FINANCIAL INCLUSION STATUS FOR WOMEN AND POOR ADULTS DURING THE *COVID-19 PANDEMIC*
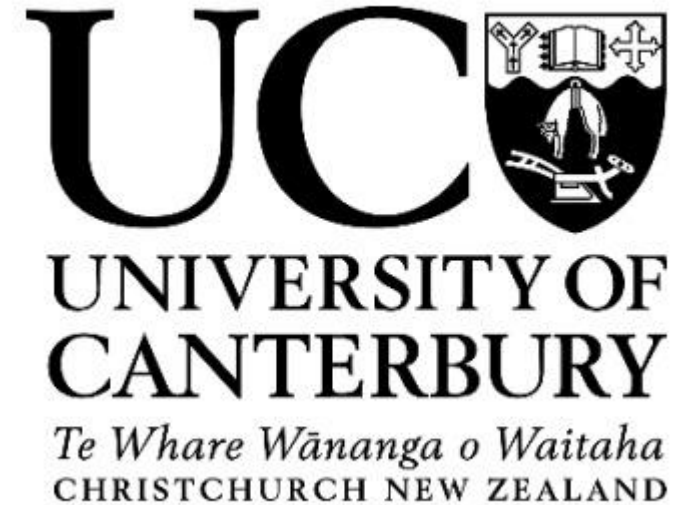
- Cathy Peng
- Chathurangi Godahewa Gamage
- Lizhu Dong
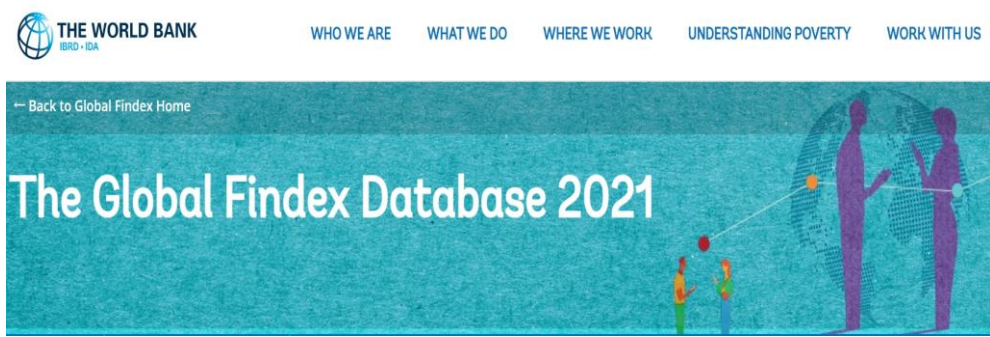
UC
UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

INTRODUCTION

Exploring the impact of COVID-19 on financial inclusion among women and the impoverished.

