

IS 574 BI and Analytics System Group Project 2

INDUSTRY: BANKING

PRESENTED BY: NOOR SUMAIYA (#2153428)
PRIYANKA SMART (#2162750)





LINK FOR THE DATASET-

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

The only change made to the dataset was the column 'NumberOfProducts' to 'Numberof Accounts'.



THE PROBLEM STATEMENT-

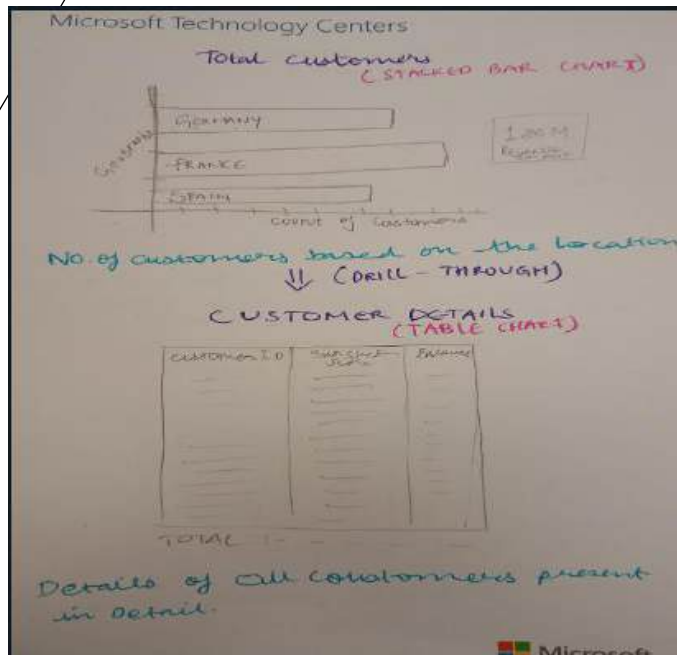
The banking sector faces challenges in understanding and retaining its diverse customer base, especially given varying satisfaction levels, high churn rates among specific demographics, and frequent customer complaints. Key issues include identifying high-churn segments, addressing low satisfaction scores across membership tiers, managing complaints effectively, and ensuring that active members remain engaged. Additionally, there is a need to measure the financial impact of customer behaviors on overall revenue. This project aims to leverage customer data insights to develop targeted retention strategies, improve customer satisfaction, and enhance service delivery, ultimately driving revenue growth and fostering customer loyalty.

To solve this, we'll use a focused, data-driven approach:

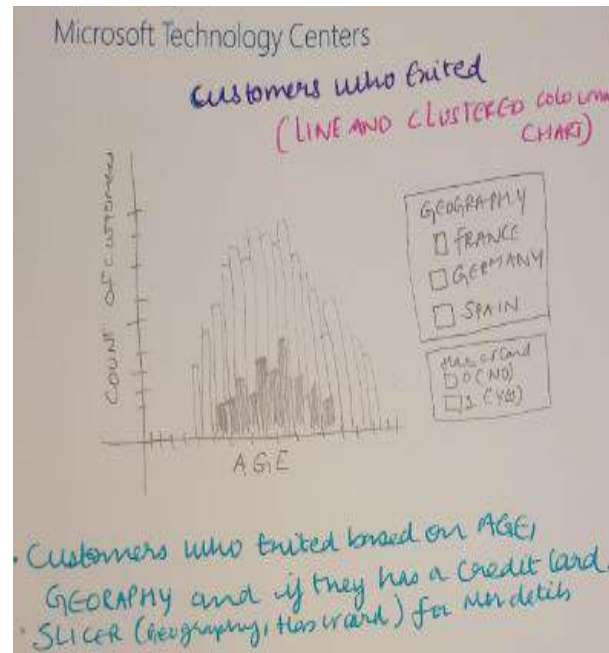
- 1.Retention Campaigns:** Target high-churn groups with special offers to keep them engaged.
- 2.Improve Satisfaction:** Enhance services in low-scoring membership tiers to boost satisfaction.
- 3.Complaint Management:** Prioritize segments with high complaints and address common issues faster.
- 4.Loyalty Programs:** Create special programs for older customers who tend to stay loyal.
- 5.Smart Resource Allocation:** Use financial impact data to focus on high-value areas.
- 6.Real-Time Monitoring:** Track key metrics through a dashboard and set up alerts for quick action.
- 7.Continuous Updates:** Regularly review and adjust strategies based on data insights.



