

# ONYX BANK CUSTOMER CHURN ANALYSIS REPORT

**Prepared by: Nofisat Hassan**

## INTRODUCTION

Customer churn, or attrition, represents the number of customers who stop banking with Onyx Bank within a specific period. This project aims to uncover underlying patterns contributing to churn, highlight the bank's performance metrics, and identify strategies to reduce churn and improve customer satisfaction. Using Excel, the dataset has been analyzed and visually represented to support data-driven decision-making.

## PROBLEM STATEMENT

Onyx Bank is experiencing an increasing trend in customer churn, which can negatively impact profitability and growth. Understanding what customer characteristics lead to churn is vital. Key questions addressed include:

- Which customer segments are most likely to churn?
- How does churn vary by geography, tenure, age, balance, and products?
- What actions can be taken to retain at-risk customers?

## OBJECTIVES

- To determine the overall churn rate and key churn indicators.
- To identify demographic and behavioral factors influencing churn.
- To present insights using an interactive dashboard with KPIs and visual charts.
- To recommend retention strategies for the bank.

## DATA DESCRIPTION

The dataset includes customer-level data on demographics, bank activity, and account metrics. It was originally spread across multiple sheets and required cleaning before analysis.

Key fields include:

- Age, Gender, Geography
- Credit Score, Balance, Estimated Salary
- Tenure, Number of Products, Has Credit Card
- Active Member, Exited (Churned/Stayed)

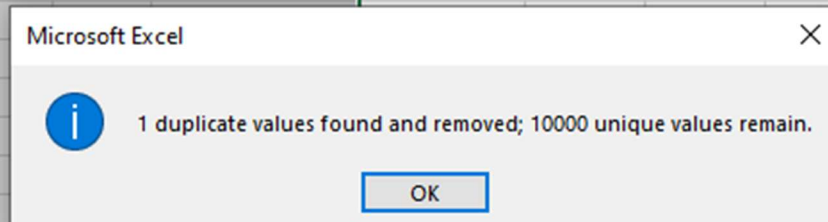
## DATA CLEANING AND TRANSFORMATION

To ensure data quality and accuracy, the cleaning and transformation process was carried out on both the Customer Info and Account Info sheets.

## Customer Info Sheet

1. Duplicates: Checked for duplicates using CustomerID —one duplicate was found.

Female	29	4	€119346.88						
Male	44	4	€74940.5						
Male									
Male									
Male									
Female									
Female									
Female									
Male	45	3	€64327.26						
Male	58	1	€5097.67						



2. Geography Inconsistencies: Identified inconsistent entries such as "FRA" and "French" in the geography column. Used Find and Replace to standardize all to "France".

Surname	CreditSco	Geograp	Gend	A	Tenu	EstimatedSala
Hargra			Female	42	2	€101348.88
Hill			Female	41	1	€112542.58
Onio			Female	42	8	€113931.57
Boni			Female	39	1	€93826.63
Mitche			Female	43	2	€79084.1
Chu			Male	44		
Bartle			Male	50		
Obinn			Female	29		
He			Male	44		
H?			Male	27		
Bearce			Male	31		
Andre			Male	24		
Kay			Female	34	1	
Chin			Female	25		
Scott			Female	35	7	€65951.65
Gofort			Male	45	3	€64327.26
Romeo			Male	58	1	€5097.67
Hende			Female	24	9	€14406.41
Muldr			Male	45	6	€158684.81
Hao			Female	24	6	€54724.03
McDon			Male	41	8	€170886.17
Delluc			Female	32	8	€138555.46

3. Missing and Invalid Entries: Found 3 rows with missing Age values. On further inspection, those rows also had missing Surname and negative values in EstimatedSalary, so they were removed to preserve data integrity.

Customer	Surname	CreditSco	Geograp	Gend	A	Tenu	EstimatedSala
15728693		574	Germany	Female		3	-€999999
15580203		674	Spain	Male		6	-€999999
15756954		538	France	Female		2	-€999999

4. Name Anomalies: Some Surname entries (e.g., "H?") contained invalid characters. Since names were not part of the analysis, they were left unchanged.

15592389	H?	684	France	Male	27	2	€71725.73
----------	----	-----	--------	------	----	---	-----------

5. Estimated Salary Fix: The EstimatedSalary column had formatting issues. A new column was created using =VALUE(TEXT) to extract clean numeric values. This new column was formatted as Currency, then pasted as values, and the original column was removed.