Objectives: Analyze financial access disparities.
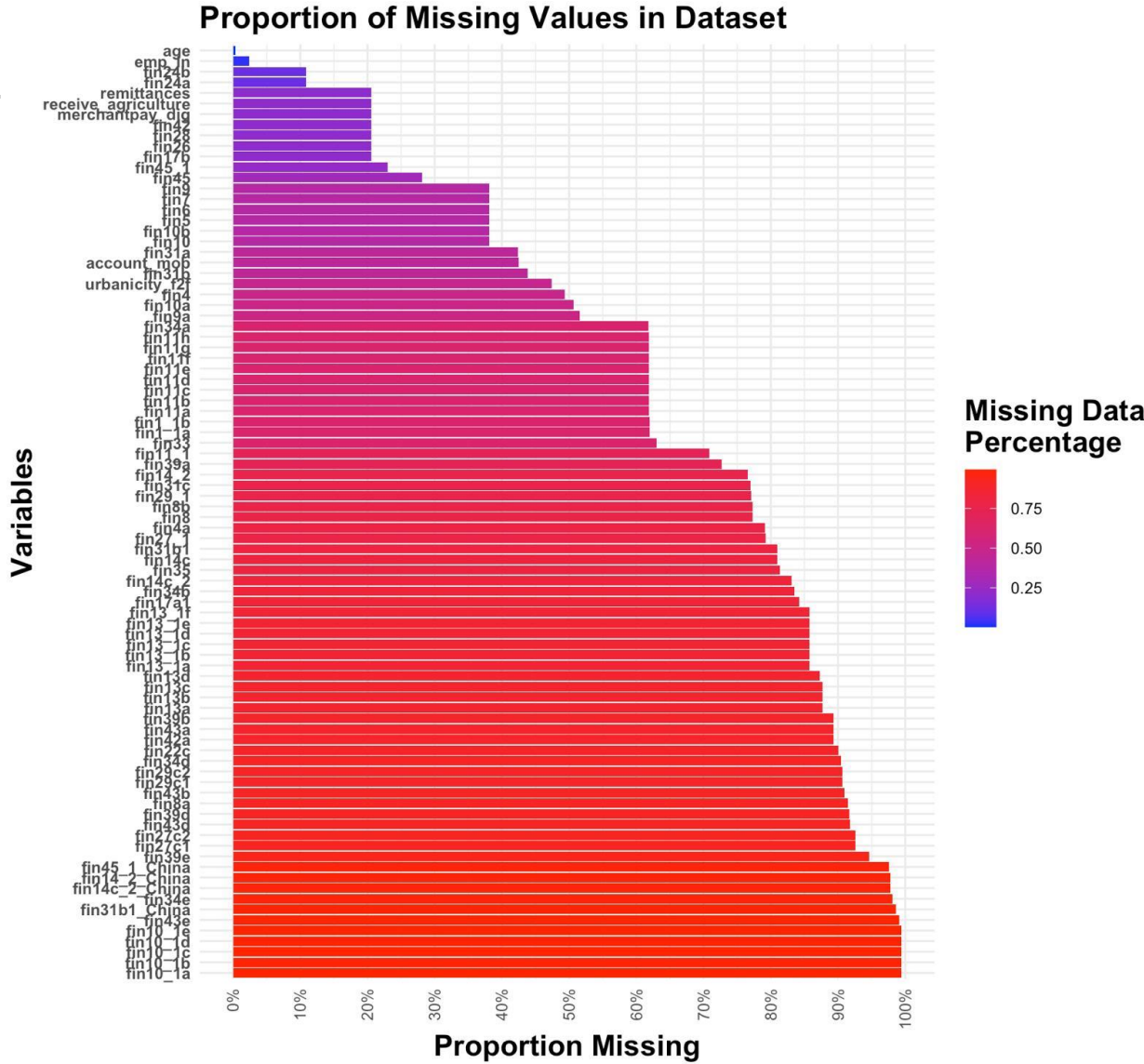
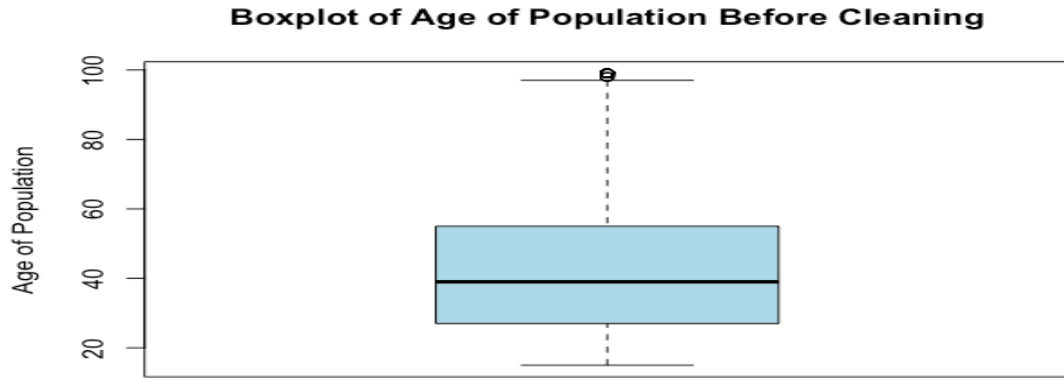# METHODOLOGY