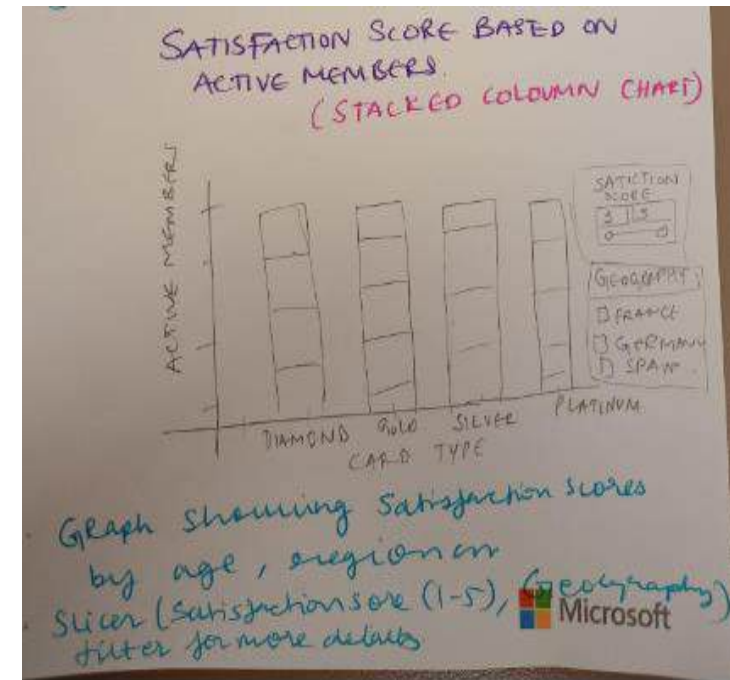
PHOTO SKETCH OF INITIAL DASHBOARD



The first image shows a bar chart comparing the number of customers by geography (Germany, France, Spain), with a revenue impact of 185.68M. The second image is a drill-through detailed view, listing customer details such as satisfaction scores, account numbers, and balances.

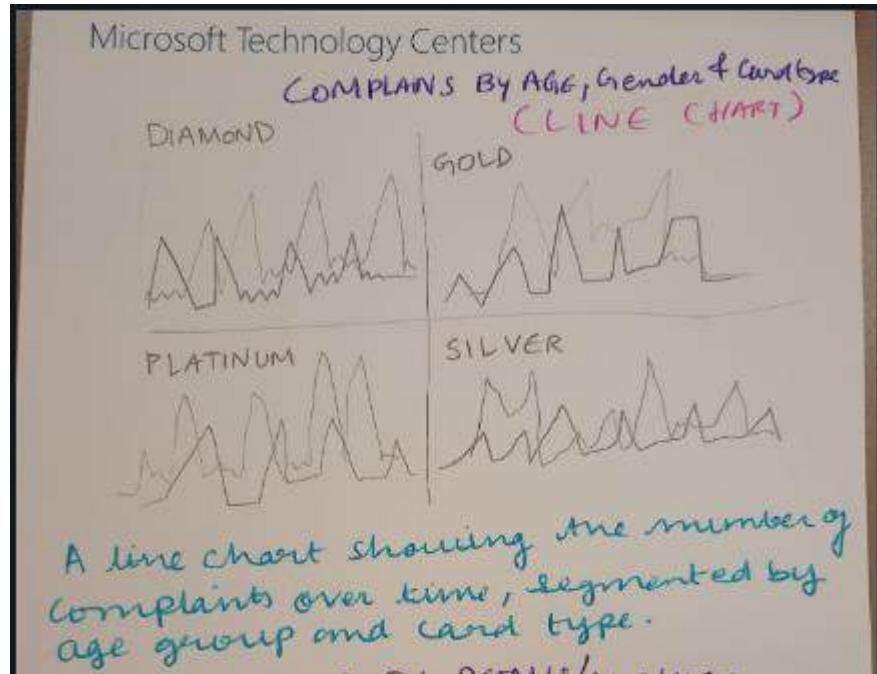


This chart shows the count of customers who exited based on their age, geography, and credit card ownership. It highlights that most exits occurred in the age range, with variations across France, Germany, and Spain.

