EXCERPT
PIG E. BANK

A theoretically well-known global bank seeks analytical support for its anti-money laundering compliance division and is determined to improve services to increase customer retention.

OBJECTIVE

Contribute to the development and optimization of models to enhance the efficiency of the bank's compliance program in identifying client loss risk factors and flagging suspicious transaction behavior.

PROJECT & DATA

- Project Brief
- Client Dataset | *provided by CareerFoundry*

LIMITATIONS

- Customer demographics are limited to gender, age, and country with records of their account balance, estimated salary, membership status, etc.
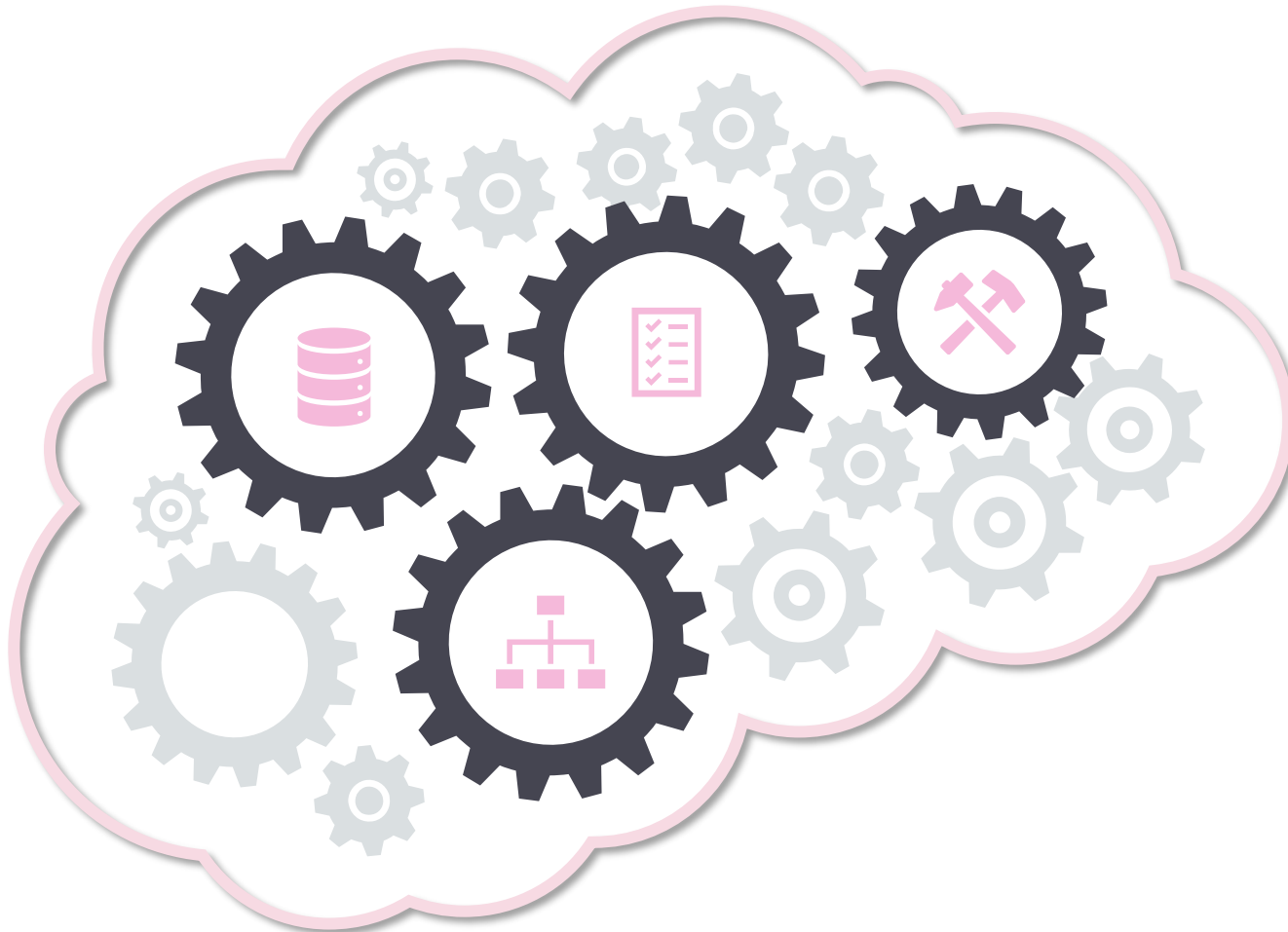
TECHNIQUES APPLIED

