

Customer Churn Prediction

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Introduction

Predicting Customer Churn in the Banking Sector

High Competition

Industry is highly competitive



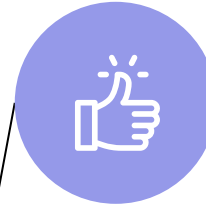
Churn Prediction

How many people did we lose?



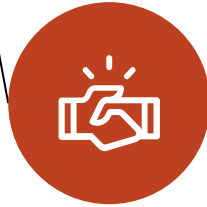
Timely Actions

Measure Churn Reduction



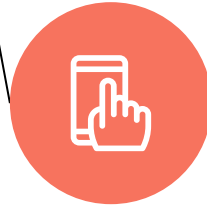
Relationship

Retaining customers is key



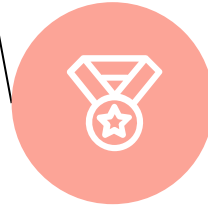
Banking Data

Customers churned or not



Quality Service

Provide better services



Business Problem

Key Factors affecting Churn



1

Why do customers churn

- Reasons for customers to leave
- Customer Demographics
- Demographics relation to churn



2

Retention Strategies

- Predict churn based on data
- Factors that cause churn
- Devise strategies to combat same



3

Loyalty Conversion

- Consistently Reduce churn
- Customer Acquisition
- Customer Loyalty



4

Effective targets

- Better Targets and Results
- Ease in Operations
- Increase Banking Market Share