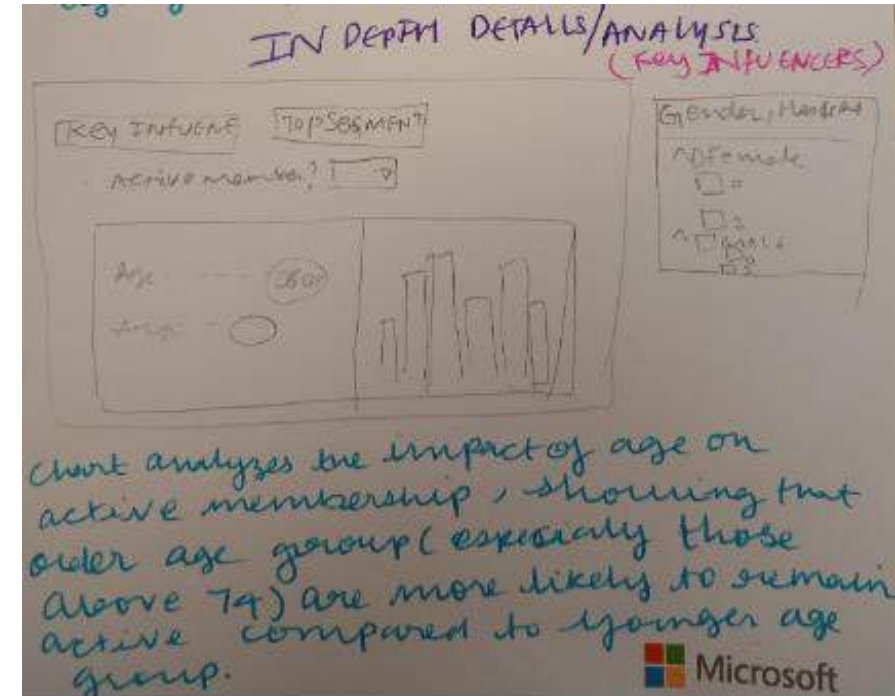


This stacked bar chart illustrates the count of active members by card type (Diamond, Gold, Silver, Platinum) and satisfaction score. Each card type shows a similar distribution across satisfaction levels, ranging from scores 1-5.

PHOTO SKETCH OF INITIAL DASHBOARD



This multi-line graph displays the sum of complaints by age, gender, and card type (Diamond, Gold, Platinum, Silver). Each subplot shows distinct complaint patterns for males and females across different age groups and card types.

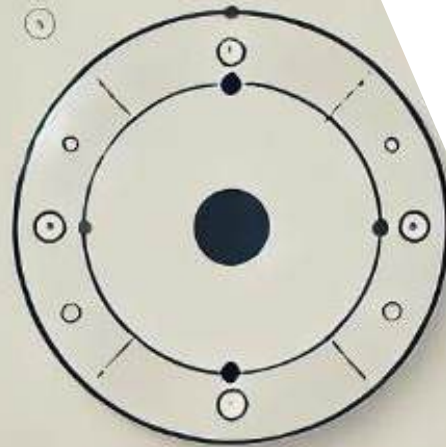


This key influencers chart shows that members aged over 65 are more likely to be active, increasing the likelihood of active membership by 0.37 compared to other age groups.



STORYBOARD OF THE DASHBOARD PART 1

Storyboard of the Dashboard



Customer Distribution by Geography

This chart shows the number of customers in Germany, France, and Spain, providing a geographical breakdown of the bank's customer base. It highlights Germany and France as key markets with the highest customer counts, guiding targeted engagement and service initiatives.

Customer Details Drill-Down

A detailed view of individual customer data, including satisfaction scores, account counts, and balances. This drill-through supports in-depth analysis of specific customer profiles, helping identify high-value customers and potential upsell opportunities.

Customer Exit Analysis by Age, Geography, and Credit Card Ownership
Displays churn rates segmented by age group, geography, and whether customers hold a credit card. Insights from this chart enable the bank to identify high-churn demographics (particularly ages 35-50), enabling focused retention strategies.

Active Membership by Card Type and Satisfaction Score

Stacked bar chart showcasing satisfaction distribution across membership tiers (Diamond, Gold, Silver, Platinum). This helps assess satisfaction across card types, providing insights to enhance customer experiences for low-satisfaction segments.

STORYBOARD OF THE DASHBOARD PART 2

- Complaints by Age, Gender, and Card Type**

Line charts displaying complaint volumes segmented by age, gender, and card type. The bank can use these insights to identify pain points by customer segment, allowing for targeted improvements in customer service.

- Key Influencers of Active Membership**

This analysis identifies key factors affecting active membership, showing that customers over 65 are more likely to stay engaged. This insight supports developing loyalty programs for older customers to improve retention.

- Revenue Impact Summary**

Highlights the total revenue impact based on key customer segments. This overview ties the customer insights back to financial outcomes, helping prioritize initiatives that have the most significant revenue implications.