=VALUE(H2)								
B	C	D	E	F	G	H	I	J
Surname	CreditSco	Geograp	Gender	Age	Tenure	EstimatedSala	EstimatedSalary	
ave	619	FRA	Female	42	2	€101348.88	€ 101,348.88	
	608	Spain	Female	41	1	€112542.58	€ 112,542.58	
	502	French	Female	42	8	€113931.57	€ 113,931.57	
	699	FRA	Female	39	1	€93826.63	€ 93,826.63	
ell	850	Spain	Female	43	2	€79084.1	€ 79,084.10	
	645	Spain	Male	44	8	€149756.71	€ 149,756.71	
ett	822	France	Male	50	7	€10062.8	€ 10,062.80	
ia	376	Germany	Female	29	4	€119346.88	€ 119,346.88	
	501	French	Male	44	4	€74940.5	€ 74,940.50	
	684	France	Male	27	2	€71725.73	€ 71,725.73	
e	528	French	Male	31	6	€80181.12	€ 80,181.12	
ews	497	Spain	Male	24	3	€76390.01	€ 76,390.01	
	476	FRA	Female	34	10	€26260.98	€ 26,260.98	
	549	France	Female	25	5	€190857.79	€ 190,857.79	
	635	Spain	Female	35	7	€65951.65	€ 65,951.65	
th	616	Germany	Male	45	3	€64327.26	€ 64,327.26	
o	653	Germany	Male	58	1	€5097.67	€ 5,097.67	
erson	549	Spain	Female	24	9	€14406.41	€ 14,406.41	
row	587	Spain	Male	45	6	€158684.81	€ 158,684.81	

#### 6. Calculated Columns Created:

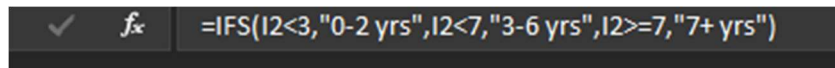
- Age Group: Customers grouped by age range (e.g., 18–24, 25–34).

=IFS(G2<25,"18-24",G2<35,"25-34",G2<45,"35-44",G2<55,"45-54",G2<65,"55-64",G2>=65,"65+")									
D	E	F	G	H	I	J	K	L	M
CreditSco	Geography	Gender	Age	Age Gr	Tenure	Tenure	EstimatedSala	Balance	Balance G

- Credit Score Category: to see how their credit ranks. Scores grouped into Poor, Fair, Good, Very Good, Excellent.

=IFS(C2<580,"Poor",C2<670,"Fair",C2<740,"Good",C2<800,"Very Good",C2>=800,"Excellent")									
D	E	F	G	H	I	J	K	L	M

- Tenure Band: to group how long they've been with the bank. Grouped into 0–2 yrs, 3–6 yrs, and 7+ yrs.



The image shows an Excel formula bar with a checkmark icon, a function icon (fx), and the formula: `=IFS(I2<3,"0-2 yrs",I2<7,"3-6 yrs",I2>=7,"7+ yrs")`.

## Account Info Sheet

1. Balance Cleaning: The Balance column had formatting issues. A new column was created using `=VALUE(TEXT)` to extract clean numeric values. This new column was formatted as Currency, then pasted as values, and the original column was removed.

2. Calculated Columns Created:

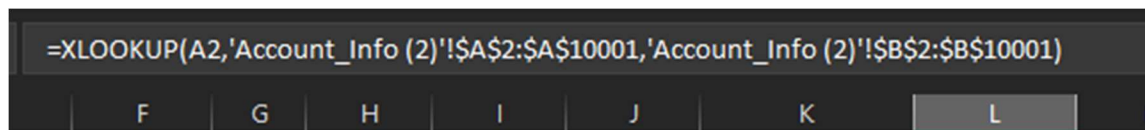
- Balance Category: to group customers into low, medium, or high balance ranges.

- Churned Label: Binary Exited values were translated to "Churned" or "Stayed" to enhance visual storytelling and readability in dashboards.

