)**: Data cleaning, transformation, KPI computation
- **Power BI**: KPI visualization, trend dashboards, and cohort analysis
- **Excel**: Early assumptions modeling and validation

4. Steps Involved in Building the Project

Step 1: Assumption Model Creation - Excel

- Designed structured set of **initial inputs (hypothetical values)** used to estimate financial KPIs ssince actual data is unavailable, so a simulated financial dataset using constant multipliers.

Step 2: Data Cleaning & KPI Calculation – Python Notebook

- Loaded and Cleaned Dataset
  - → Converted Date to datetime, extracted Year, Month
  - → Cleaned inconsistent values, removed nulls
  - → Renamed columns for clarity (e.g., Amount_USD → Total_Investment)
- Used Python to derive key financial metrics:
  - → **CAC = Marketing Spend / New Customers**
  - → **LTV = Revenue per Customer × Assumed Retention Multiplier**
  - → **Burn Rate = Expenses – Revenue**
  - → **LTV:CAC Ratio = LTV / CAC**

Step 3: Dashboard Development – Power BI

- Imported cleaned and KPI-enriched data tables.
- Created a four-page dashboard with the following structure:
  - → **Page 1: Overview Dashboard** – KPI cards, revenue & expense trends, burn rate, slicers
  - → **Page 2: Investment Analysis** – Investment by city, industry, and time
  - → **Page 3: KPI Deep Dive** – LTV vs CAC trend, marketing spend vs revenue, ratio charts
  - → **Page 4: Cohort Insights** – Startup additions over time and city-wise patterns

5. Conclusion

This project showcases how simulated financial datasets can still yield valuable analytical insights when structured thoughtfully. The final Power BI dashboard offers a holistic view of startup performance across multiple KPIs, enabling better strategic planning and investor communication.