DATASET ANALYSIS AND CONTENTS

ANALYSIS OF THE DATASET-

•Customer Distribution by Geography

The chart shows Germany and France have the highest customer base, signaling strong market potential. Spain's lower count suggests a need to explore engagement strategies for growth.

•Customer Details Drill-Down

Detailed customer data, including satisfaction scores and balances, highlights high-value customers. This granular view enables the bank to identify specific profiles for potential upsell and targeted retention efforts.

•Customer Exit Analysis by Age, Geography, and Credit Card Ownership

Higher churn rates appear among middle-aged customers, especially in France and Spain, indicating the need for tailored retention efforts for this demographic to reduce attrition.

•Active Membership by Card Type and Satisfaction Score

Satisfaction levels vary across card types, with Silver and Gold showing lower scores. Enhancing benefits for these tiers could improve satisfaction and increase overall member engagement.

•Complaints by Age, Gender, and Card Type

Younger customers and premium cardholders report higher complaints, especially males. This points to a need for improved customer service and issue resolution focused on high-value customer segments.

•Key Influencers of Active Membership

Customers over 65 are more likely to remain active, suggesting loyalty programs for this segment could further increase engagement. This insight supports retention strategies focused on senior customers.

•Revenue Impact Summary

The overall revenue impact reflects the financial importance of retaining high-value customers. Prioritizing engagement and satisfaction for key customer segments could enhance long-term profitability.

DATASET CONTENTS-

The bank collected the data about the customers which included following information about the customer-

Customer ID, Age, Gender, the customer has credit card or not, what type of credit card, region- France, Germany and Spain, Credit Score, Points Earned, satisfaction score, complain, Exited, Estimated Salary, Number of accounts and is active Member.