Data Retrieval

Missing values →

Variable	Imputation Method
Age	Mean
Employ_status	Mode
Region	Logical Substitute

Proportion of Missing Values in Dataset

METHODOLOGY

Outliers ➡

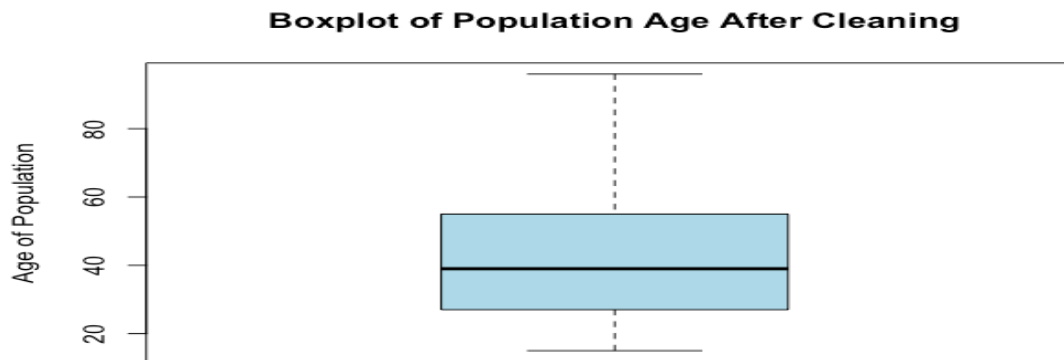Boxplot of Age of Population Before Cleaning

Data Cleaning

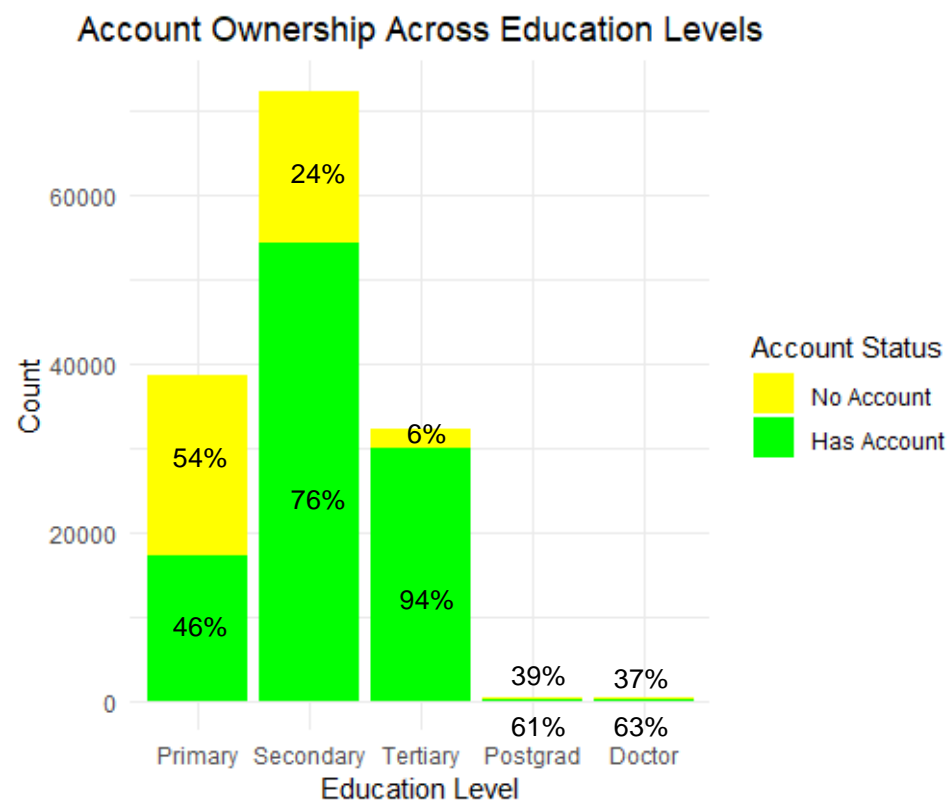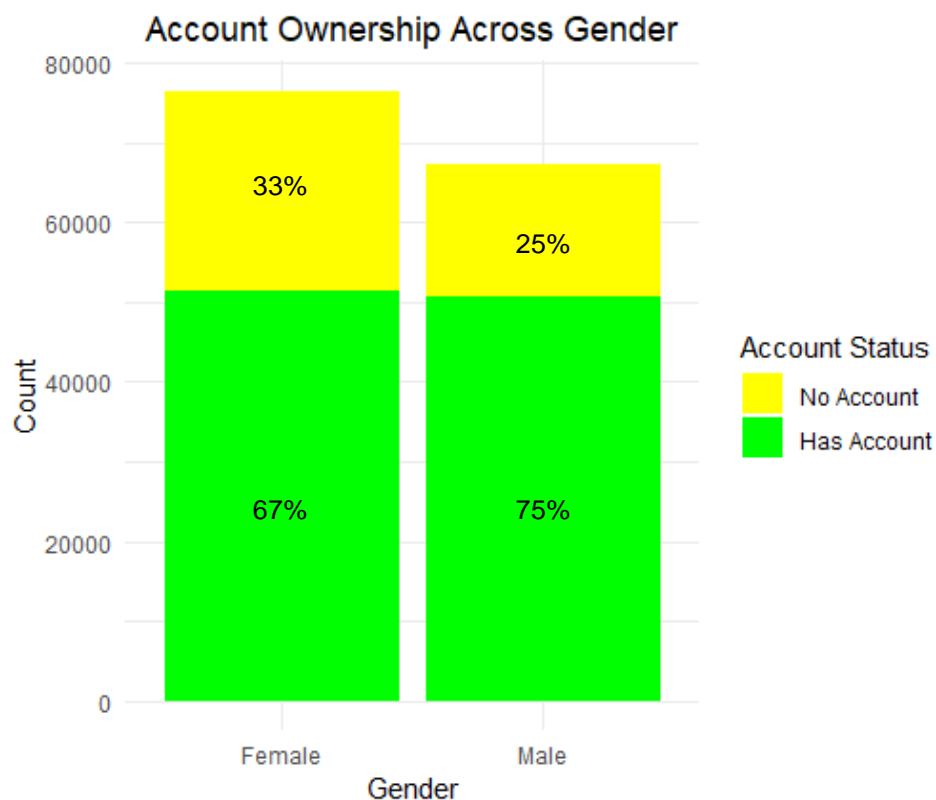Boxplot of Population Age After Cleaning

