Economic & Business Data Analysis Case Study

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Tools Used: Microsoft Excel (COUNTIFS, SUMIFS, AVERAGEIFS, Pivot Tables), Data Analysis

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Abstract

This case study involves analyzing a dataset of households and loan records to evaluate **market trends, consumer behavior, and financial inclusion metrics**. Using Excel-based analysis, we computed **fractions, proportions, ratios, averages, and growth rates** across various dimensions such as gender, loan type, and region. The insights provide a clear picture of **loan distribution, vehicle ownership, borrowing patterns, and market opportunities**.

Datasets

1. **Household Data**

   - Urban/Rural status

   - Two-wheeler ownership

   - Purchase intent

   - Gender dominance

   - Electricity availability

   - Loan eligibility

2. **Loan Data**

   - Loan ID, Quarter, Fiscal Year

   - Loan segment (Commercial, Retail, Microfinance, Credit Card)

   - Lender Name (NBFC, Private Bank, PSU Bank)

   - Original loan size, outstanding loan amount

   - Borrower Age, Income

   - New-to-Credit status

Objective

The goal of this analysis is to:

- Quantify **market shares** of lenders and vehicle types

- Measure **consumer interest** in two-wheelers and electric vehicles

- Assess **financial eligibility and loan behavior**

- Identify **gender- and income-based trends**

- Evaluate **growth patterns across fiscal years**

Key Questions Analyzed

The study focused on **20 analytical and economic questions**, including:

1. Market and Proportion Analysis

- Fraction of households with one two-wheeler: **0.57**

- Households without a two-wheeler but interested in buying: **0.10**

- Market share of Commuter bikes: **0.50**

- Target market share for electric two-wheelers (24-hour electricity): **0.20**

2. Growth and Trend Calculations

- Growth percentage of commercial loans by Private Banks (FY19 → FY20): **23%**

- Relative difference in new Retail borrowers (FY21 vs FY20): **6%**

3. Average and Ratio Computations

- Ratio of Retail loan value by Private Bank to PSU Bank (FY21): **2.91**

- Difference in average Microfinance loan between FY20 & FY21: **2,543**

- Average credit card borrowings of males (FY20): **32,129**

4. Eligibility & Behavioral Economics

- Proportion of households eligible for a new loan: **0.71**

- Proportion eligible for low-interest loan against FD: **0.75**

- Fraction of borrowers with credit history: **0.68**

5. Demographic Insights

- Lender giving highest average commercial loans to women (FY19): **PSU Bank**

- Female borrowers earning above average income: **32**

Analysis & Observations

1. **Loan Distribution**

   - NBFCs serviced nearly **49% of total loan value** in FY20, highlighting their dominance in lending.

   - Private Banks' Retail loans outperformed PSU Banks by **2.91x** in FY21.

2. **Borrower Behavior**

   - Around **68% of borrowers** have existing credit history, indicating moderate financial inclusion.

   - Female-dominant households show moderate interest in scooters (**25% ownership**).

3. **Vehicle Market Insights**

   - 57% of households own only one two-wheeler; 10% without a vehicle are interested in buying.

   - Limited 24-hour electricity constrains the potential market for electric two-wheelers to **20%**.

4. **Microfinance Growth**

   - Average Microfinance loans increased by **2,543** from FY20 to FY21, reflecting expansion of small-scale lending.

Skills Demonstrated

- **Excel Formulas & Functions:** COUNTIFS, SUMIFS, AVERAGEIFS, FILTER, logical formulas

- **Pivot Table Analysis:** Aggregating loan data by lender, gender, fiscal year

- **Proportions & Ratios:** Calculating market shares, borrower eligibility fractions

- **Economic Interpretation:** Linking data metrics to financial inclusion, growth trends, and consumer behavior

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Conclusion

This analysis demonstrates how **raw economic and business data** can be transformed into actionable insights. Using Excel-based computations, the study highlights:

- Key market trends across lenders and vehicle segments

- Borrower eligibility patterns and financial inclusion metrics

- Gender and income-based differences in borrowing and vehicle ownership

- Growth patterns and opportunities for targeted market interventions

This case study provides a **comprehensive framework for future economic and business analytics**, bridging data analysis with real-world financial insights.