

Exploratory Data Analysis Report for Mobile Phone Market Analysis.

Introduction:-

This report describes the findings of an exploratory data analysis (EDA) conducted on a mobile phone dataset to better understand the factors that influence prices, ratings, and customer preferences. The analysis focuses on univariate and bivariate analyses, allowing for better business decisions. The tools utilized were Excel because the data was provided as mobile_dataset.csv, which was then uploaded to Postgresql for analysis. Null values were removed, and some new categories were added, such as price_range, rating_category, and so on. Next, the cleaned dataset is uploaded to PowerBI to generate insights.

Objective:-

Conduct an exploratory data analysis (EDA) to better understand the distribution and correlations between various phone attributes.

To uncover critical factors that influence phone costs and ratings.

To provide valuable information for marketing, pricing, and product development.

Dataset Overview

- Total Phones Analyzed: 729
- Price Range: 1,999 to 98,999
- Rating Range: 0.00 to 8.58

Univariate Analysis Key Metrics:

• Price Distribution:

- 1) The prices range from 1,999 to 98,999.
- 2) Most phones fall into two categories: Low Mid Range (10,000 to 25,000) and High Mid Range (25,000 to 50,000).
- 3) The bulk of phones cost less than 50,000, with only a few high-end models above this price range.

• Ratings Distribution:

- 1) The average phone rating is approximately 4.29, showing general consumer happiness.
- 2) Ratings are centered between 3.5 and 4.5, with very few phones rated less than 2.0 or more than 8.0.

- **Memory types:**

- 1) Memory choices vary from 1 GB RAM | 8 GB Storage to 8 GB RAM | 128 GB Storage.
- 2) Phones with larger memory configurations (e.g., 6 GB RAM | 128 GB storage) are more common in the dataset.

- **Battery capacity:**

- 1) The dataset comprises phones whose battery capacity range from 3000 mAh to 6000 mAh.
- 2) The most frequent battery capacity is 5000 mAh, indicating that consumers demand a longer battery life.

Bivariate analysis.

- **Processor vs Rating:**

- 1) Phones with Qualcomm Snapdragon processors typically obtain higher ratings than those with MediaTek or other CPUs.
- 2) The type of processor has a considerable impact on customer satisfaction, indicating that performance is crucial.

- **Battery vs Rating:**

- 1) Higher battery capacities (e.g., 5000 mAh) correspond to higher ratings.
- 2) Phones with smaller batteries typically receive lower scores, underlining the significance of battery life to users.

- **Memory Versus Rating:**

- 1) Phones with more RAM and storage capacity (e.g., 6 GB RAM | 128 GB Storage) typically obtain higher scores.
- 2) Consumers prefer increased memory since it is related with improved performance and multitasking abilities.

- **Camera Type versus. Ratings and Reviews:**

- 1) Phones with advanced camera setups (e.g., 48 MP + 8 MP) receive higher ratings and good feedback.
- 2) Camera quality has a huge impact on ratings and the amount of reviews.

- **Brand Analysis:**

- 1) Brands such as Realme, Vivo, and Asus appear frequently in the sample, indicating a high correlation between brand reputation, user reviews, and ratings.

Recommendations and actionable insights.

- 1) Target high-rated segments.
- 2) Focus on advertising phones with Qualcomm Snapdragon processors, more memory, and larger batteries, as these obtain higher ratings.

Product Development:

- 1) Invest on enhancing battery life and camera quality, as these are important aspects determining customer satisfaction.

Branding Strategy:

- 1) Leverage the success of companies such as Realme and Vivo to attract additional customers by stressing quality and value for money.

Pricing strategy:

- 1) Consider aggressive pricing in the Low and High Mid Range categories, which account for the vast majority of phones and customer preferences.

Conclusion.

The EDA supplied vital information about customer preferences and the fundamental elements influencing mobile phone costs and ratings. Using these insights, Chakr Innovation may better improve its product offers, pricing, and marketing tactics.