- Big Data Management
- Data Ethics
- Data Mining
- Predictive Analysis
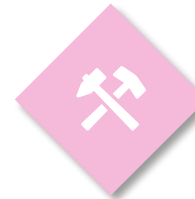- Time Series Analysis and Forecasting

TOOLS

DATA MANAGEMENT

BIG DATA
Defining the data characteristics (structured and unstructured) and recognizing its applications and limitations. Identifying software tools appropriate for handling big data.
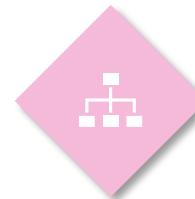
DATA ETHICS
Identifying ethical dilemmas in managing big data in compliance with security and privacy laws.

DATA MINING
Performing data cleaning and descriptive statistics using pivot tables that will be utilized in generating a decision tree modeling for testing outcomes of the analysis.

PREDICTIVE, TIME SERIES ANALYSES AND FORECASTING
Optimizing linear regression models through testing correct predictive prototypes in classifying risk factors that may have contributed to customer loss with the application of different scenarios.

CUSTOMER RETENTION ANALYSIS

There is a **notable percentage** of customers that have **closed** bank accounts.

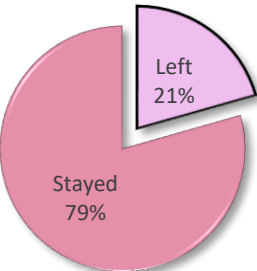**EXIT STATUS DISTRIBUTION**

Left 21%

Stayed 79%

FIG. 5a

Non-active customers are likely **to exit**.

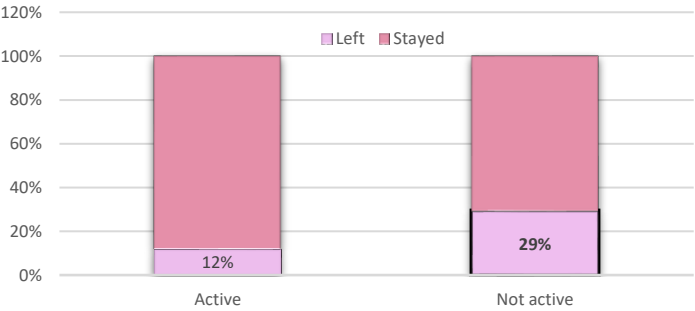**TOTAL AVERAGE EXIT STATUS BY MEMBERSHIP STATUS**

FIG. 5b

Clients with **1-2** products **18%** have **left**.
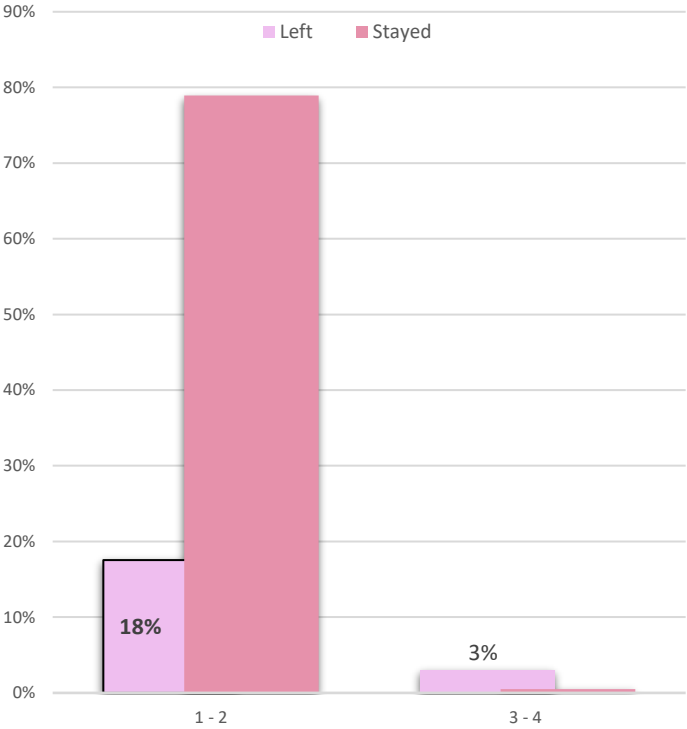
OVERALL DISTRIBUTION