- Data Imbalance
- High Cardinality
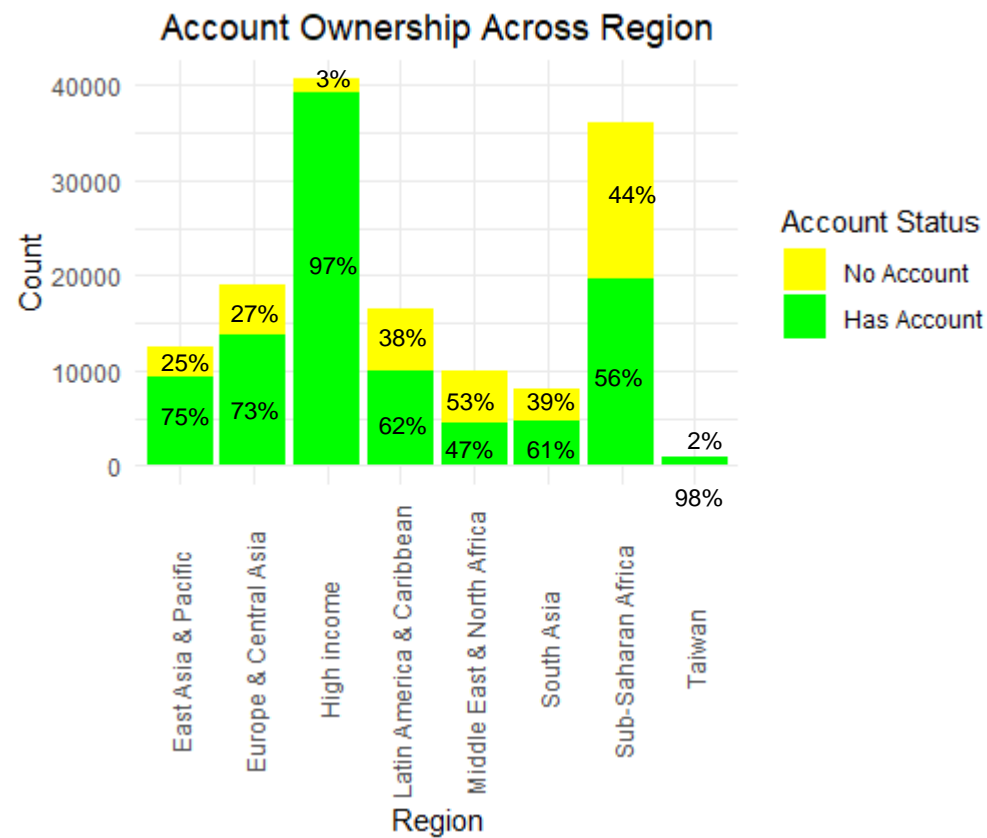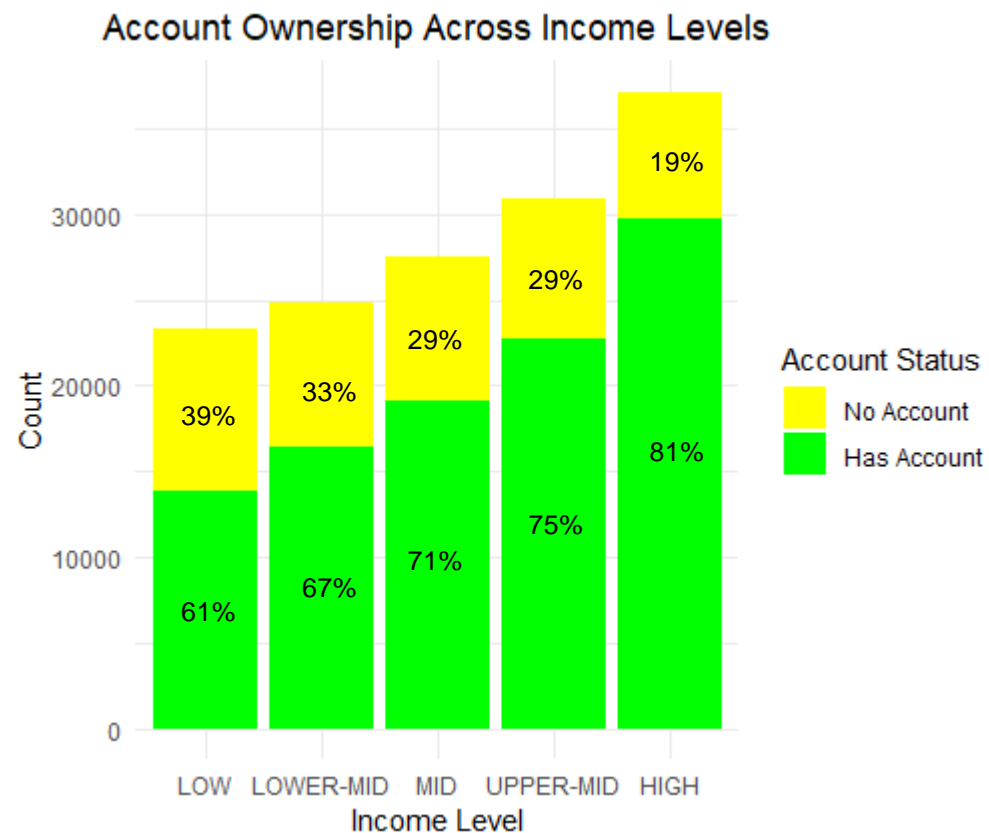- Near-Zero Variance

