



# Churn Bank Customer

GFP Group C

Section Madrid • Team 1

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[Dashboard](#)

# Meet Our Team



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# **Business Understanding**

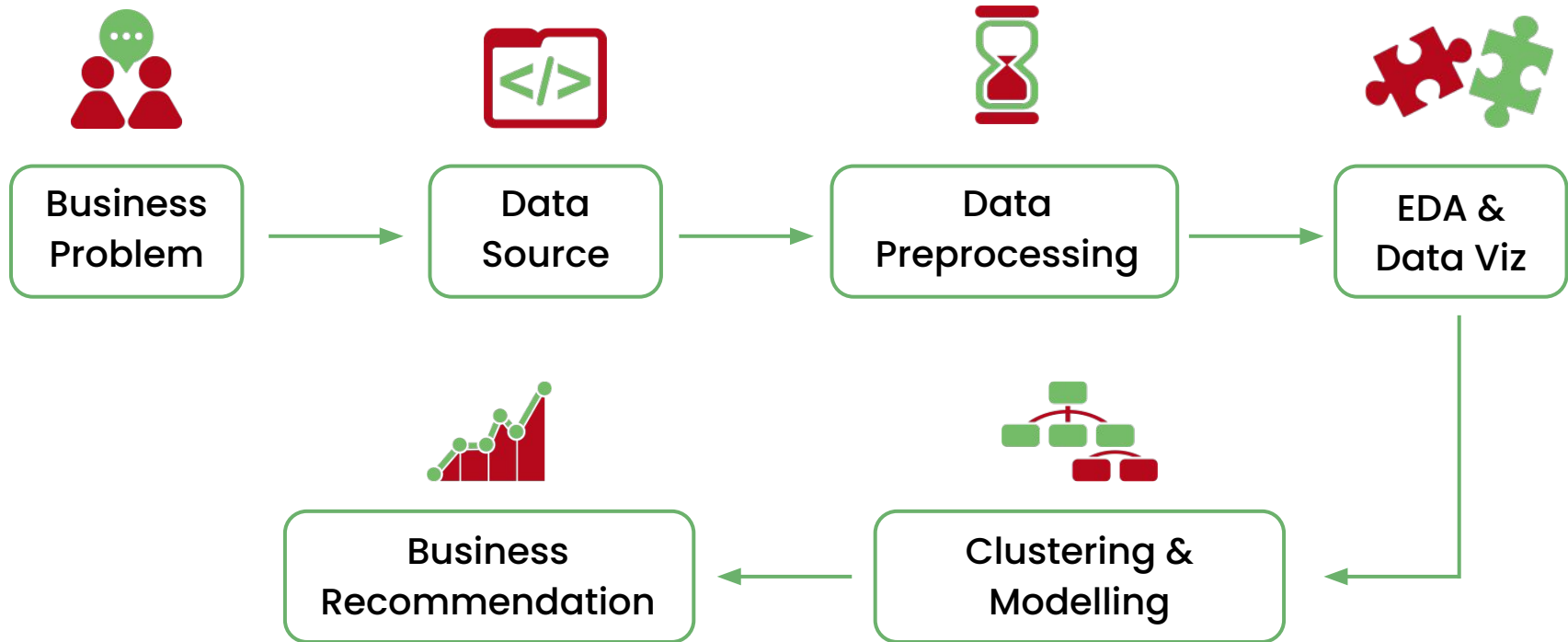
Bank XYZ, a leading financial institution in **France, Spain, and Germany**, is devoted to **tackling its churn rate** head-on. With a **decade-long dataset** at its disposal, the bank is primed to formulate data-driven strategies. Its proactive stance **focuses on building loyalty programs and strategic retention campaigns**, aiming to solidify customer relationships and curtail attrition effectively.

