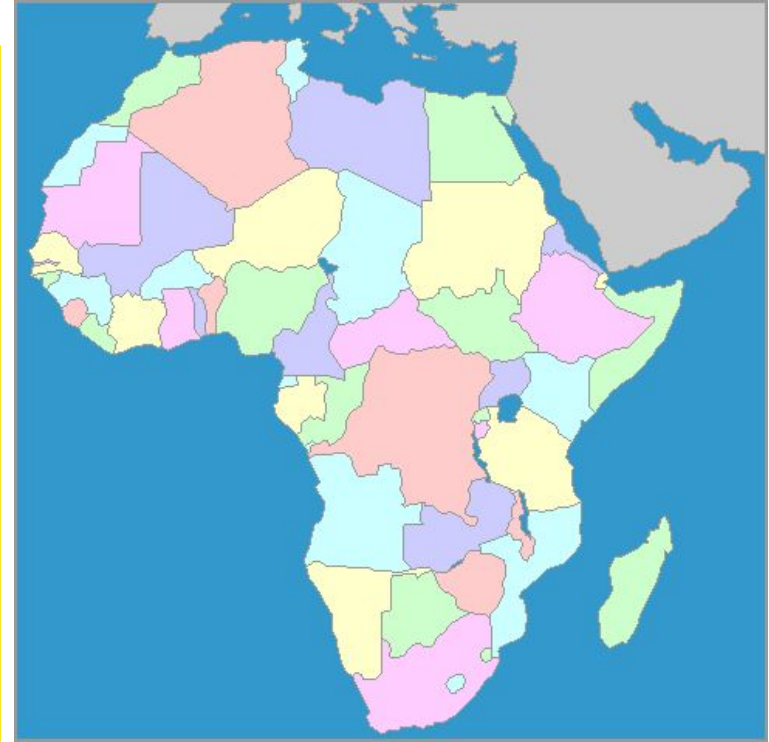


Africa Financial Inclusion

Sara Shankar

Business goal and Motivation

- Financial inclusion remains one of the main obstacles in Africa
- Kenya, Rwanda, Tanzania, and Uganda: Only 14% adults have access to bank accounts
- Access to bank accounts has been regarded as an indicator of financial inclusion



Evaluation Metric

unique_id	bank_account
uniqueid_1	1
uniqueid_2	0
uniqueid_3	1

$$MAE = \frac{1}{n} \sum |y - \hat{y}|$$

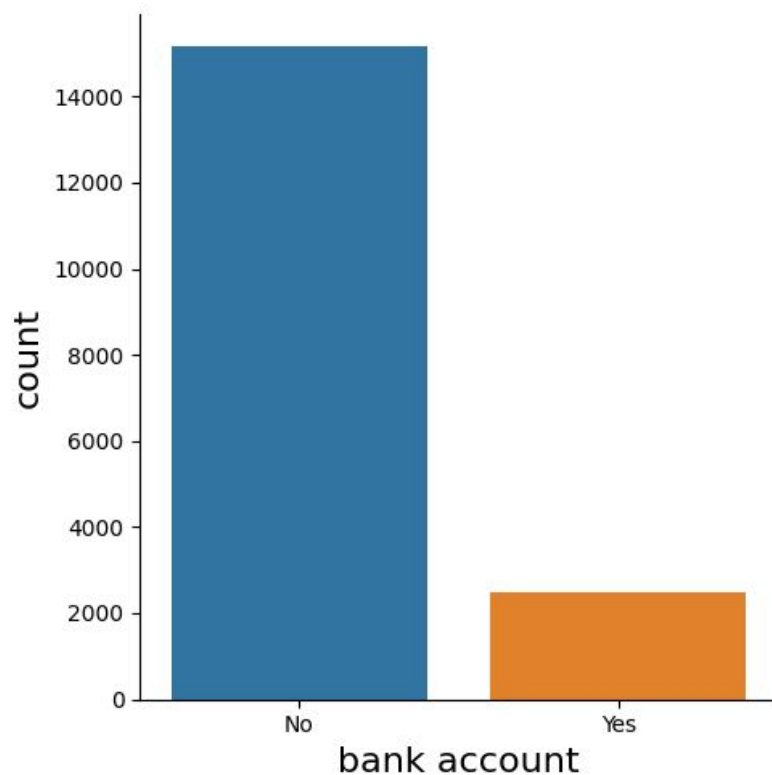
Diagram illustrating the Mean Absolute Error (MAE) formula:

- $\frac{1}{n}$: Divide by the total number of data points
- \sum : Sum of
- y : Actual output value
- \hat{y} : Predicted output value
- $|y - \hat{y}|$: The absolute value of the residual

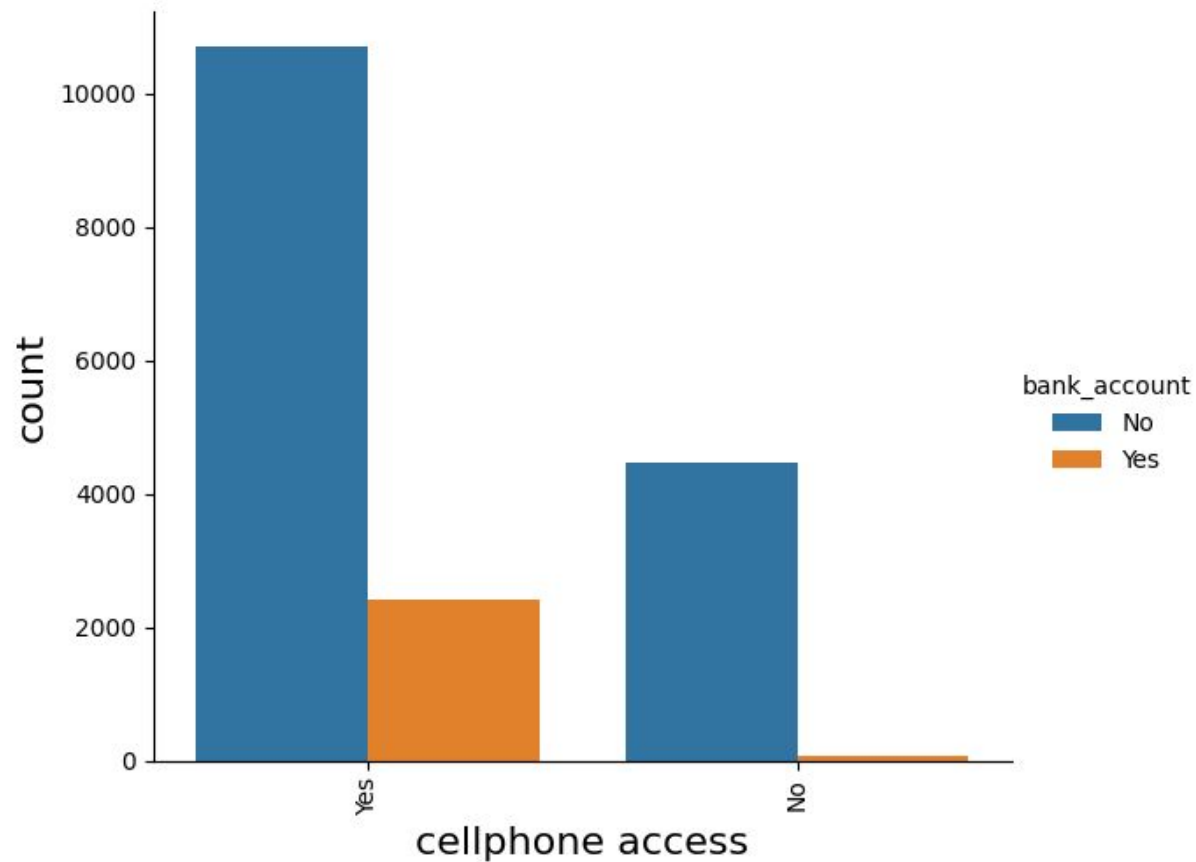
Data Source and Description

- Data was extracted from various **Finscope surveys** ranging from 2016 to 2018
- **23524 Rows and 13 Columns**
- Columns: **unique id, country, year, location type, cellphone access, gender, relationship with head, marital status, education level, job type, age, household size, bank account status**