FIG. 5c

Clients residing in **Germany** have a significant proportion of **withdrawing** services.

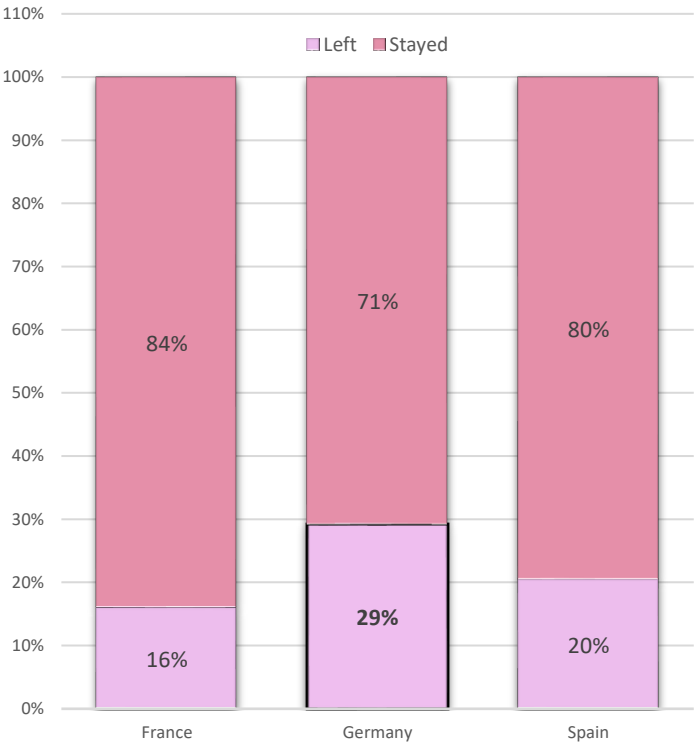**TOTAL AVERAGE EXIT STATUS BY COUNTRY**
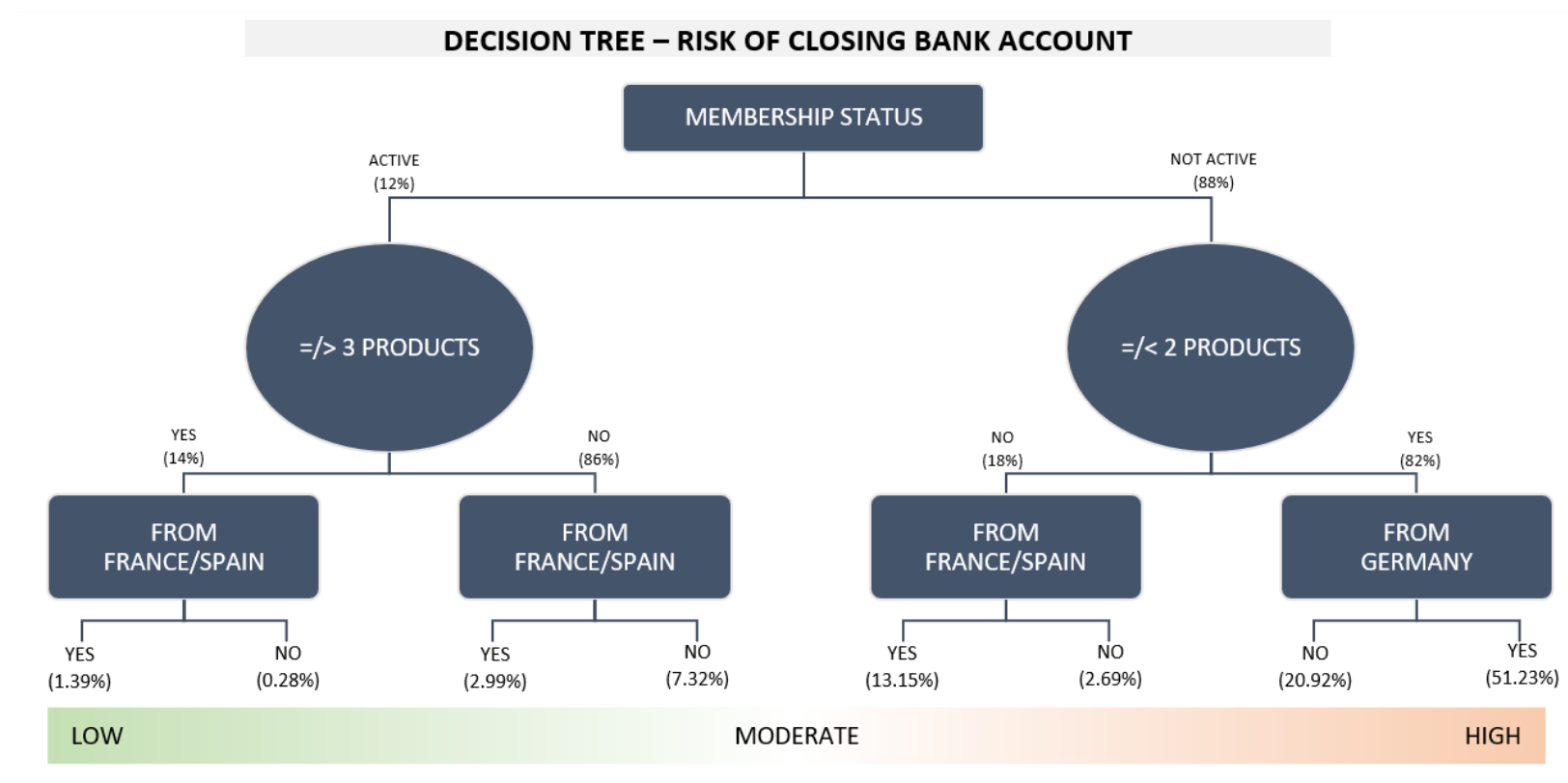