## Data Merging

After verifying both tables were clean using Excel filters, the final dataset was created by:

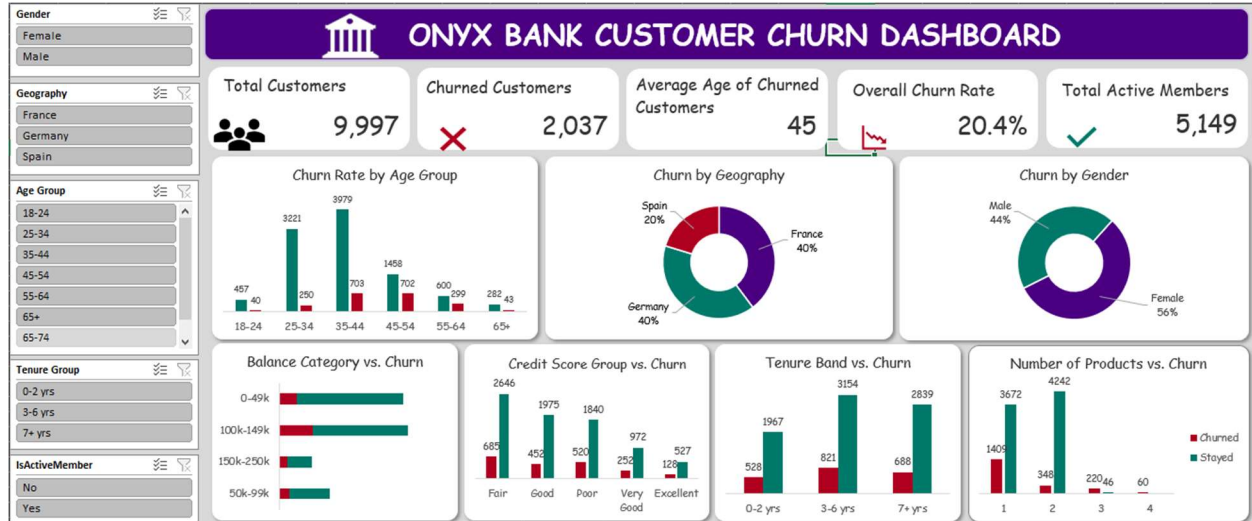
Duplicating the cleaned Customer Info table and merging it with the Account Info table using the XLOOKUP function



The image shows an Excel formula bar with the formula: `=XLOOKUP(A2,'Account_Info (2)'!$A$2:$A$10001,'Account_Info (2)'!$B$2:$B$10001)`. Below the formula bar, the Excel grid shows columns F, G, H, I, J, K, L, and M. Column L is highlighted.

This complete dataset was then used to build the dashboard and perform churn analysis.

# DATA ANALYSIS AND INSIGHTS



## KEY PERFORMANCE INDICATORS (KPIs)

- Total customers: shows all unique bank customers (9,997)
- Churned customers: number of customers who exited the bank (2,037)
- Overall churn rate: churned / total customers (20.4%)
- Average age (churned): shows average age of customers who exited (45)
- Total active members: customers with active membership (5,149)

## INSIGHTS

### 1. Churn by Age Group

The age group with the highest churn was 35–44, where 703 out of 3,979 customers exited the bank. This accounts for a significant portion of the total churn and highlights a key segment of mid-career adults who may be reassessing financial services or responding to unmet needs. Interestingly, the adjacent 45–54 age group showed a nearly equal churn count (702), indicating that the risk of churn remains high throughout the late working years. In contrast, the youngest group (18–24) had the fewest churned customers (40), likely due to lower banking expectations or shorter relationship durations. These trends suggest that customers in their mid-30s to mid-50s may require personalized engagement and retention strategies tailored to their specific needs.

### 2. Churn by Geography

Geographically, churn is highly concentrated in France and Germany, where each contributed approximately 40% of total churn, 814 and 810 churned customers respectively. Spain, by comparison, had 413 churned customers, accounting for the remaining 20%. This shows a need

for region-specific investigations. The high churn in France and Germany may reflect market saturation, service dissatisfaction, or strong regional competitors. Spain's comparatively lower churn suggests better customer satisfaction or a smaller customer base. Onyx Bank could benefit from tailoring retention strategies and marketing messages for each geography.

### **3. Gender and Churn**

Churn by gender shows that female customers represented a slightly higher share of churn at 1,139 compared to 898 male customers. While the difference is not extreme, it may still reflect subtle gaps in satisfaction, service experience, or communication preferences. Banks often overlook gender nuances in financial behaviour, yet small shifts in messaging, support tone, or product focus could improve retention among female customers. It may also help to examine whether specific age or tenure segments within gender groups are driving this pattern.

### **4. Balance and Churn**

Churn was highest among customers with mid-range balances (€100k–€149k), 987 churned. This was followed by low-balance customers (€0–€49k) with 501 churned accounts. Customers in these bands may feel overlooked: mid-tier clients may expect more attention but receive the same service as low-tier ones, while low-balance clients may feel excluded from financial benefits. Interestingly, high-balance customers churned the least, which could indicate better retention services or higher satisfaction. This provides a benchmark for improving lower-tier customer experiences.