## Business Understanding



# **Project Workflow**

# Project workflow

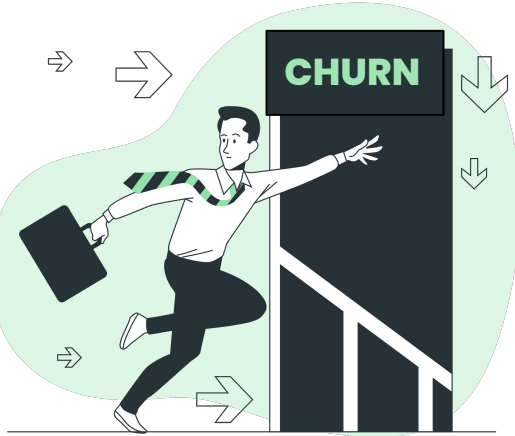




# **Business Question**



# Business Question

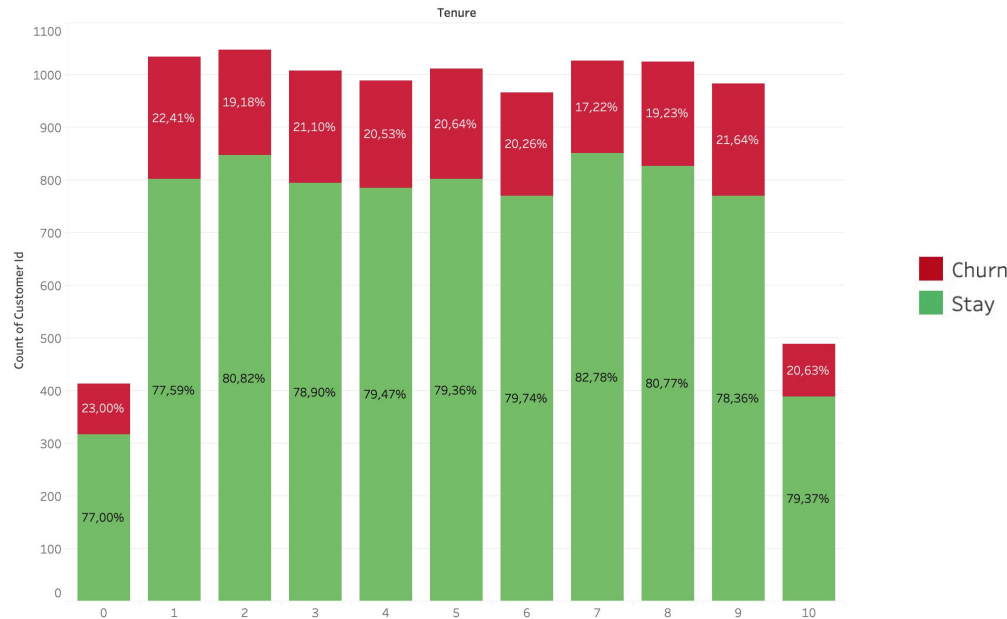


- A. Which customer group contribute the **most churn**?
- B. How many customers are predicted to churn based on **customer behavior**?
- C. How to **retain clients** to continue using banking services?



