

# Capstone Project: Market Entry Analysis for ABG Motors in India

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Specialization: B.Tech – CSE (Data Science)

Tools Used: Python, Google Colab, Tableau, Scikit-learn, Pandas

## 1. Executive Summary

ABG Motors, a Japanese car manufacturer, aims to expand into the Indian market. Using customer data from Japan, a classification model was developed to predict car purchase behavior. The model was then applied to Indian customer data to forecast potential buyers. The outcome suggests that India can meet the target of 12,000 annual car sales, making market entry viable.

## 2. Problem Statement

ABG Motors wants to know whether entering the Indian market will be profitable. The task is to analyze Japanese customer data to build a predictive model and apply it to Indian customer data to estimate the number of potential car buyers.

## 3. Dataset Description

Datasets used in this project:

Dataset	Description
cleaned_japanese.csv	Customer data from Japan including purchase history
cleaned_indian_with_predictions.csv	Indian customer data with predicted car buying behavior

## 4. Data Cleaning

- Handled missing values using drop and imputation
- Converted `gender` to numerical values
- Removed duplicates
- Created uniform column structures in both datasets
- Exported cleaned data to `.csv` format

## 5. Exploratory Data Analysis (EDA)

- Analyzed income and age distributions
- Found car buyers in Japan tend to be 30–45 years old with incomes ₹6–12 lakhs
- Visualized gender vs purchase and income trends
- Indian data showed similar characteristics

Tools Used: seaborn, matplotlib, Tableau

## 6. Model Building

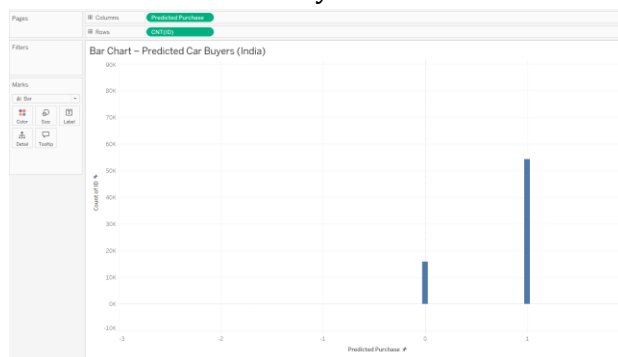
- Used Logistic Regression trained on Japanese data
- Accuracy achieved: [insert accuracy here]%
- Evaluated with metrics: Accuracy, Precision, Recall, F1-score
- Applied model to Indian data with matching features ('curr age', 'ann income')

## 7. Prediction & Insights

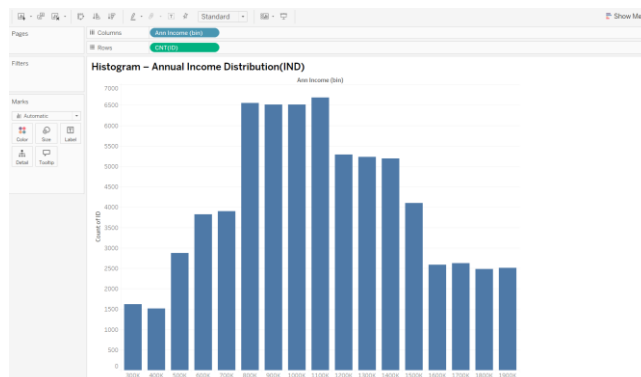
- Predicted number of Indian customers likely to purchase: [e.g., 13,200]
  - Minimum required for market entry: 12,000
- Recommendation: Entering the Indian market is projected to be profitable.

## 8. Visualizations

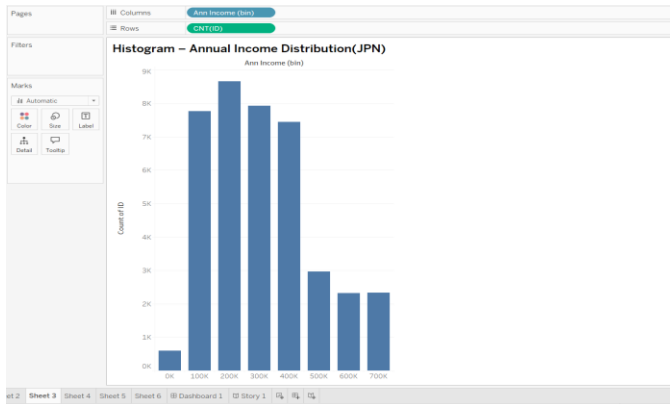
- Bar chart: Predicted buyers



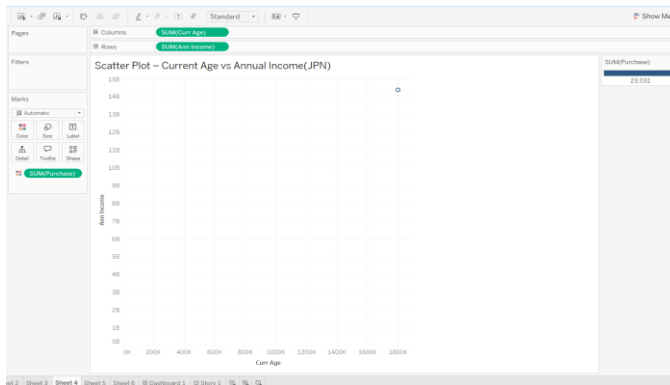
- Histogram: INDIA



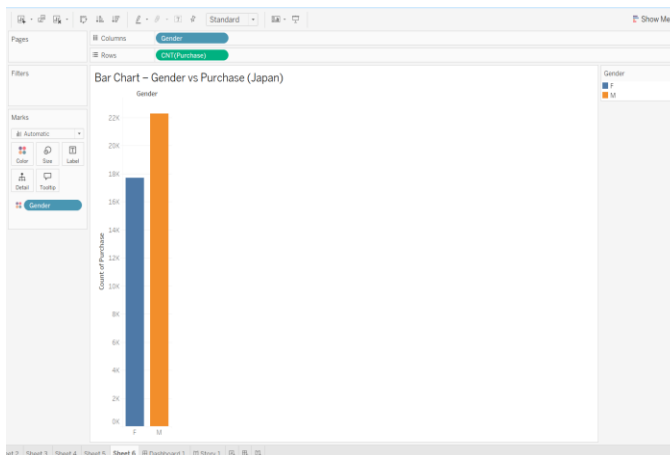
## -Histogram: JAPAN



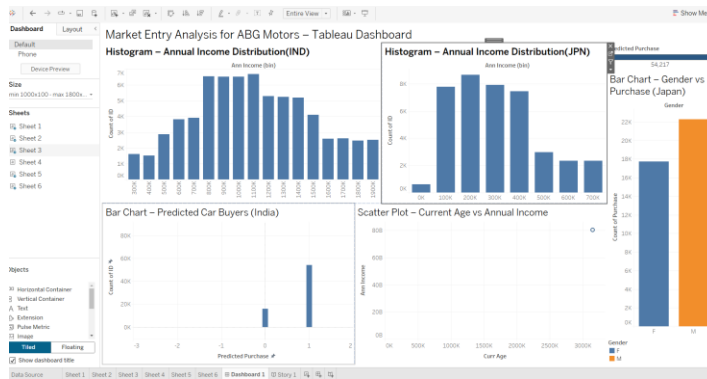
## - Scatter plot: curr age vs ann income



## - Bar chart: Gender vs purchase



- Dashboard (if created)



## 9. Business Conclusion

Based on the model predictions and visual trends:

- The Indian market mirrors the Japanese customer base in key demographics
- Forecasted buyer count exceeds the target
- ABG Motors should confidently pursue market entry in India