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MAE SHAHVIRDI

Data Analyst

ABOUT ME

Hi, I am Mae. I am a data analyst with a curious mind and a passion for problem-solving. I enjoy examining data from different perspectives and using techniques to constantly check and analyze variables to find dependencies, error-prone situations, and correlations. This ensures the data we have is reliable and that real problems can be identified and addressed properly.

Persistent curiosity and skepticism are the core of my joy while working with data. I am eager to use my technical and interpersonal skills to uncover hidden trends and insights in data. By creating easily understandable narratives in presentations, I aim to convey data-driven stories effectively to help stakeholders understand the implications and make informed, actionable decisions.



Intro:

To investigate the key drivers behind customer attrition at X. Bank, with the goal of reducing churn, improving retention strategies, and supporting compliance efforts through actionable, databacked insights.

Skills:

- Proficiency in handling Big Data
- Understanding of Data Ethics
- Expertise in Data Mining
- Capability in Predictive Analysis
- Competence in Time Series Analysis and Forecasting
- Proficient use of GitHub

Goal:

The analysis focuses on identifying behavioral and demographic patterns among customers who leave the bank, using big data analytics, predictive modeling, and decision tree analysis. Insights aim to assist both the customer success team and the anti-money laundering (AML) compliance department.

Tools:

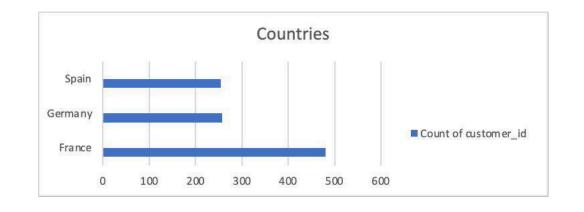


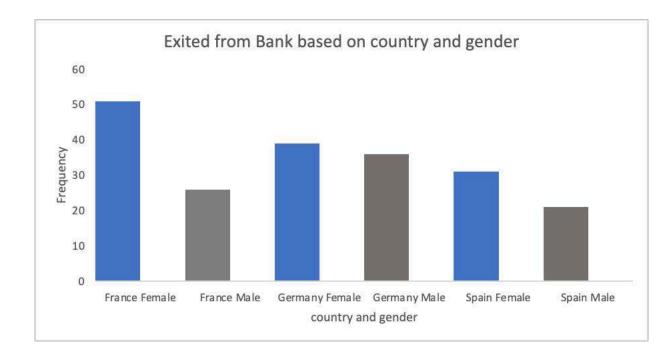


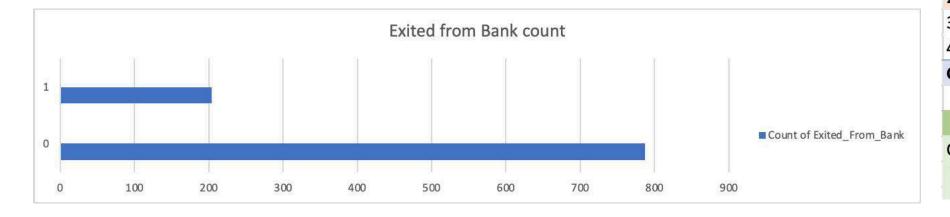
GitHub

Excel

To gain a better understanding of the data, analyses have been conducted to compare the differences between clients who leave and those who remain with the bank. This helps to identify the factors that are significant in client attrition.







Row Labels	▼ Count of Age %		Row Labels	Count of Age	%
■ 18-24	36	3.63%	18-24		2 0.9
■ 25-34	305	30.78%	25-34		24 11.7
■ 35-44	416	41.98%	35-44	3	73 35.7
■ 45-54	144	14.53%	45-54		68 33.3
■ 55-64	63	6.36%	55-64		32 15.6
® 65-74	22	2.22%	65-74		5 2.4
® 75-82	5	0.50%	Grand Total	2	04 100.0
Grand Total	991	100.00%			

Age groups between 25 and 44 constitute the majority of customers, around 72%. However, customers aged between 35 and 54 exit the bank at a rate of 68%.

While customers aged between 25 and 44 make up the largest portion of the customer base, it's notable that a significant proportion of customers within the 35 to 54 age range are exiting the bank. This suggests a critical period in the customer lifecycle where retention efforts may need to be focused, possibly indicating dissatisfaction or changing financial needs among this demographic.