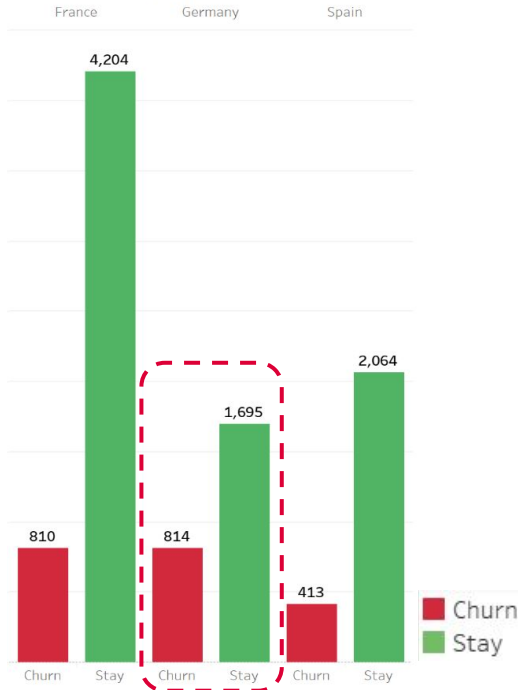
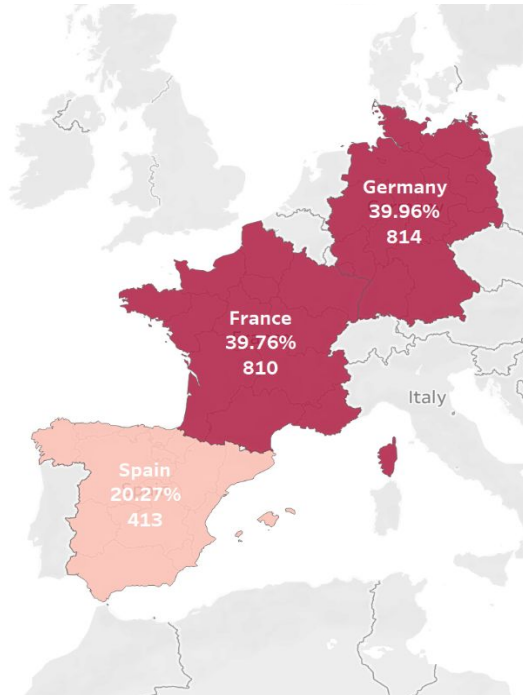
**EDA**

# EDA by Tenure



- The **top 3** highest Customer churn based on tenure are **tenure 0 (23.00%)**, **tenure 1 (22.41%)**, and **tenure 9 (21.64%)**.
- The **average** churn rate for the last 10 years is **20.53%**.

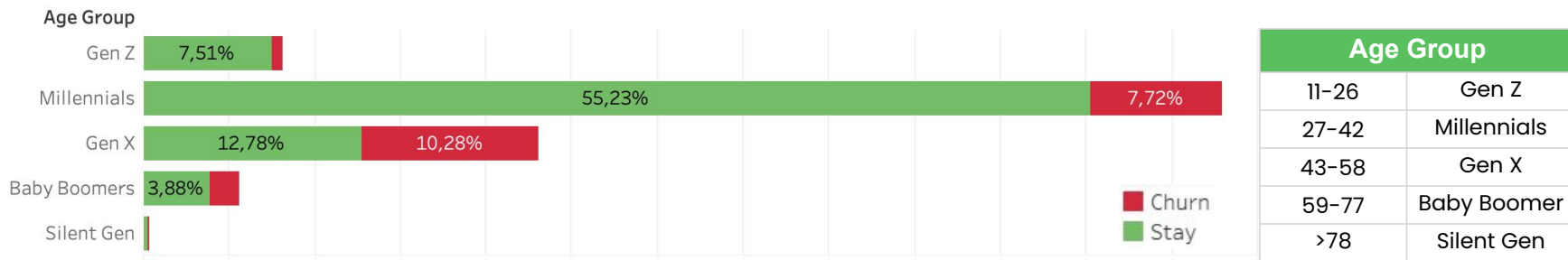
Based on location, the **country** with the **highest customer churn** is **Germany**