Exploratory Data Analysis

Target Variable Distribution

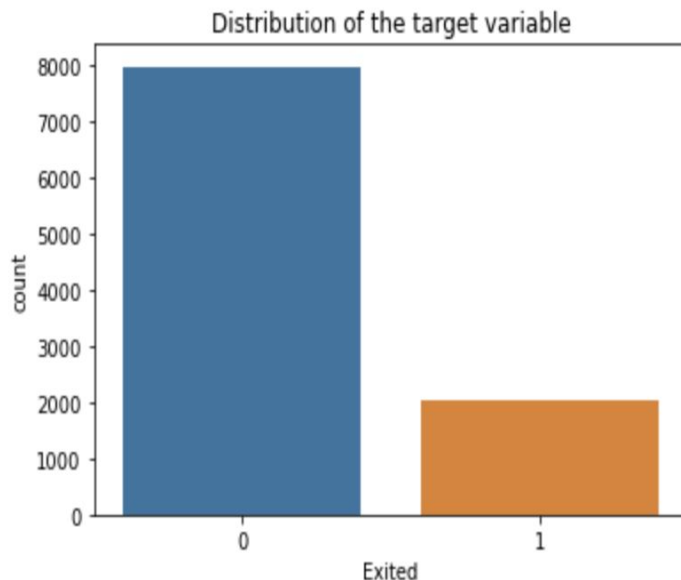
80%

Retention

8000 customers did not churn

Dataset Imbalance

Common problem when modelling churn



20%

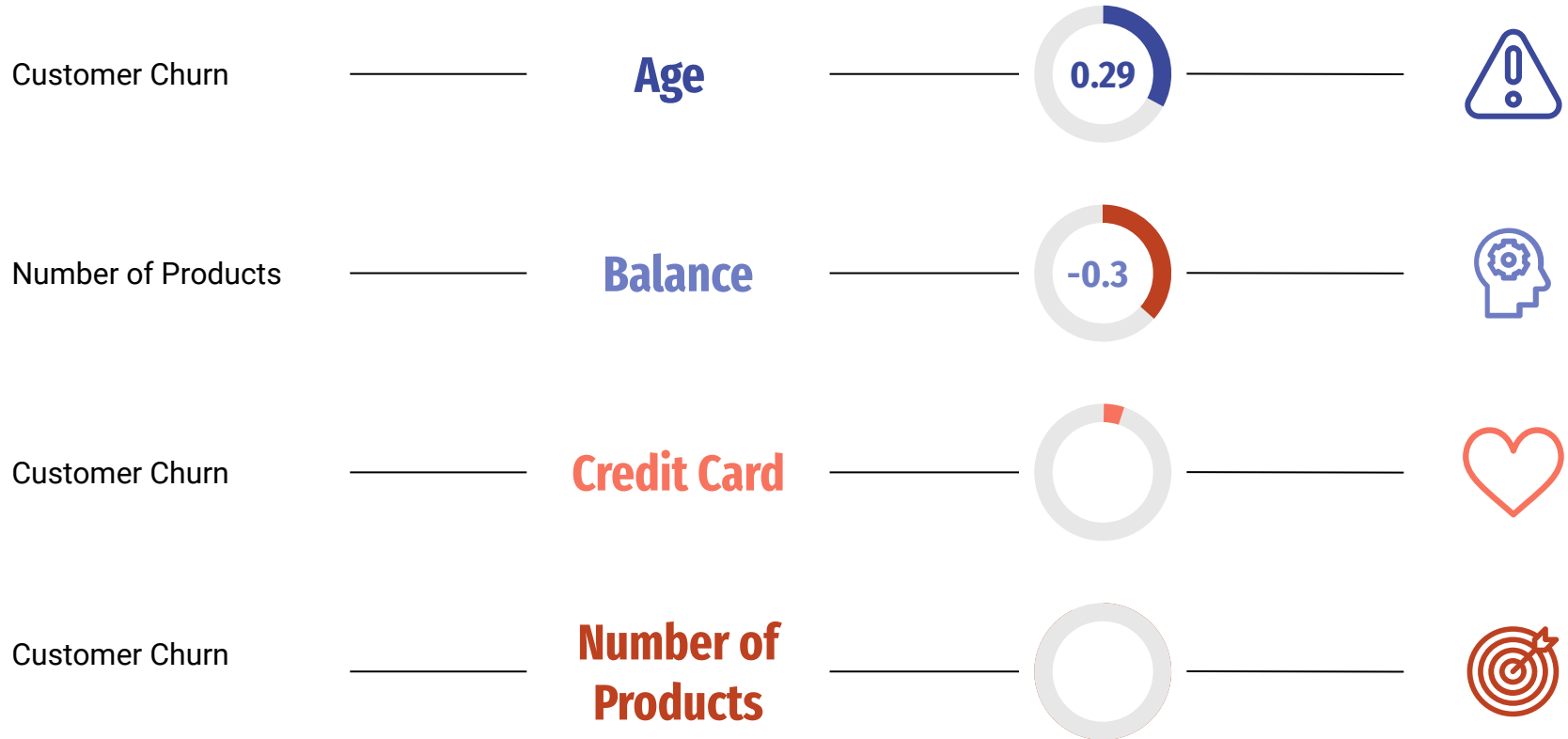
Churn

2000 customers churned

Performance Evaluation

Affects metrics related to model performance

Numerical Features Relationships