ANALYSIS

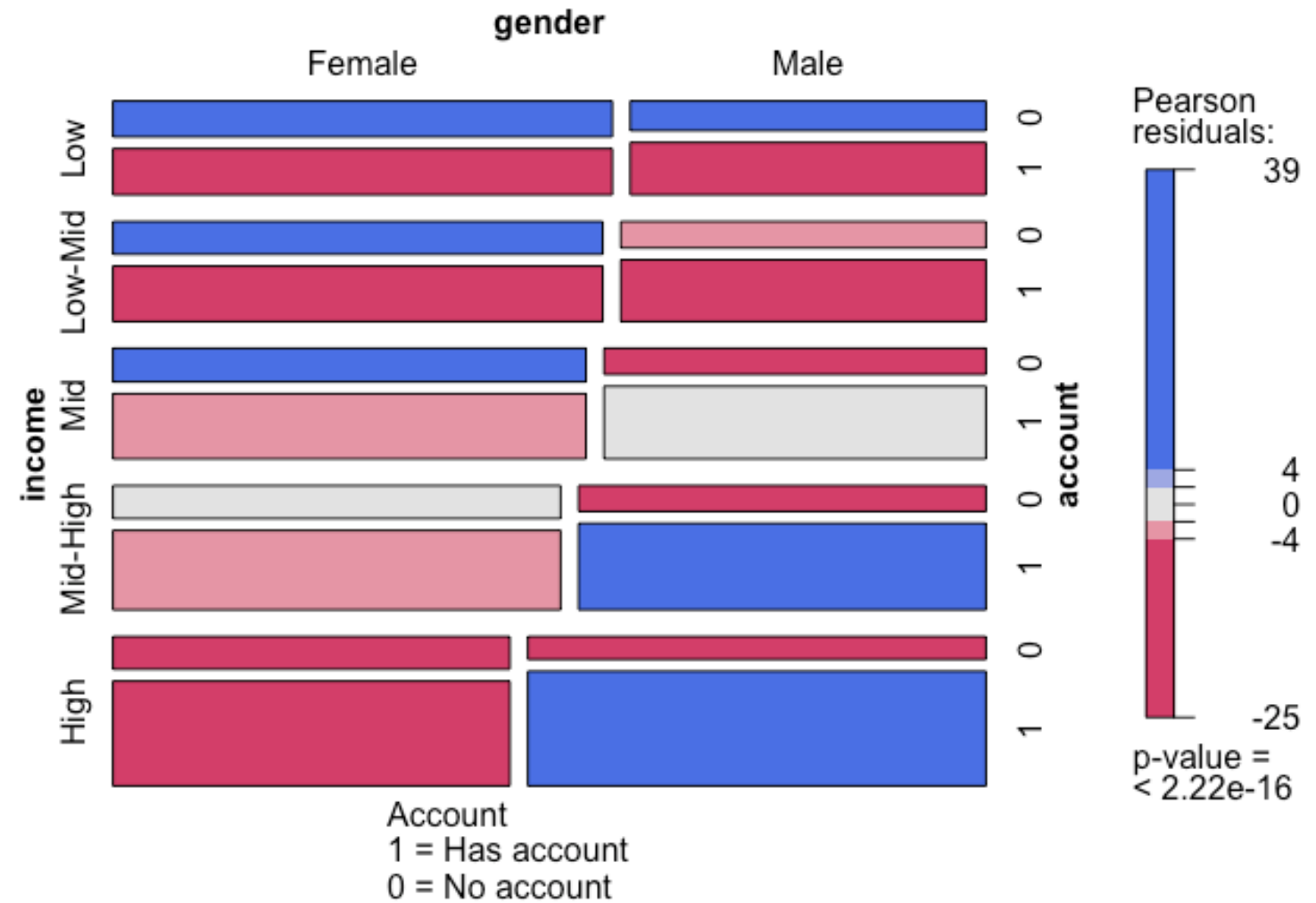**Distribution of Account Ownership by Gender and Education**

ANALYSIS

Distribution of Account Ownership by Income and Region

ANALYSIS

How Gender and Income are associated with Account Ownership

Model

predict

Demographic Data → Account Ownership

MODEL RESULTS

| MODEL	TRAINING METHOD	METRICS (GBT)	FEATURE IMPORTANCE
account = a0 + a1 * gender + a2 * income	• Logistic Regression • Random Forest • Gradient-Boosted Trees (GBTs)	precision: 0.72 recall: 0.92 accuracy: 0.70 auroc: 0.60	
account = a0 + a1 * gender + a2 * income + a3 * gender * income	Gradient-Boosted Trees (GBTs)	precision: 0.72 recall: 0.93 accuracy: 0.70 auroc: 0.61	
account = a0 + a1 * gender + a2 * income + a3 * age + a4 * emp + a5 * educ + a6 * region	Gradient-Boosted Trees (GBTs)	precision: 0.87 recall: 0.79 accuracy: 0.76 auroc: 0.84	region: 0.56 educ: 0.15 income: 0.12 age: 0.10 employ: 0.04 gender: 0.02

DISCUSSION

- **Feature Importance**

- Region, education, income as key factors;
- Gender's impact is minor.

- **Future Work**

Predicting other financial indicator.

Decreasing Importance
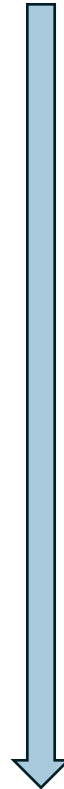
Demographic Variable	Financial Inclusion Indicator
Region	Account
Education Level	Borrowed
Income Level	Saved
Age	Anydigpayment
Employment Status	Remitttance
Gender	...

CONCLUSION

- **Findings**
  - o Region has major influence;
  - o Education impacts account;
  - o Low-income adults with less account;
  - o Slight gender disparity.
- **Strategies**
  - o Improving financial literacy.

ACKNOWLEDGEMENTS

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  - Prof. Arindam Basu (Faculty of Health)
  - Phil Davies
  - Nicki Cartlidge
- Data sources
  - Global Findex Database – World Bank Group

QUESTIONS........