**39.96%**

From total Churn Customers  
are from **Germany**

## The most churn by Generation is **Gen-X**

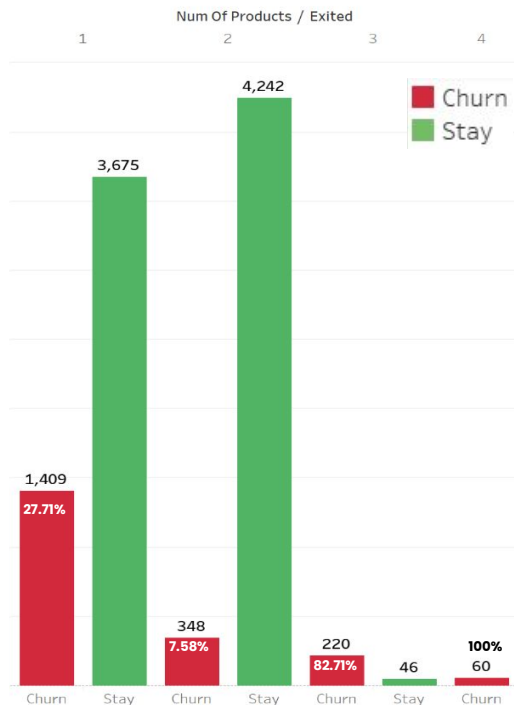


**10.28%**

1028 Customers

From total churn customers are **Gen-X**,  
which is the highest churn by **Generation**.

## Customers who buy **more than 2 products** are more **likely to churn**



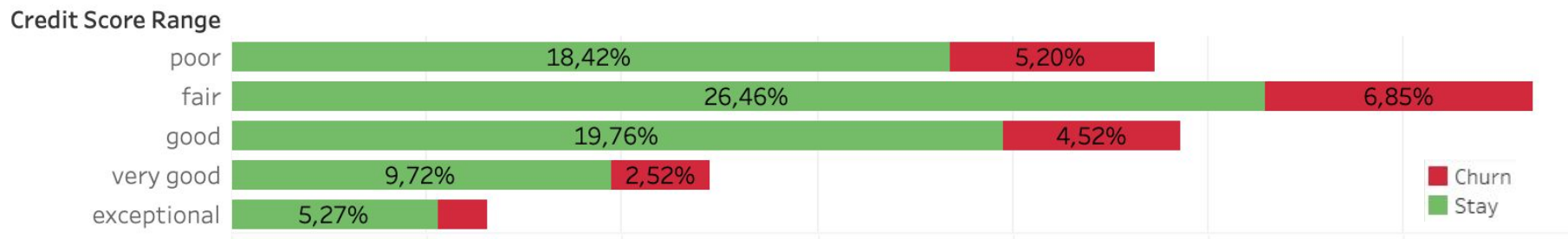
**82.71%**

- Who use **3 bank products** are churn, and
- Who use **4 bank products** are **100%** churn

**2 Products**

are the **optimal number** that the customers  
likely to **stay**.

## Lower credit score increase the tendency for customers to **churn**



**6.85%**

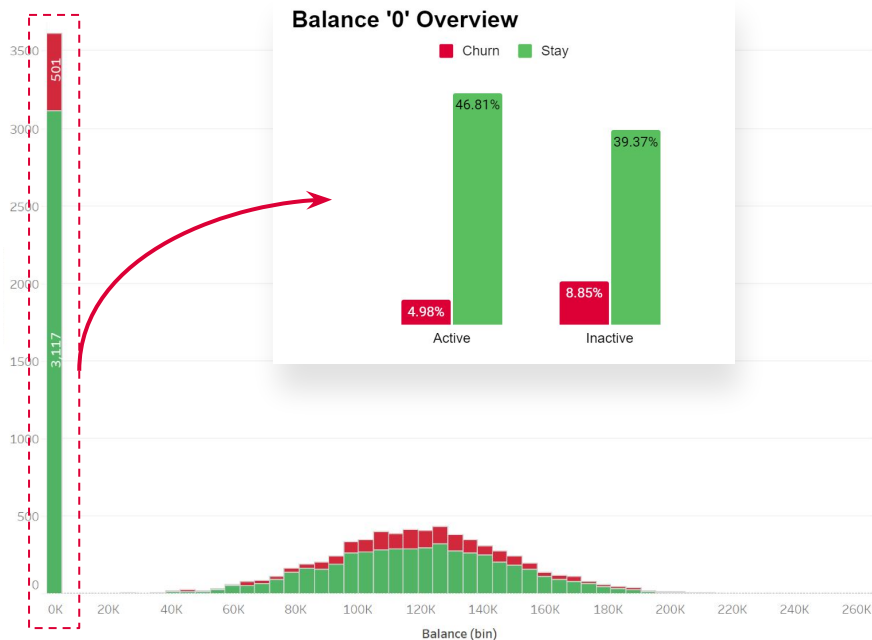
Customers in **"FAIR"** category, has highest churn of total customer.