FIG. 5d

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PREDICTIVE MODEL ANALYSIS

The **factors** that have a **substantial impact** on customer attrition are **non-active members** that had **one to two products**. Additionally, the residential location, specifically the **German** market, poses a **higher risk** of customers terminating their relationship with the bank, even when demographic information is not taken into account.

DECISION TREE – RISK OF CLOSING BANK ACCOUNT

MEMBERSHIP STATUS

ACTIVE (12%) — NOT ACTIVE (88%)

=/> 3 PRODUCTS — =/< 2 PRODUCTS

YES (14%) / NO (86%) — NO (18%) / YES (82%)

FROM FRANCE/SPAIN — FROM FRANCE/SPAIN — FROM FRANCE/SPAIN — FROM GERMANY

YES (1.39%) / NO (0.28%) — YES (2.99%) / NO (7.32%) — YES (13.15%) / NO (2.69%) — NO (20.92%) / YES (51.23%)

LOW — MODERATE — HIGH

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RECOMMENDATIONS

CUSTOMER PERSERVATION

BUSINESS DEVELOPMENT

Implement banking strategies aimed at driving product sales within the target markets of France and Spain, targeting potential clients and business communities.

CUSTOMER BEHAVIOR ANALYSIS

Undertaking a survey to gain insights into the specific needs of customers, including those who are planning to terminate their accounts, with the aim of addressing their concerns and improving customer retention rates.

PRODUCT EVALUATION

Examine the products and services provided to various demographic groups to enhance and develop innovative solutions aimed at converting non-active members.

RESEARCH & DEVELOPMENT

Perform a marketing research analysis on the German market to delve deeper into the factors contributing to the elevated customer attrition risk.

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