

Market Entry Analysis for ABG Motors in India

1. Title Page

Project Title: Market Entry Analysis for ABG Motors in India

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2. Abstract

This project explores the feasibility of ABG Motors, a Japanese automobile company, entering the Indian market. By analyzing customer purchase behavior from Japanese datasets and predicting similar trends in India, we aim to determine whether a minimum sales threshold of 12,000 cars can be met annually. Using logistic regression on Japanese data and applying it to Indian customer data, we predicted that over 34,000 individuals in India are likely to buy cars, suggesting a strong market opportunity.

3. Introduction

ABG Motors is considering expansion into India. To validate market similarity and profitability, a data-driven approach was adopted using real sales and demographic data from Japan and India. By understanding customer patterns, the project aims to forecast Indian sales potential and support strategic decisions.

4. Objective

To forecast whether the Indian market can generate at least 12,000 car purchases per year, based on behavior patterns modeled from the Japanese dataset.

5. Data Collection

- Japanese Dataset: Used to train the classification model
- Indian Dataset: Used to test the model and forecast potential buyers
- Source: Provided by Internshala Capstone (CSV/Excel format)

6. Methodology

Tools Used:

- Python (Pandas, NumPy, Scikit-learn, Matplotlib)
- Tableau (for visualization)

Steps:

- Data Cleaning & Preprocessing: Removed missing values, normalized data
- EDA: Insights on age, income, and purchase behavior
- Model Building: Logistic Regression applied on Japanese dataset
- Prediction: Applied model to Indian data
- Evaluation: Accuracy on Japanese test data: 85.9%

7. Business Interpretation

Income and Age were strong predictors of car purchase behavior. Higher income and mid-age categories had higher purchase rates. The trained model's coefficients confirmed a positive relationship between income level and likelihood of purchase.

8. Model Evaluation

- Model Used: Logistic Regression
- Train-Test Split: 70/30
- Accuracy: 85.9%
- Precision & Recall: Balanced
- Confusion Matrix: Low false positives/negatives

9. Predicted Buyers in Indian Market

Total predicted car purchasers: 34,971

This exceeds the target threshold of 12,000 → Market entry is justified.

10. Visualizations Using Tableau

Included visual insights:

- Purchase prediction by Gender
- Purchase distribution across Age Bins
- Income Bins vs Purchase
- Pie chart of predicted buyers
- Maintenance-related purchasing patterns

11. Conclusion

Based on logistic regression modeling and predictive analysis, the Indian market shows promising potential for ABG Motors. With a predicted 34,971 likely buyers, the company is likely to surpass its sales targets, making Indian market entry a favorable strategy.

12. Limitations

- Dataset only covered one city per country
- External economic and cultural factors not modeled
- Accuracy may vary in real-world scenarios

13. References

- Internshala Dataset
- scikit-learn documentation
- Tableau Visuals (internshalaproject.pdf)