Credit Score Group	
<580	Poor
580-669	Fair
670-739	Good
740-799	Very Good
800+	Exectional

Customers with **balance = 0** are the most likely to **churn**, are these customers **still active**?

### Insight:

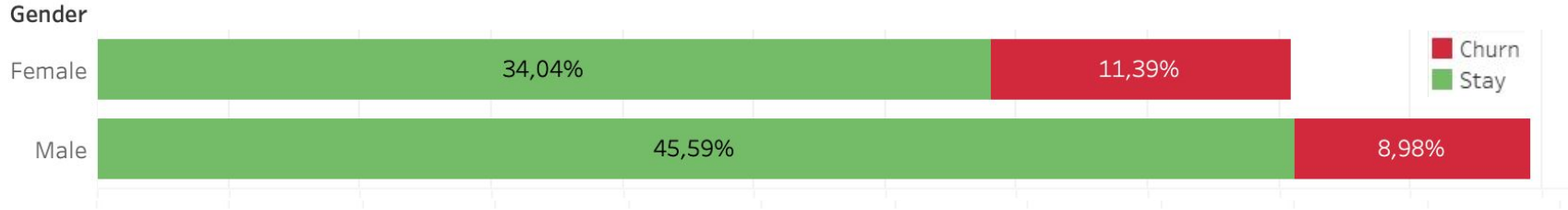
- Out of customers with a **zero balance**, **51.97%** are still **active**, and **48.55%** are **inactive**
- Among customers with a **zero balance**, **8.85%** are **inactive** and have **churned**



However, out of the customers who remained, **39.37%** were passive (inactive) customers. Customers in this category can be assumed to have left the bank because their accounts were **inactive** and had a **zero balance**.