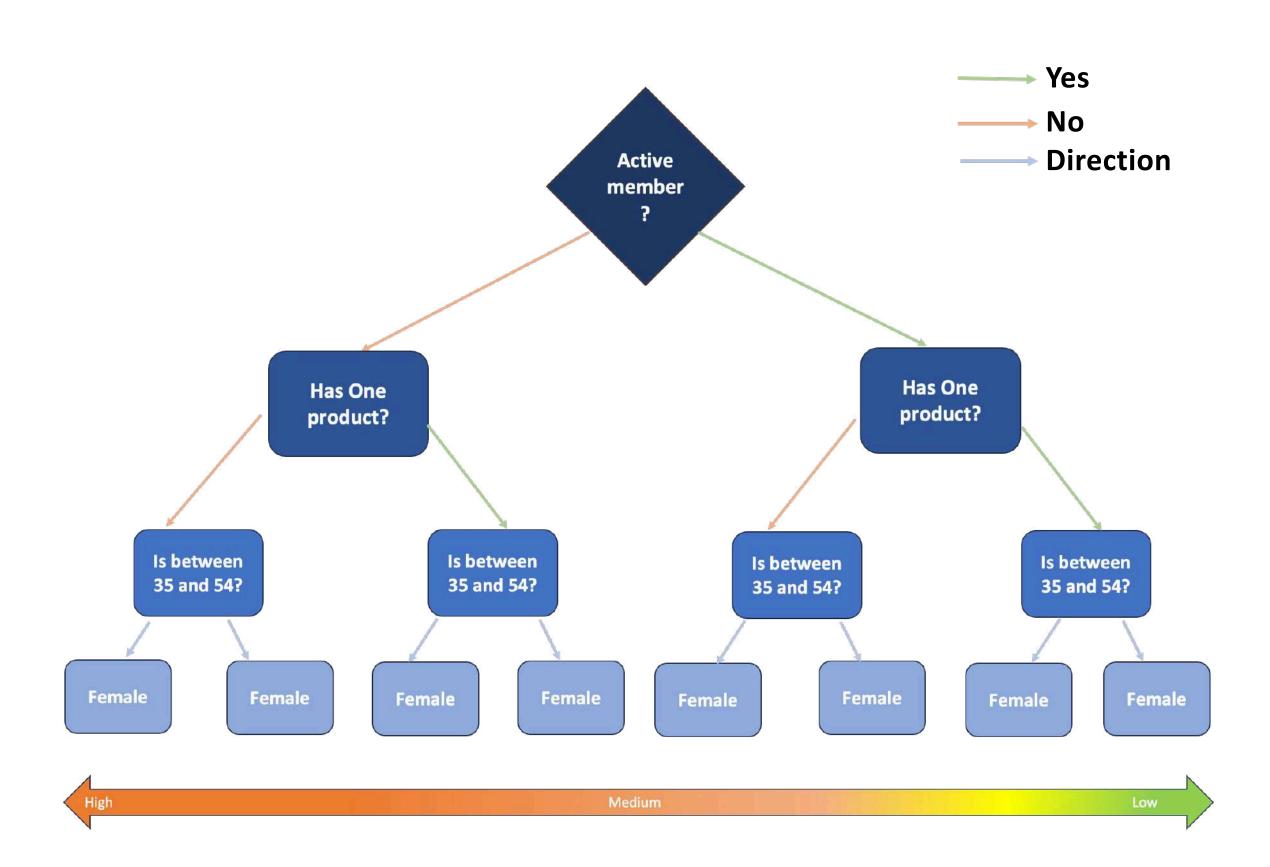
Row Labels	Count of no_of_product: Count	of no_of_products2	Row Labels	Count of exited_from_bank	Count of exited_from_bank2					
1	510	51.46%	1	142	69.61%					
2	446	45.01%	2	32	15.69%					
3	33	3.33%	3	28	13.73%					
4	2	0.20%	4	2	0.98%					
Grand Total	991	100.00%	Grand Total	204	100.00%					
Insights										
Customers with product numbers 1 and 2 constitute 96% of all customers. Interestingly, among these, those with product number 1 have an exit rate of 70% from the bank.										
This suggests that product number 1 may be associated with factors or features that lead to higher churn rates										

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RESULTS AND DECISION TREE

To gain a data driven insight Key Risk Factors are Identified, and a decision tree is made:

- **High Inactivity Churn:** Inactive customers exit at a 70% rate, indicating retention challenges.
- **Product Preference Impact:** Products 1 and 2 make up 96% of customers, with Product 1 showing a 70% exit rate, warranting further investigation.
- Age Group Vulnerability: Customers aged 35-54, 72% of the base, exhibit a 68% exit rate, highlighting a critical retention period.
- **Country Demographics:** France's 48% customer share may correlate with increased exits from this region.
- **Gender Disparities:** Females exit at 60%, particularly notable in Spain where female attrition is 1.5 times higher than males.



RECOMMENDATIONS

- Target Inactive Customers: Implement personalized communication and tailored offers to engage inactive customers and reduce churn.
- Product Optimization: Improve features associated with Product 1 to enhance customer satisfaction and retention.
- Age-Group Specific Strategies: Develop targeted retention efforts for customers aged 35-54 to address their specific needs and increase loyalty.
- **Geographical Focus:** Allocate resources to understand and address reasons for exits in regions with high customer concentration, such as France.
- Gender-Centric Approach: Tailor retention strategies to address female attrition rates, especially in regions like Spain, by offering female-centric products and services.

These insights support anti-money laundering compliance by:

- Identifying high-risk behavioral patterns.
- Enabling better customer segmentation.
- Enhancing model performance for transaction monitoring.
- Informing compliance reporting with predictive churn data.

Conclusion:

X. Bank has a clear opportunity to reduce attrition by integrating predictive analytics with targeted customer strategies. Future steps include real-time churn prediction deployment and tracking retention KPIs across branches and demographic segments.

Thank you!

let's connect:

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