📊 Customer Data Quality & Insights Analysis

Tool Used: Microsoft Excel
Project Type: Exploratory Data Analysis (EDA) & Data Cleaning

Business Objectives

This project focused on analyzing customer data to support business decision-making. The core objectives included:

- **Improving Data Quality** – Standardizing customer records for accurate and consistent analysis.

- **Generating Customer Insights** – Analyzing age, income, and location distribution to better understand the customer base.

- **Refining Marketing Strategy** – Identifying key demographics for targeted campaigns.

- **Validating Contact Information** – Checking for accuracy in phone numbers to ensure effective communication.

Data Cleaning & Preparation

- Checked for missing or inconsistent data in key fields (age, income, phone numbers).

- Created a new column to validate phone number length using Excel formula =LEN(cell).

- Standardized data formats for analysis (e.g., income levels, address fields).

Visualizations & Analysis

1. Age Distribution – Histogram

- Visualized to identify major age groups among customers.

- Insight: Majority were between 25–40 years, suggesting a strong presence of young professionals.
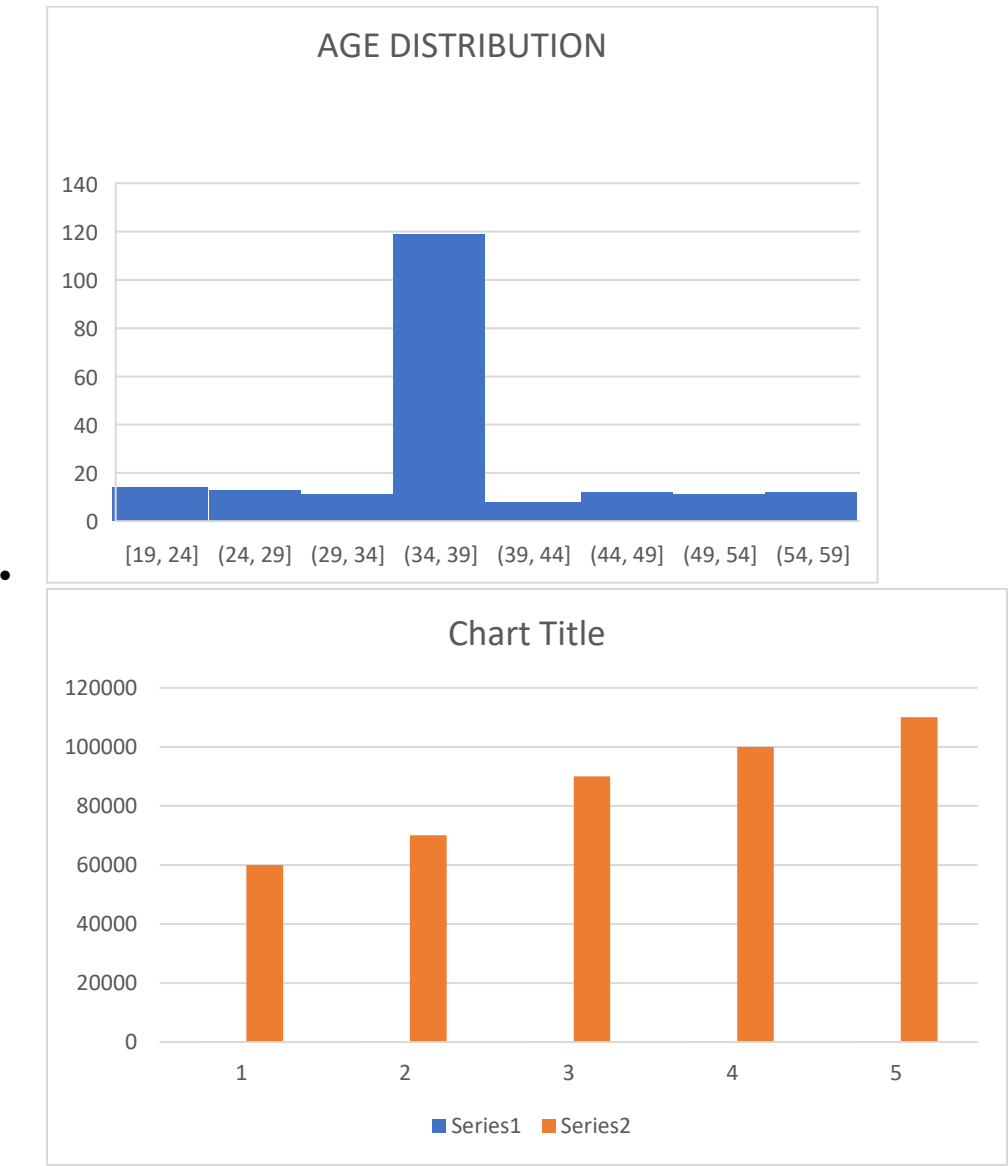
2. Income Levels – Bar Chart