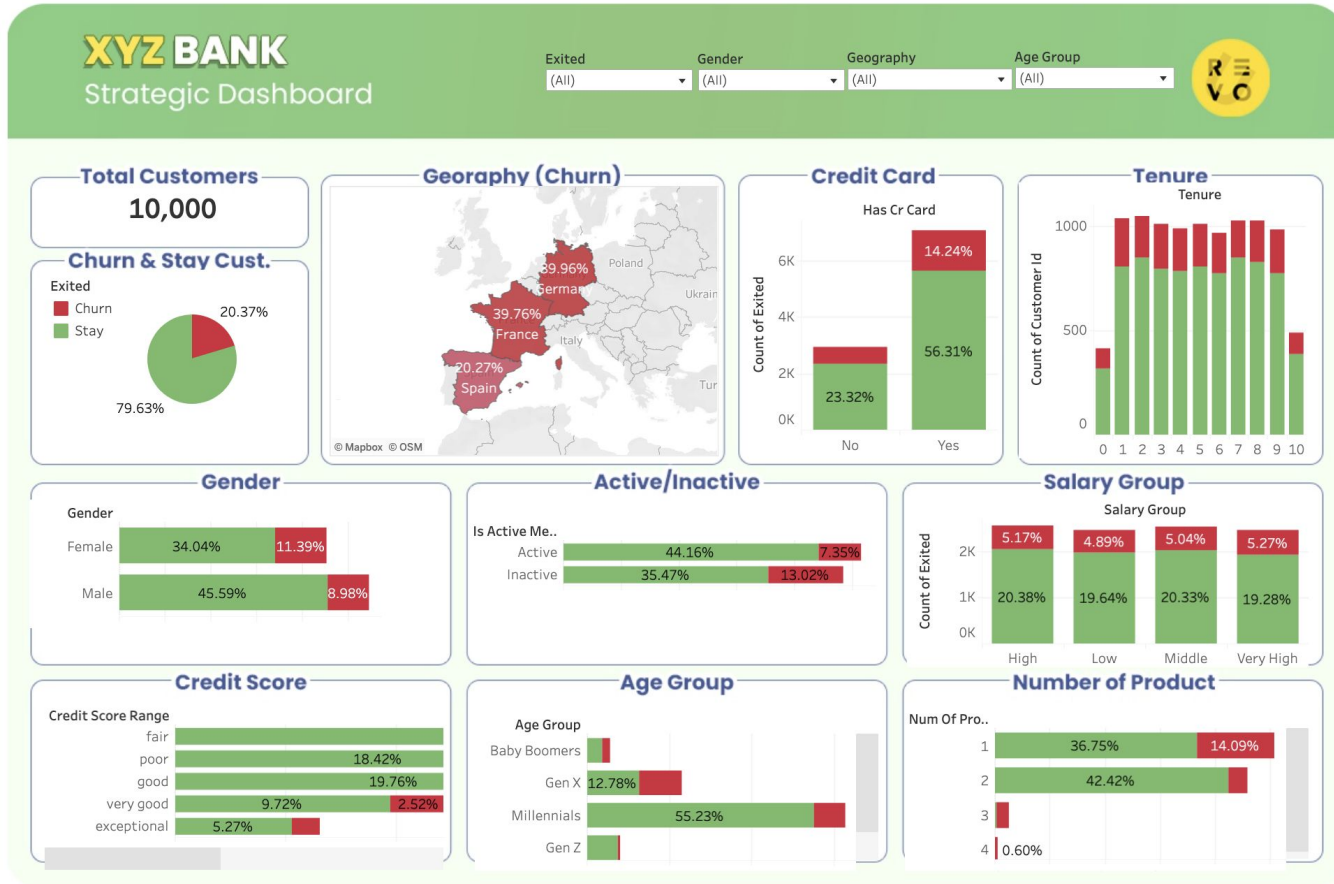
# Churn by Gender



**11.39%**  
1139 Customers

From total customers who **churn** are Female,  
the highest churn by **Gender**

# Dashboard





# Clustering

# Customer Segmentation

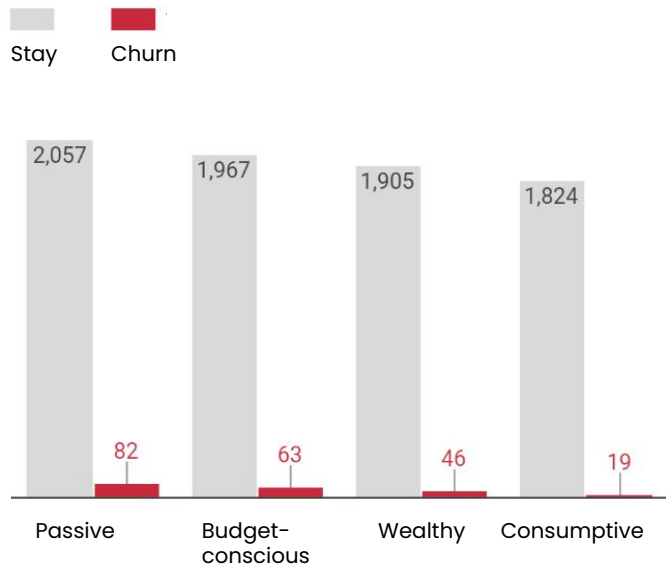
	Budget-conscious	Consumptive	Wealthy	Passive
<b>Num of Cust</b>	<b>2593</b>	<b>2118</b>	<b>2494</b>	<b>2795</b>
% of Cust Churn	21.71%	12.98%	21.77%	23.47%
<b>Avg. Salary</b>	€ 45,395.77	€ 99,346.82	€ 153,314.05	€ 103,903.17
Salary Group	56.19% <b>Low</b>	28.42% <b>Middle</b>	54.61% <b>Very High</b>	30.38% <b>High</b>
Avg. Balance	€ 81,682.06	€ 1,615.85	€ 81,251.74	€ 124,147.80
Credit Score	651	648	651	651
Num of Product	53.37% Use <b>1 Product</b>	71.10% Use <b>2 Product</b>	53.01% Use <b>1 Product</b>	65.44% Use <b>1 Product</b>
Num of Has Credit Card	70.81%	71.58%	69.29%	70.66%
Tenure	3	7	3	8
Gender	54% - 55% Male			
Geography	48.36% <b>France</b> 27.34% <b>Germany</b> 24.30% <b>Spain</b>	66.19% <b>France</b> 32.63% <b>Spain</b> 1.18% <b>Germany</b>	49.72% <b>France</b> 26.86% <b>Germany</b> 23.42% <b>Spain</b>	40.00% <b>France</b> 39.53% <b>Germany</b> 20.47% <b>Spain</b>
Active/Inactive	53% <b>Active</b>	51% <b>Active</b>	53% <b>Active</b>	51% <b>Inactive</b>

