

# Data Analyst Assignment: Customer Conversion Analysis

This assignment is designed to assess your skills in data analysis and visualization using Power BI or other tools (python - seaborn/matplotlib etc). Your task is to analyze a sample customer dataset to uncover insights, identify patterns, and present your findings in a clear and concise dashboard.

## The Scenario

Need to understand which customers are likely to upgrade to a new premium service. You have been given a dataset containing information about a sample of customers, which you can find in the `RVS1_OPT.csv` file.

The target variable is  $Y1$ , where 1 indicates the customer upgraded to the premium service, and 0 indicates they did not. The  $X$  variables represent different attributes of these customers.

## The Dataset (`RVS1_OPT.csv`)

The dataset contains 10 columns and 33525 rows of customer data.

## Data Dictionary

- **X1:** Customer ID
- **X2:** Annual Income (\$)
- **X3:** Customer Segment ID (Internal company code)
- **X4:** Age (Years)
- **X5:** Customer Tenure (Months with the company)
- **X6:** Subscription Tier (1 = Basic, 2 = Standard)
- **X7:** Average Website Visits (Per Month)
- **X8:** Support Tickets Logged (Lifetime)
- **X9:** Total Spend on Non-Premium Products (\$)
- **Y1:** Converted to Premium (1 = Yes, 0 = No)

## Your Tasks

### Part 1: Data Preparation & Exploration

1. **Load Data:** Load the `RVS1_OPT.csv` file into Power BI.
2. **Data Cleaning & Transformation:**
  - Ensure all columns have appropriate data types.
  - Create a new measure for “**Conversion Rate**”.
  - Briefly note any data quality issues, outliers, or interesting characteristics you observe.

### Part 2: Analysis & Insight Generation

Your main goal is to understand what drives a customer to convert ( $Y1 = 1$ ). Answer the following questions using your analysis:

1. **Overall Picture:** What is the overall conversion rate?
2. **Key Influencers:** Which features seem to be the most important in predicting whether a customer will convert?

3. **Correlations:** Explore the relationships *between* the numerical features themselves. Are any variables strongly correlated? A correlation matrix/heatmap would be an excellent way to show this.

### Part 3: Visualization & Dashboarding

Create a single-page Power BI dashboard to present your findings. The dashboard should be clean, easy to understand, and tell a story. Include a variety of appropriate visuals, such as:

- **KPI Cards** for key metrics (e.g., Total Customers, Conversion Rate).
- **Bar/Column Charts** to compare groups (e.g., Converted vs. Not Converted).
- **Histograms or Box Plots** to understand the distribution of key numerical features like Annual Income or Age.
- **Slicers/Filters** to make the dashboard interactive.

### Part 4: Summary & Recommendations

Based on your dashboard and analysis, provide a brief summary.

1. **Top 3 Insights:** List the three most important insights you discovered.
2. **Customer Profile:** Describe the profiles of customer who is *most likely* to convert.
3. **Recommendations:** Based on your findings, what would you recommend the marketing team do to increase conversions?
4. **Limitations:** What are the limitations of this analysis?

## Deliverables

Please submit the following:

1. **The Power BI File:**
  - File format: .pbix
  - File naming convention: FirstName\_LastName\_Assignment.pbix or
  - Python notebook: FirstName\_LastName\_Assignment.ipynb (colab/jupyter notebook) with data pre-processing and analysis (all possible visualizations)
2. **A Written Summary:**
  - A brief document containing your answers to **Part 4**
  - File format: PDF or Word Document
  - File naming convention: FirstName\_LastName\_Summary.pdf

## Evaluation Criteria

You will be evaluated on:

- **Technical Skills:** Correctly loading and transforming the data .
- **Analytical Thinking:** The depth and accuracy of your insights.
- **Visualization:** The clarity, effectiveness, and design of your dashboard.
- **Communication:** How well you summarize your findings and provide actionable recommendations.

Good luck! We look forward to seeing your work.