OVERVIEW OF THE DASHBOARD-

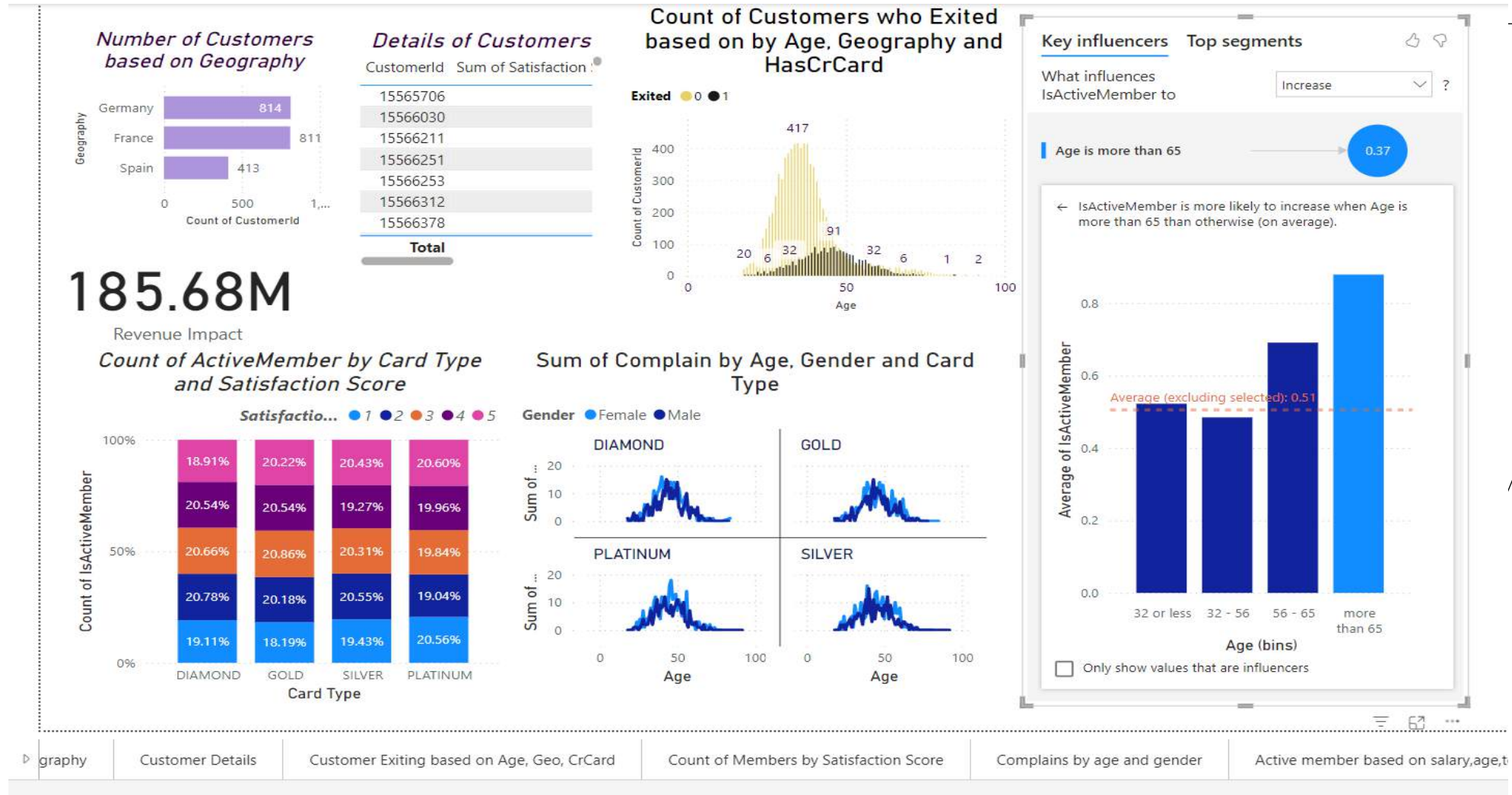
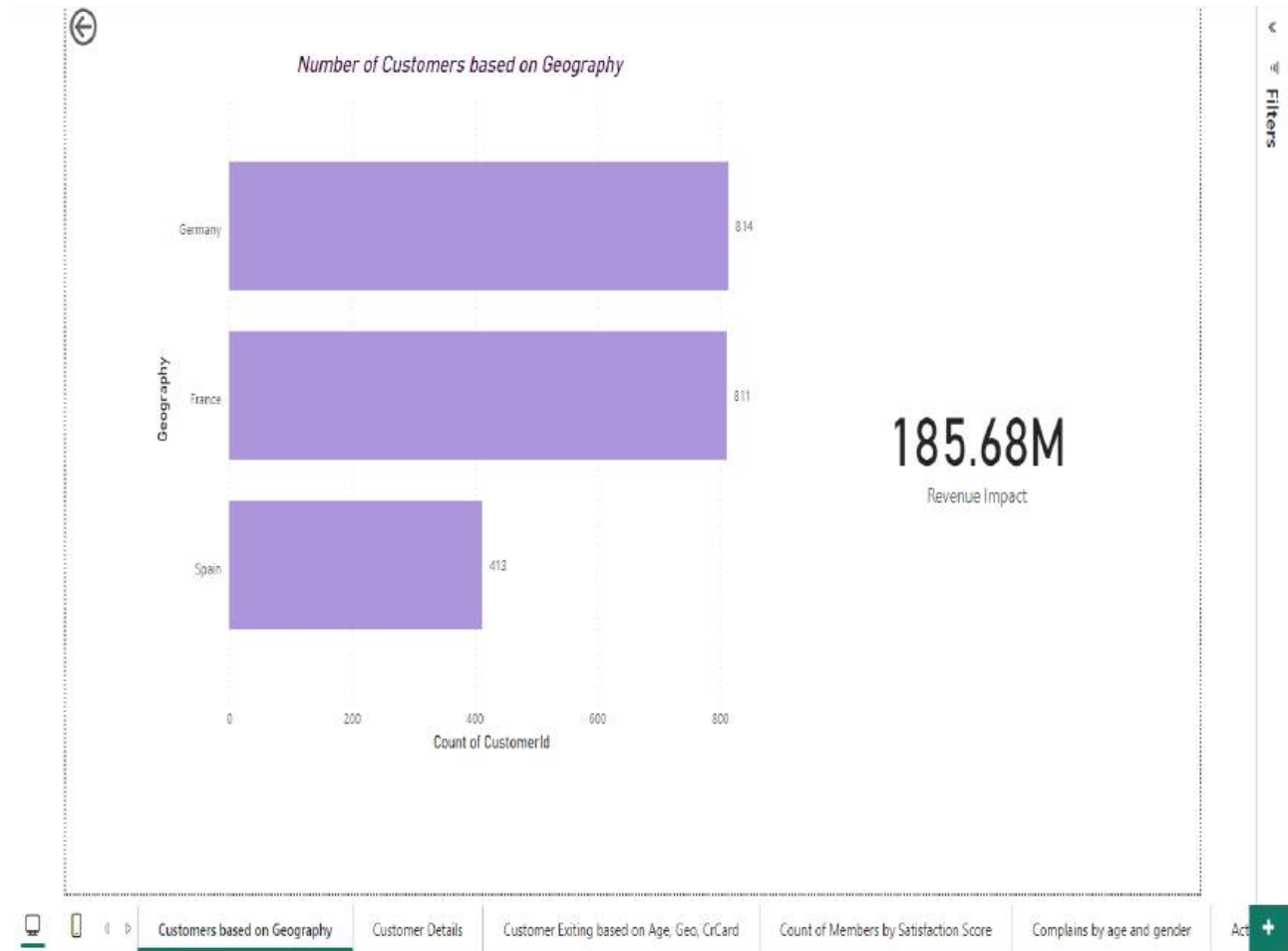