# Cluster Characteristic

Cluster	Characteristics Summary
Budget-conscious	This cluster represents the second lowest total of customers and churn rate. Customers within this category have an <b>average salary categorized as "low"</b> , which is the smallest category. Nevertheless, <b>The second highest average customer balance</b> is found within this subgroup. Furthermore, customers within this specific cluster have an average <b>tenure of 3 years</b> .
Consumptive	The user is part of the smallest cluster, characterized by the lowest churn rate. Nevertheless, the customers in this group have an average <b>salary classified within the "middle" class range</b> , the average customer <b>balance remains notably small</b> , being the lowest among the clusters. Additionally, The customers in this segment, on average, <b>have a tenure of 7 years</b> .
Wealthy	This cluster is characterized by being the second largest in terms of total customers and churn rate. Despite customers in this group having an <b>average salary</b> that falls into the <b>"very high" category</b> , The average customer <b>balance in this group is quite small</b> , almost matching that of cluster 0. Moreover, the average customer <b>tenure</b> for this specific cluster <b>amounts to 3 years</b> .
Passive	This cluster constitutes the most substantial group with the <b>highest churn rate</b> concurrently. The average <b>salary of customers</b> belonging to this category is <b>categorized as "high"</b> , and notably, this cluster boasts the <b>highest average balance</b> . Concurrently, customers within this particular cluster exhibit an average <b>tenure of 8 years</b> . But <b>51% customer</b> in this cluster is <b>"Inactive"</b> .

# How much the existing customers **tend to churn** this year?

## Churn Prediction in each Cluster



Total Existing Customer (Not Yet Churn)

