

# Data Analysis Summary: Customer Churn and Demographics

## 1. Project Overview:

In this project, I examined customer churn within a banking institution, along with the demographics that constitute their client base. I focused on four key metrics to provide stakeholders with a better understanding of their client base and the factors contributing to churn. These metrics include:

Demographic Distribution: By meticulously assessing client counts across distinct countries, I determined the geographical makeup of the bank's clientele.

Churn Dissection: An analysis revealed the country with a significant churn rate, offering a detailed understanding of regions where client attrition is more prevalent.

Product-Related Attrition: I explored the correlation between client attrition and product adoption, investigating whether there's a link between the number of products and the likelihood of client drop-off.

Retained vs. Lost Customers: This metric provides a comprehensive overview of customer base dynamics, shedding light on the delicate balance between customer retention and attrition.

## 2. Methodology:

My analytical journey encompassed various tasks involving SQL, Excel, and Power BI, which collectively fostered a comprehensive understanding of the subject matter.

### 2.1. Data Source:

The data originates from a bank's internal database and includes customer details such as customer ID, surname, credit score, geography, gender, age, tenure, balance, number of products, credit card presence, active membership, estimated salary, client status, complaints, satisfaction score, card type, and earned points.

### 2.2 Preprocessing:

Preprocessing involved identifying and removing duplicates, as well as transforming data to make it more suitable for analysis in Excel.

### 2.3 Exploration:

All data exploration was conducted using SQL. The code for main questions is included in my GitHub repository along with the code for key questions.

## 2.4 Visualization:

Visualization views were generated using SQL, and these views were then used in Power BI to present stakeholders with a visual narrative of the analysis's key findings.

## 2.5 Descriptive Analysis:

**Demographic Distribution:** Calculated by examining the number of clients in each country, age group, gender, and salary, providing insights into client distribution.

**Churn Dissection:** Calculated churn rates for each country, offering insights into attrition rates in different regions.

**Product-Related Attrition:** Visualizations were used to investigate any correlation between the number of products a client holds and their likelihood to drop off.

**Retained vs. Lost Customers:** Measured the total number of customers against the number of customers that have left.

## 3. Key Findings:

### 3.1 Churn:

- Out of the 10,000 customers, the bank retained 7,962 (Figure 1).
- Germany has the highest churn rate at 50.26%, while Spain has the lowest at 47.03% (Figure 2).
- The diamond card type results in the highest drop-off rate, which correlates with the elevated number of complaints from clients with this card type (Figure 3).
- Clients with more products are less likely to drop off (Figure 4).

### 3.2 Demographics:

- The majority of the customer base is in France (Figure 5).
- Males make up 54.57% of the customer base, while females constitute 45.43% (Figure 6).
- Customers aged 18-40 form the primary age group (Figure 7).
- Clients aged 41-60 have the highest average estimated salary (Figure 8).

## 4. Recommendations:

### 4.1 Churn:

#### 4.1.1 Address Diamond Card Churn:

Investigate the causes of high drop-offs and identify common themes in complaints for this card type to improve the product.

#### 4.1.2 Focus on Germany and Spain:

Given Germany's high churn rate and Spain's low rate, further research into these stats can provide valuable insights.

#### 4.1.3 Enhance Customer Experience:

Invest in improving the overall customer experience to reduce churn. Identify pain points in the customer journey and implement solutions for easier, more convenient, and satisfying interactions.

### 4.2 Demographics:

#### 4.2.1 Target Markets:

Tailor marketing efforts to cater to French customers' needs and preferences, using insights to enhance the bank's services and products.

#### 4.2.2 Engage Male Customers:

Create marketing campaigns that specifically target male customers to boost retention and attract new customers within this demographic.

## 5. Visualizations:

Figure 1

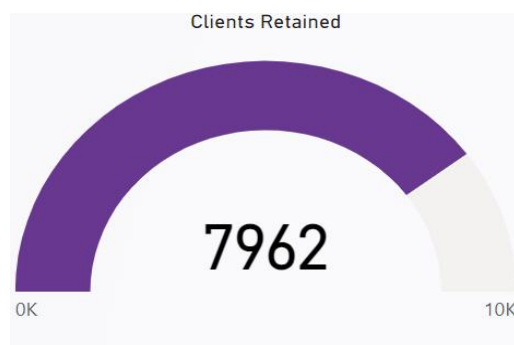


Figure 2

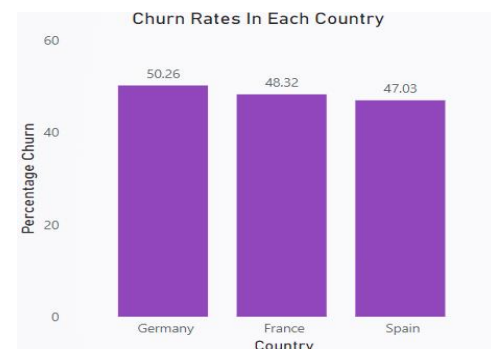
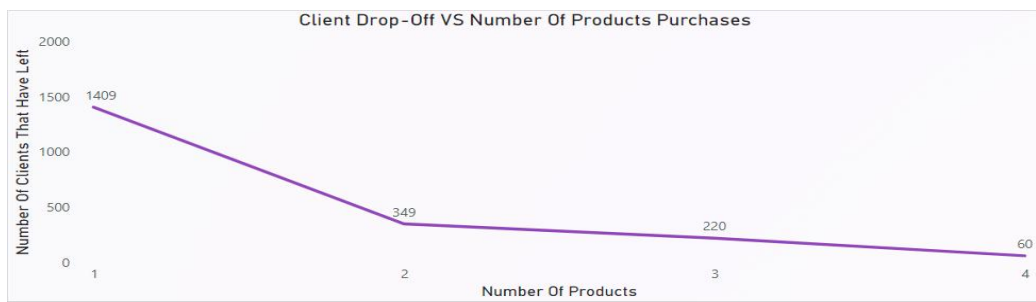


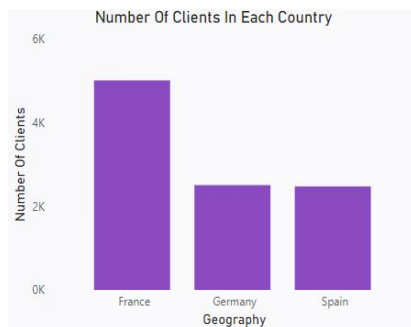
Figure 3



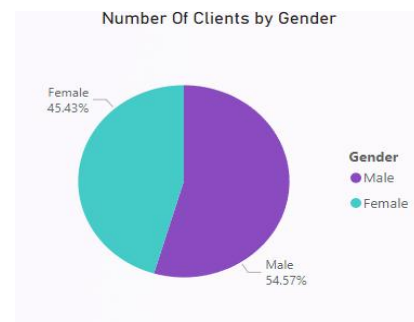
**Figure 4**



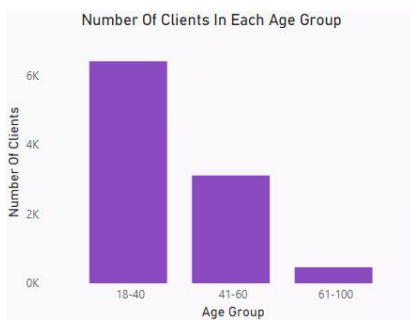
**Figure 5**



**Figure 6**



**Figure 7**



**Figure 8**



## 6. Data:

<https://www.kaggle.com/datasets/radheshyamkollipara/bank-customer-churn>