CHART 1-CUSTOMERS BASED ON GEOGRAPHY

PARAMETERS USED

1. A Drill Through chart which gives an overview of Customer by Customer ID based in different locations. It further provides information for each customer based on Number of Accounts, Satisfaction Score and Balance.
2. Why drill through- It provides a detail understanding for understanding the customer in a region based on satisfaction score, balance and number of Accounts.
3. KPI CARD- Using this visual we get to know the overall revenue of the bank i.e. 185.68M

CHART 1- STACKED BAR CHART



DRILL THROUGH CHART

Drill through

Details of Customers			
CustomerId	Sum of Satisfaction Score	Sum of NumOfAccounts	Sum of Balance
15566030	2	1	80,542.81
15566211	3	1	103,560.57
15566253	4	1	143,391.07
15566531	3	1	88,046.88
15566988	1	1	141,535.52
15567063	1	1	106,434.94
15567506	1	2	114,940.67
15567630	5	1	100,275.88
15567778	5	1	144,027.80
15567980	3	1	100,727.50
15568573	1	1	105,701.91
15568748	3	1	99,564.22
15568819	5	3	132,796.04
15568963	4	1	152,797.90
15569079	3	1	126,066.26
15569274	5	1	116,933.11
15569571	4	2	87,361.02
15569590	2	1	98,495.72
15569641	2	1	130,701.29
15569682	1	1	108,308.11
15569976	4	1	136,186.44
15570002	1	4	118,772.71
15570289	2	1	103,409.16
15570533	4	1	131,033.76
15570835	2	1	112,044.72
15571193	2	1	144,386.32
15571221	3	1	116,313.57
15571221	3	1	116,313.57
Total	2401	1184	97,973,915.53