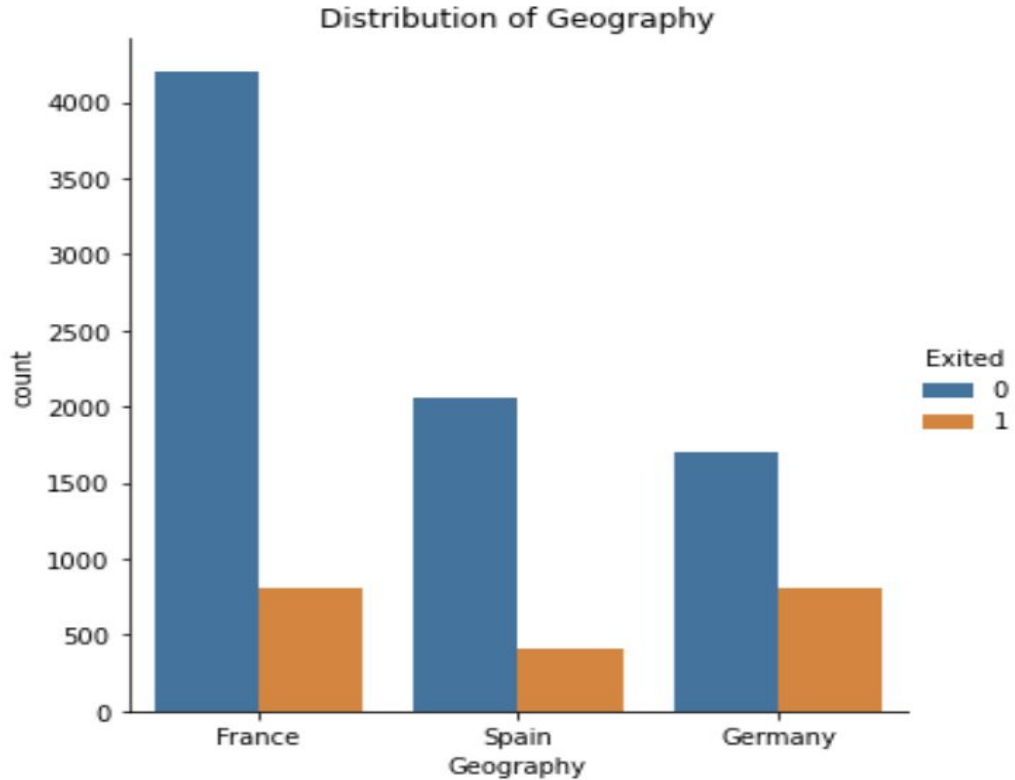
Geographic Customer Distribution

Majority Customers

Customers mainly from :
France, Germany, Spain

Proportion Churned

Customers from
Germany churned most



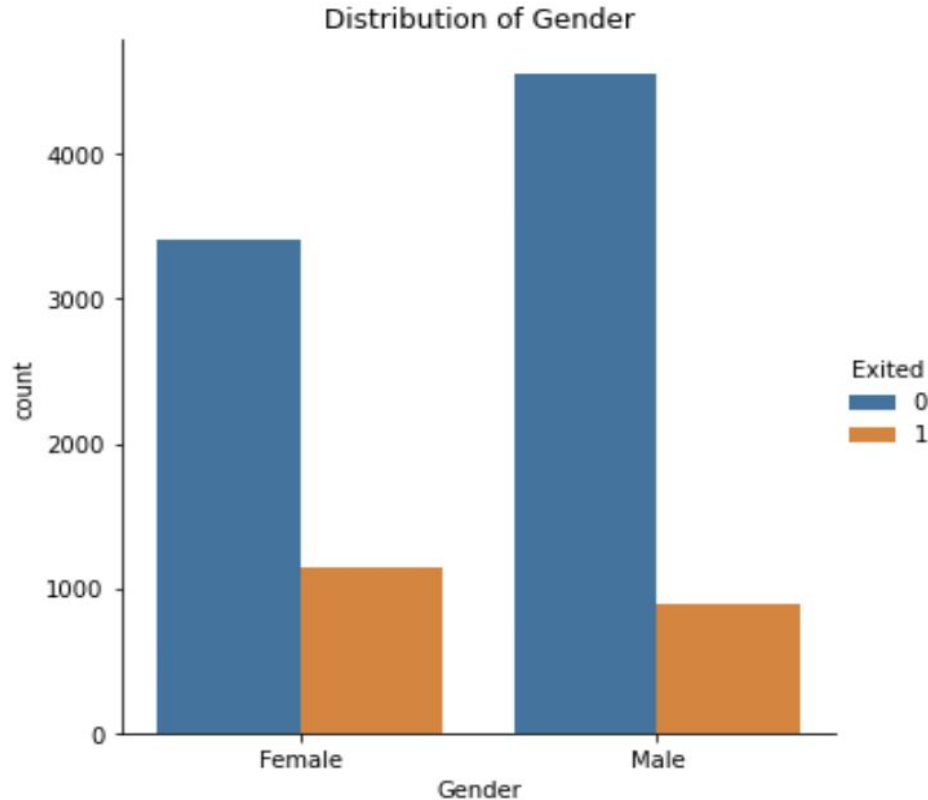
Geographic Customer Distribution

Customer Gender

Males are more than females

Proportion Churned

Female customers churned slightly more.