- Analyzed income brackets to assess financial capacity.

- Insight: Most customers earned below $50,000, indicating a price-sensitive market.
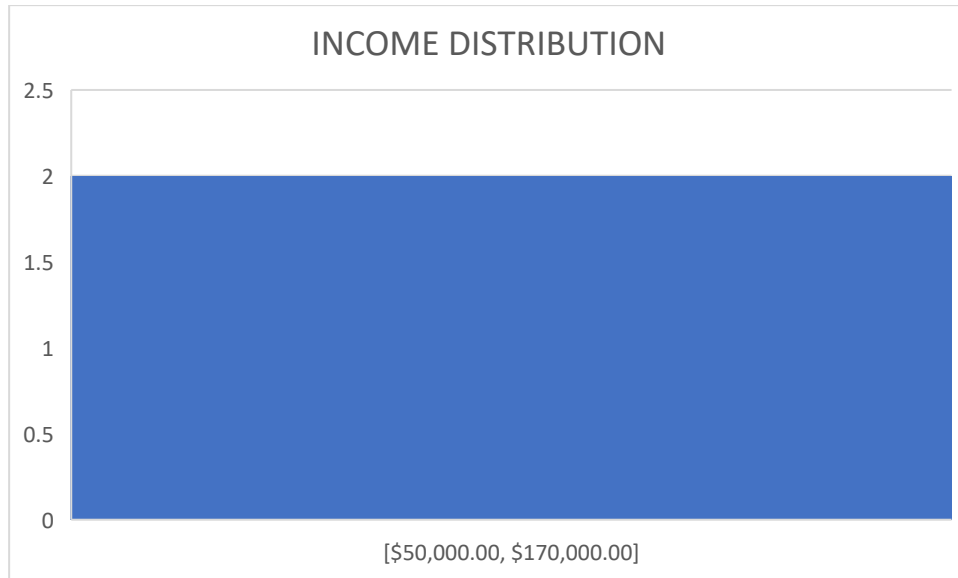
3. Customer Location – Pie Chart

- Displayed customer spread by city.

- Insight: High concentration in a few major cities, supporting location-specific marketing.

4. Phone Number Validity – Bar Chart

- Categorized phone numbers as valid or invalid.

- Insight: A significant portion of phone numbers were incorrect, highlighting the need for better form validation.

AGE DISTRIBUTION

(Chart: Age distribution histogram with x-axis labels [19, 24], (24, 29], (29, 34], (34, 39], (39, 44], (44, 49], (49, 54], (54, 59] and y-axis from 0 to 140.)

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Chart Title

(Bar chart with x-axis labels 1, 2, 3, 4, 5 and y-axis from 0 to 120000. Legend: Series1, Series2.)

INCOME DISTRIBUTION

[$50,000.00, $170,000.00]

Recommendations

- **Targeted Marketing:** Customize campaigns based on dominant age and income groups.

- **Improve Data Collection:** Enforce formatting rules for phone numbers and emails to reduce invalid entries.

- **Focus on Digital Engagement:** If customers are geographically dispersed, invest in scalable online marketing and support channels.

Key Skills Demonstrated

- Data cleaning & validation in Excel

- Data visualization & dashboard creation

- Interpreting trends to support business strategy

- Translating analysis into actionable business recommendations