Customer Details

Customer Exiting based on Age, Geo, CrCard

Count of Members by Satisfaction

Drill through detailed page

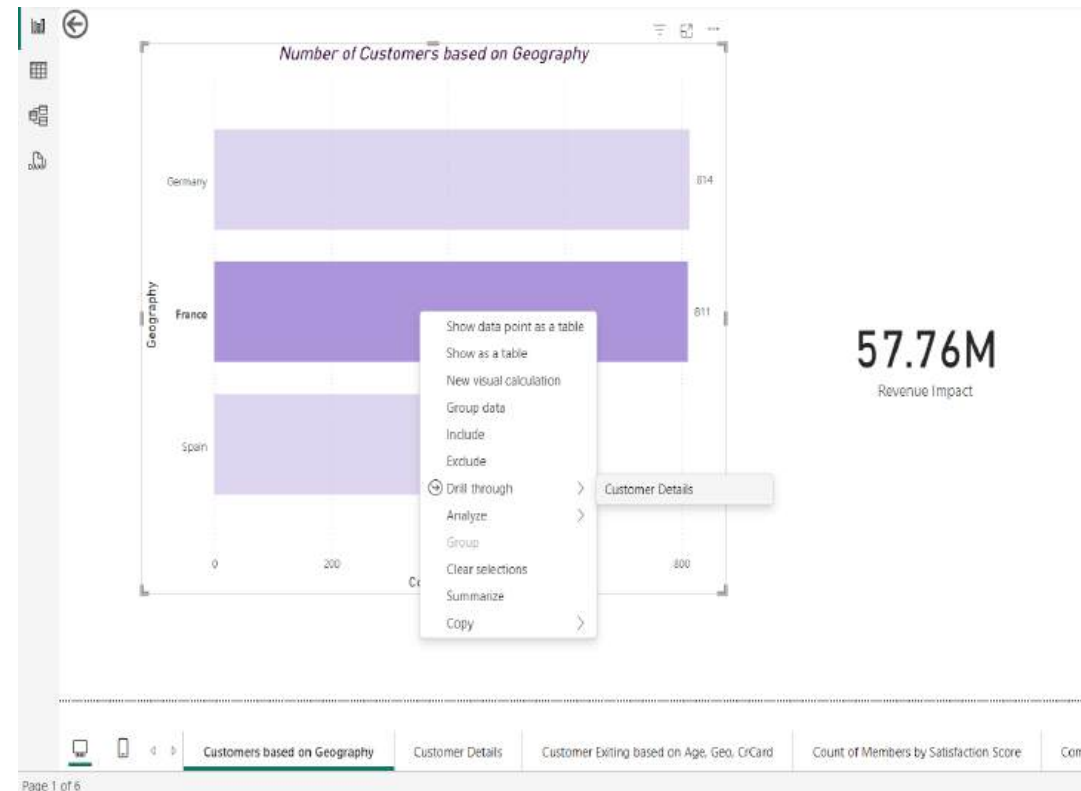


CHART 2-CUSTOMERS BASED ON AGE, GEOGRAPHY AND CREDIT CARD HOLDER

PARAMETERS USED-

1. A line and column clustered chart which provides analysis about customers based in different regions segregated based on Age and if they own a credit card or not.
2. Line and column chart provides a semantic view to understand the pattern based on various factors.