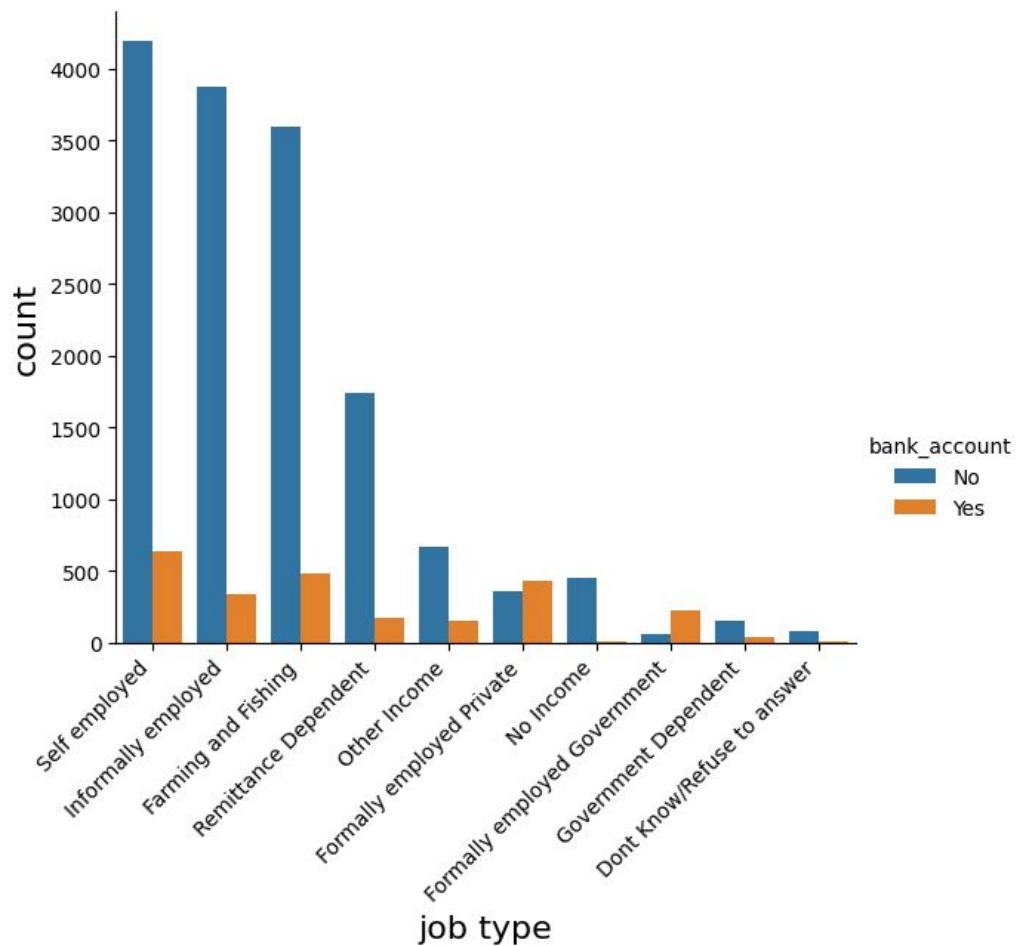
Number of people with bank accounts



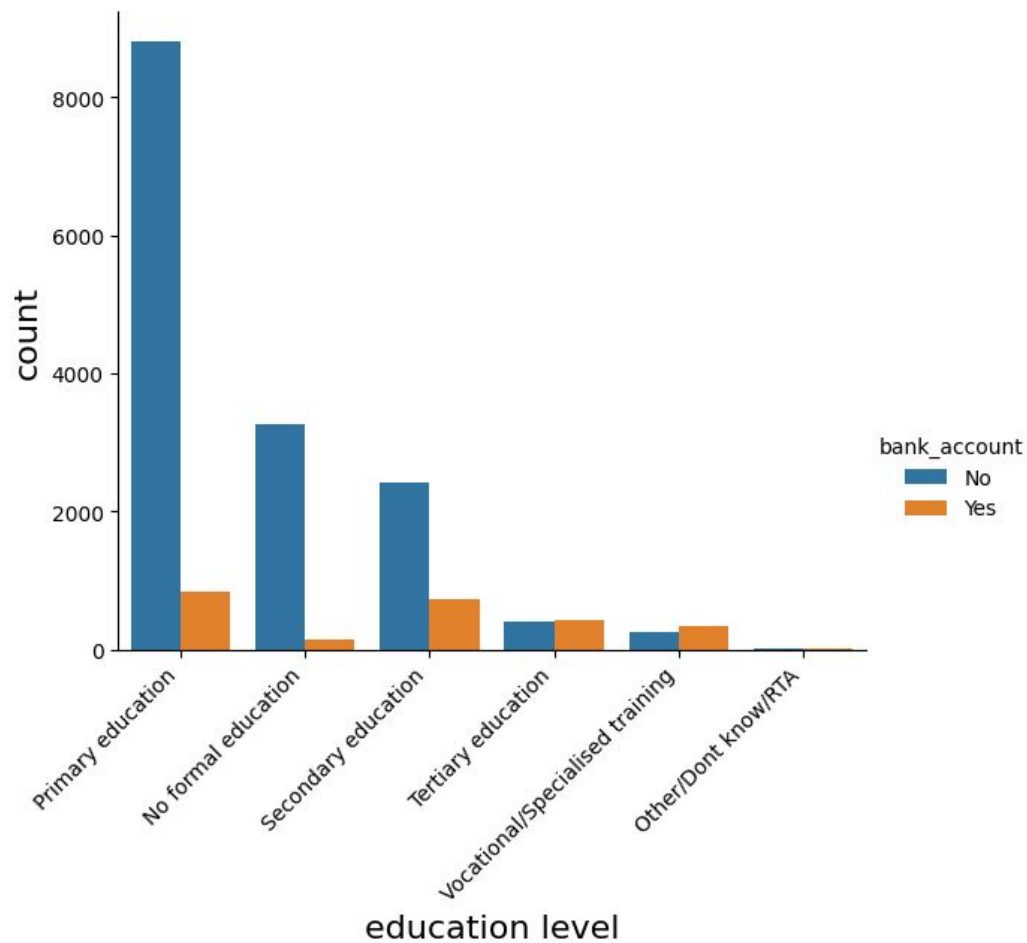
Cellphone access and bank account access



Job type and bank account access



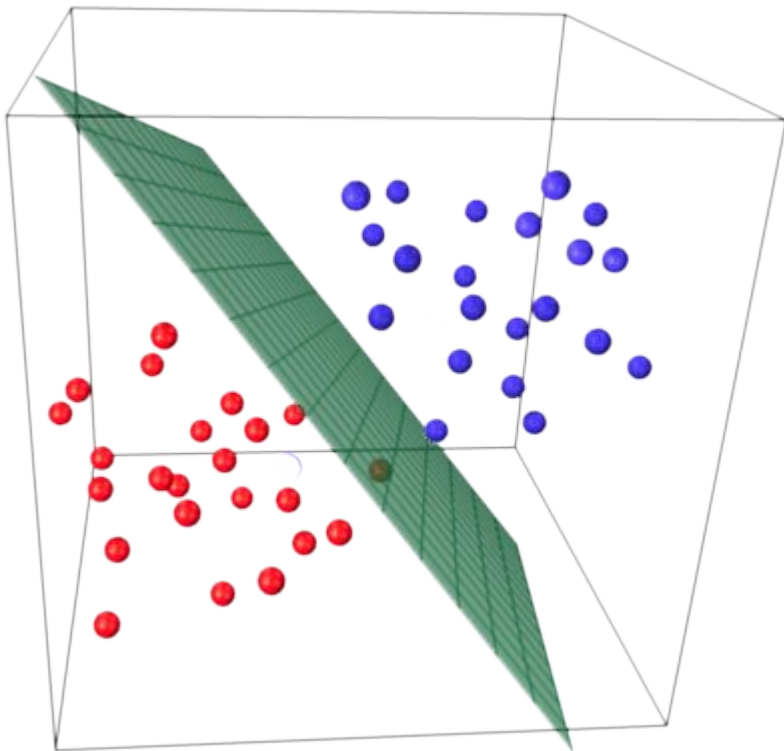
Education level and bank account access



Challenges

- Imbalanced data
- No straightforward way to predict bank account access
- Partial information present in each of the features

Baseline Model: Logistic Regression



Baseline MAE: 0.305