### **5. Tenure and Churn**

The analysis shows that churn is highest in the 3–6 year tenure band, with 821 customers leaving. This was followed by long-term customers (7+ years) at 688, and then new customers (0–2 years) at 528. Contrary to expectations, the highest churn is not seen in the newest customers, but rather in mid-tenure customers, which may reflect dissatisfaction after the honeymoon period. These customers may feel they have not progressed in their banking relationship or have found better options elsewhere. This finding points to the need for engagement strategies around the 3–5 year mark to keep customers invested and valued.

### **6. Product Ownership and Churn**

Single-product customers had the highest churn (1,409 out of 5,081). Churn dropped drastically with each additional product: 2 products (348), 3 products (60), and 4 products (0). This trend strongly suggests a correlation between product engagement and loyalty. Single-product customers may feel less tied to the bank and more open to switching. Encouraging customers to adopt more services could be a highly effective churn-reduction strategy, especially if promoted within the first year of engagement.

### **7. Credit Score and Churn**

Customers with fair credit scores experienced the most churn at 685, followed by good (452), very good (122), and excellent (82). This forms a clear inverse relationship: the stronger the credit, the higher the loyalty. Fair credit customers may be financially vulnerable and more prone to frustration from fees, rejections, or lack of tailored products. Offering tailored products or educational nudges could reduce churn within this group. Financially stable customers may receive more personalized attention or better product offerings, reinforcing their loyalty.

## **LIMITATIONS OF THE ANALYSIS**

- The dataset lacks qualitative data like customer feedback or satisfaction surveys, which would help explain why customers churned.
- External factors like competitor offerings, interest rate changes, or service downtimes were not available.
- Geographic churn analysis is limited to three regions (France, Germany, Spain) without broader context.

## **RECOMMENDATIONS**

These strategies, when paired with regular churn monitoring and customer feedback, will help Onyx Bank reduce attrition, build loyalty, and improve customer lifetime value.

### **1. Prioritize Mid-Career Customers (Aged 35–54):**

Customers in the 35–44 and 45–54 age groups recorded the highest churn. These segments are typically financially active but also more critical of service quality. Onyx Bank should develop tailored engagement campaigns for this age range using:

- Personalized email offers or lifestyle-based bundles (e.g., mortgage, savings, and card package)
- Re-engagement messages at key life points (e.g., birthdays, job changes, parenting milestones)

### **2. Enhance Mid-Tenure Customer Experience (3–6 Years):**

Churn peaks around the 3–6 year mark. To retain this segment:

- Implement proactive check-ins every 12 months post-onboarding
- Track engagement levels to detect early signs of disengagement (e.g., fewer logins, inactive products)

### **3. Promote Product Stickiness Through Smart Bundling:**

Single-product users are more likely to churn. To encourage multi-product adoption:

- Use behavioral nudges: e.g., “You’ve opened a savings account — complete your bundle with a debit card.”
- Offer short-term bundle incentives (e.g., ₦500 reward for adding a second product in 30 days)

#### 4. Support Customers with Low Credit Scores and Balances:

Fair credit score customers and those with low-to-mid balances have higher churn. Onyx Bank should:

- Offer financial literacy programs via SMS, social media, or webinars
- Assign onboarding agents or chat support to guide these users through product usage

#### 5. Localize Retention Strategies by Geography:

France and Germany drive the most churn, suggesting localized action is needed. Onyx Bank should:

- Translate onboarding and support materials into regional languages
- Tailor offers to reflect each country’s cultural and financial behaviors
- Pilot customer satisfaction surveys specific to France and Germany to uncover root causes

#### 6. Monitor Gender Patterns in Churn:

Although churn is only slightly higher among female customers, Onyx Bank can:

- Run gender-segmented satisfaction surveys to spot experience gaps
- Offer personalized product journeys for women in high-churn age bands (e.g., mid-career)
- Audit communications for inclusiveness and relevance

## CONCLUSION

The churn analysis for Onyx Bank reveals that age, tenure, product count, credit score, and balance level significantly impact customer retention. By understanding these segments and tailoring strategies accordingly, the bank can improve lifetime value, reduce churn costs, and build stronger customer relationships. Future work can include integrating customer feedback and real-time service quality indicators to provide an even deeper understanding of churn behavior.