Predictive Analytics

Machine Learning Toolkit

Algorithm Name	Logistic Regression	Random Forest	XGBoost
Model Definition	Linear Classification Model	Extended Decision Tree Model	Gradient Boosting Model
Output	Probabilistic Outputs	Boostrapping	Ensemble Learning
Evaluation Metrics	Accuracy,AUC etc	Accuracy,AUC etc	Accuracy,AUC etc
Strategies Assistance	Customer Retention	Customized Retention Programs	Early Customer Intervention
Comparison	Less Powerful	Wont Overfit	Very Powerful

Model Performance

Algorithm	Accuracy	Precision	Recall	F1-Score	AUC
XGB	0.86	0.73	0.52	0.60	0.814
RF	0.845	0.62	0.28	0.38	0.776
Logit	0.811	0.58	0.24	0.34	0.772

Reasonable Estimates provided for model Metrics

Model Insights and Selection



XGB

Customer Intervention



RF

Credit Score Affects Churn



Logit

Predict Churn



Business Actions

Business Actions



Credit Score

Credit Score Counselling



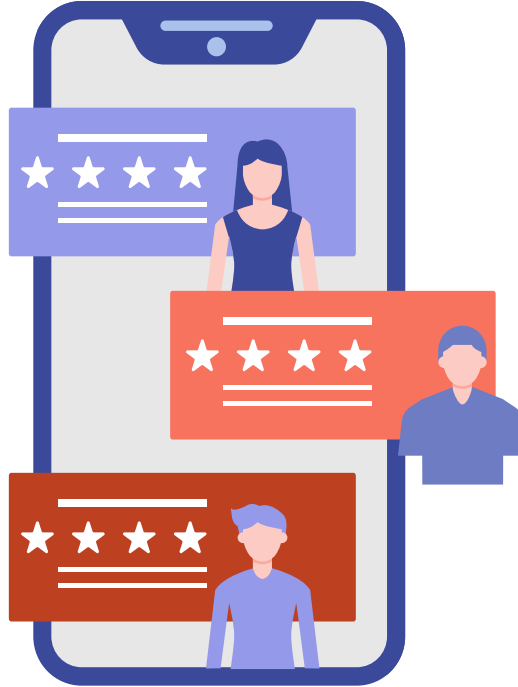
Promotions

Product promotion



Discounts

Discounts and Incentives



Data Strategy

Collect and Analyze better data



Marketing

Amp up the marketing mix



Behaviour

Analyze Customer behaviour



Business Outcomes

Business Outcomes

Customer Retention

Cost Effective

Expensive to get more customers

01

Stability

Essential for survival and growth

CLV

Increased Lifetime Value

02

Investment

Attractive for investors

Brand

Recommend products to others

03

Resourcing

Adding more resources

Quality

Service and Product Quality

04

Scalability

Expansion opportunities

Revenue

Increased frequency in purchases

05

Innovation

R&D as we grow

Revenue Increase

Outro

Customer Churn Modelling

Identify Causes



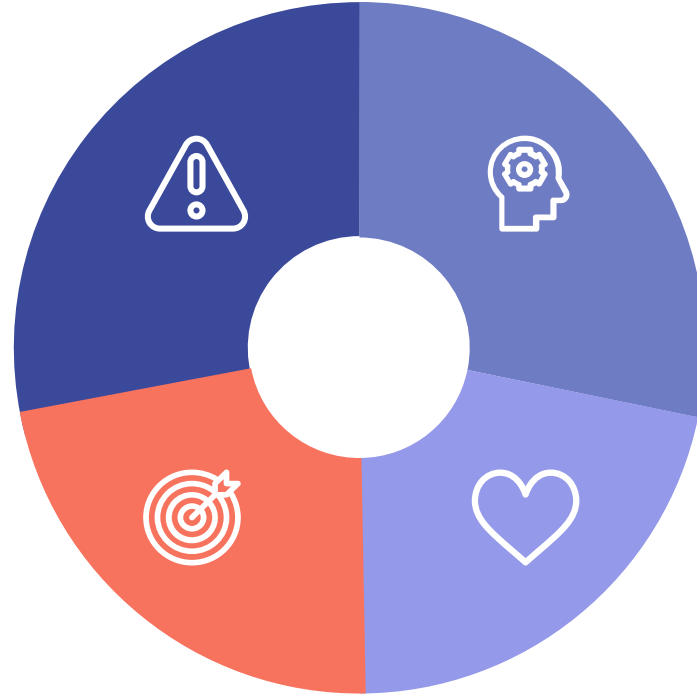
Take Action



Monitor



Improve CX



Thanks!