7,963

Logistic regression

Num of Churn Prediction

210

Percent of Churn Prediction

2.64%

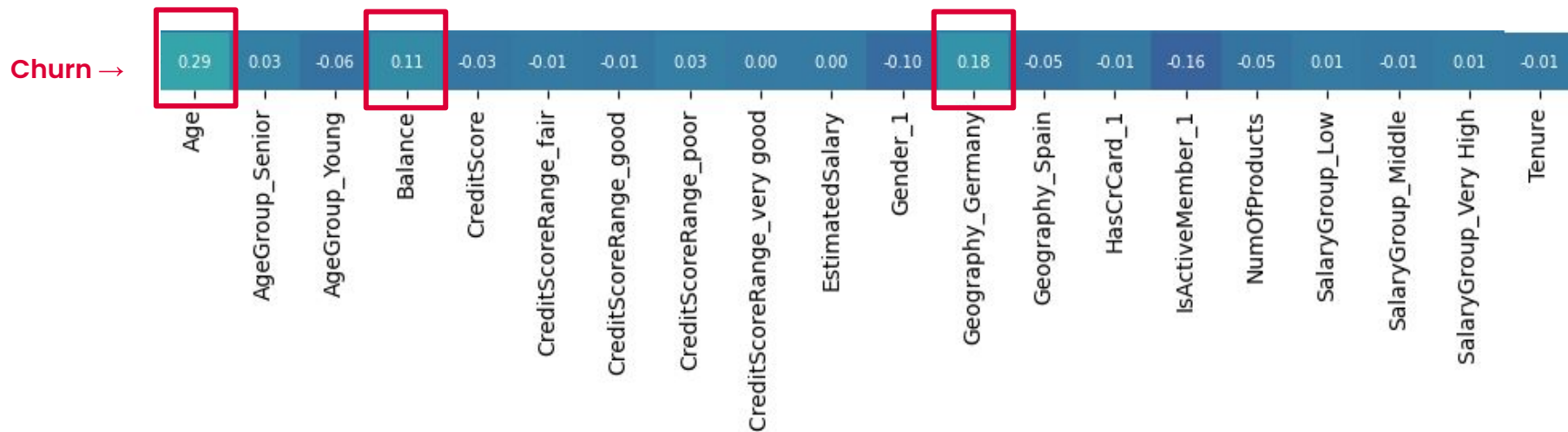
## Insight

- **210 customers** are predicted to be churn this year (2.64% of the total existing customers)
- Cluster Passive is the highest cluster predicted to churn **3.82% of the total**.
- There will be an **additional** 210 customer churn by the end of the year.



# Recommendation

**Top 3 variables** with the highest effects on Customers Churn  
is **Age**, **Geography\_Germany**, and **Balance**





# Business Recommendation

- Create new strategy for the female customer and customers who located in **Germany** to decrease the **churn rate**.
- Create **new loyalty** program for the customer to stay active using the banking service.
- Create promo for the customer who already use 1 bank program to use **two product**.
- Bank **XYZ** can approach 210 customers who has predicted to churn based on their cluster profile in order to **prevent additional churn rate** in this year.
- Create retirement fund/investment products related to customer **Gen-X** and **Millennials** (majority bank customers generation).
- Offer **higher** deposit interest rates than the benchmark interest rate, and conduct periodic prize draws so that customers save more funds and are more loyal to **stay in the bank**.

# Recommendation based on Cluster

Cluster	Characteristics Summary	Recommendation
Budget-Conscious	This cluster represents the second lowest total of customers and churn rate. Customers within this category have an <b>average salary categorized as "low"</b> , which is the smallest category. Nevertheless, <b>The second highest average customer balance</b> is found within this subgroup. Furthermore, customers within this specific cluster have an average <b>tenure of 3 years</b> .	Although this cluster has a small income, their average balance is high. ABC Bank can offer <b>low-interest loans</b> and <b>investment or high-interest savings</b> products so they can be more loyal
Consumptive	The user is part of the smallest cluster, characterized by the lowest churn rate. Nevertheless, the customers in this group have an average <b>salary classified within the "middle" class range</b> , the average customer <b>balance remains notably small</b> , being the lowest among the clusters. Additionally, The customers in this segment, on average, <b>have a tenure of 7 years</b> .	Offer <b>deposit interest rates that are higher</b> than the benchmark interest rate and <b>give them special promo based on their balance</b> so that customers save more funds and are stay loyal
Wealthy	This cluster is characterized by being the second largest in terms of total customers and churn rate. Despite customers in this group having an <b>average salary</b> that falls into the <b>"very high" category</b> , The average customer <b>balance in this group is quite small</b> , almost matching that of cluster 0. Moreover, the average customer <b>tenure</b> for this specific cluster <b>amounts to 3 years</b> .	Offer <b>deposit interest rates that are higher</b> than the benchmark interest rate and <b>conduct periodic prize draws</b> so that customers save more funds and are more loyal
Passive	This cluster constitutes the most substantial group with the highest churn rate concurrently. The average <b>salary of customers</b> belonging to this category is <b>categorized as "high"</b> , and notably, this cluster boasts the <b>highest average balance</b> . Concurrently, customers within this particular cluster exhibit an average <b>tenure of 8 years</b> . But <b>51% customer</b> in this cluster is <b>"Inactive"</b> .	Take an approach so that customers are more active and the churn rate decreases. eg: <b>giving promos/discounts on transaction fees, offering special interest rates if they want to make deposits or loans</b>

**THANK YOU**