Chart 2- Line and Column Clustered Chart

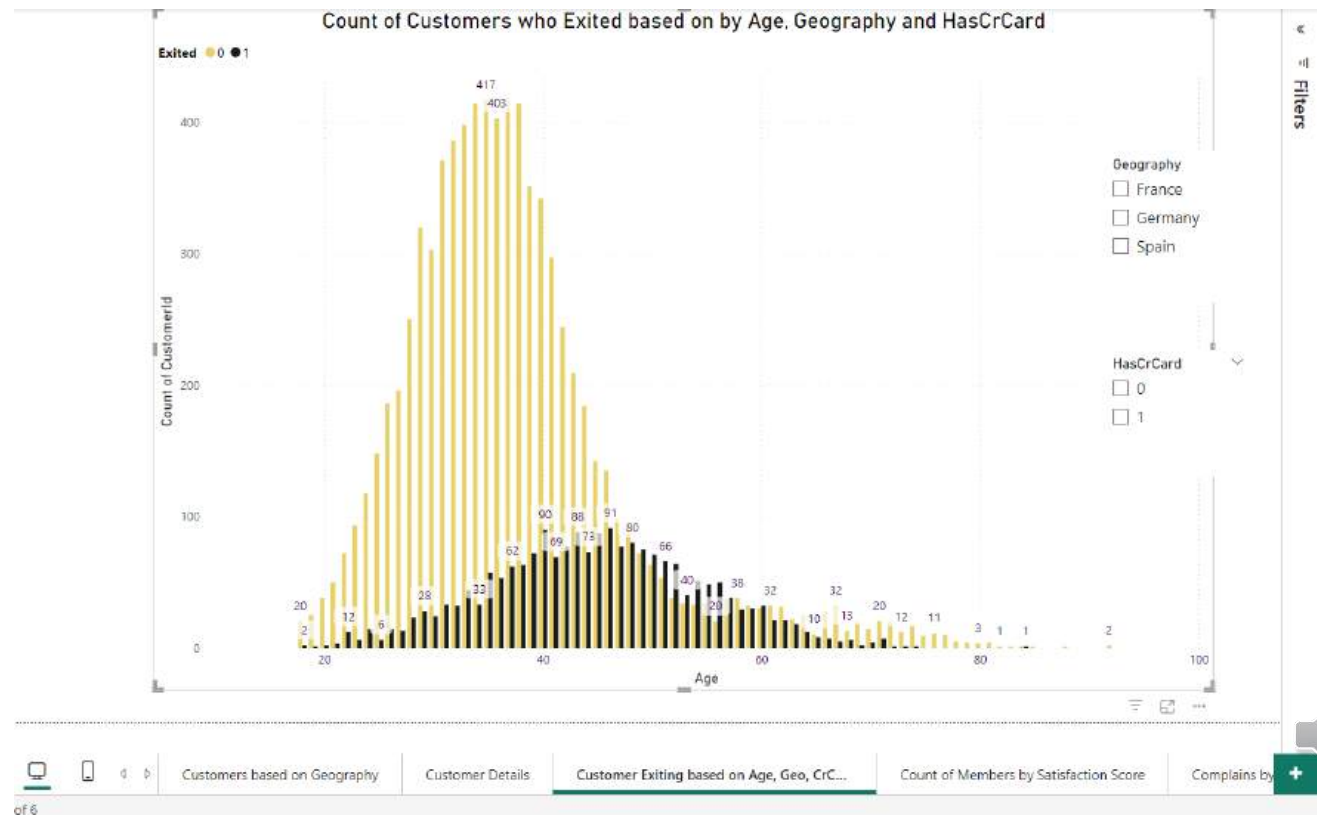


CHART 2 AFTER ADDING THE FILTERS-

EXPLANATION-

1. Filters used are-
2. Geography- France and Germany
3. Exited- Value is 1.

CHART 2-

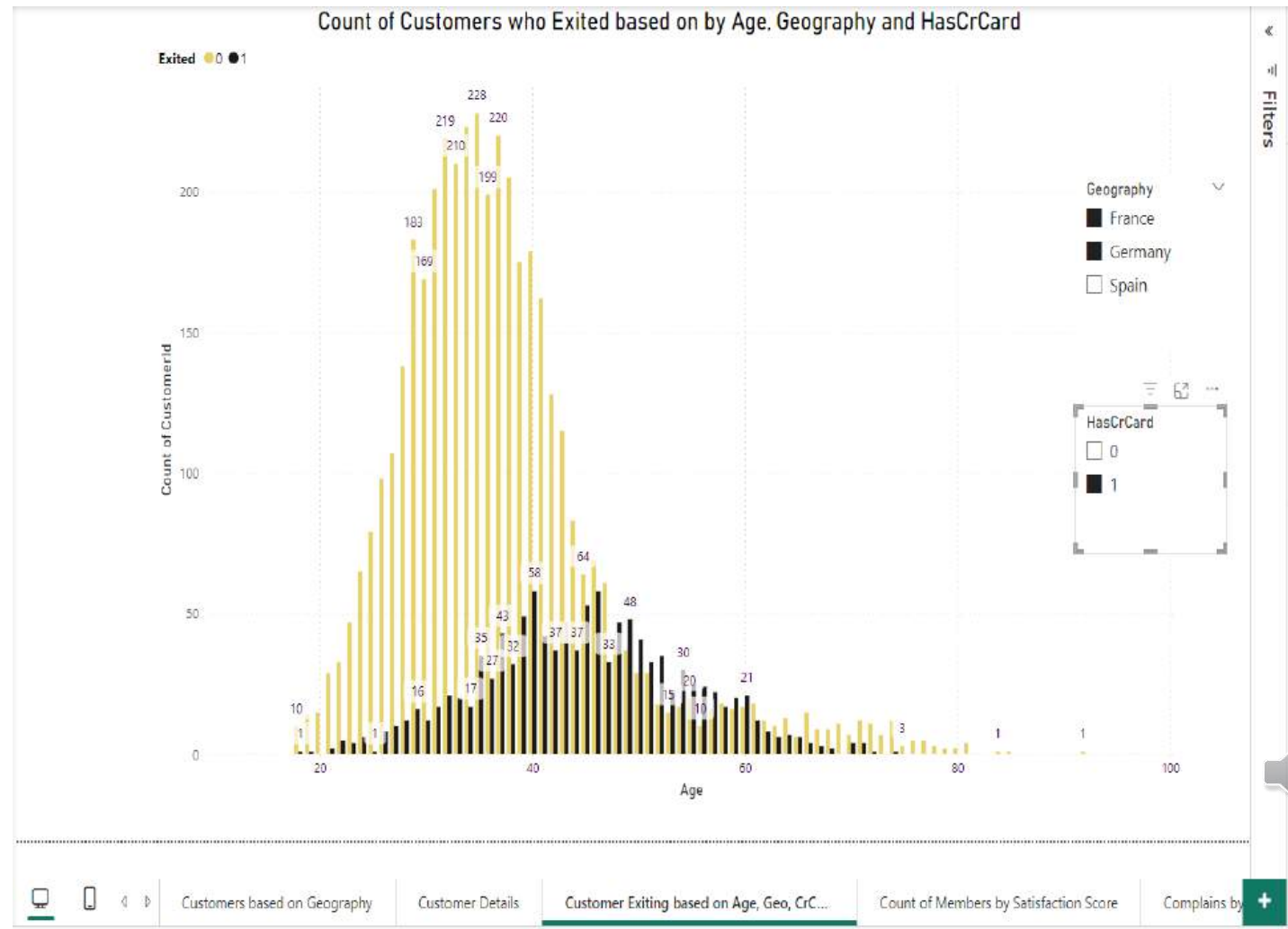


CHART 3- ACTIVE MEMBER BASED ON SATISFACTION SCORE AND CARD TYPE

PARAMETERS USED

1. A stacked column chart is utilized to analyze customer data based on their card type, along with other factors such as satisfaction score and geographic region.
2. A stacked column chart allows for the comparison of different categories (e.g., card types) within a single visual, making it easier to see how each segment contributes to the total, while effectively displaying multiple..

Chart 3- Stacked Column Chart

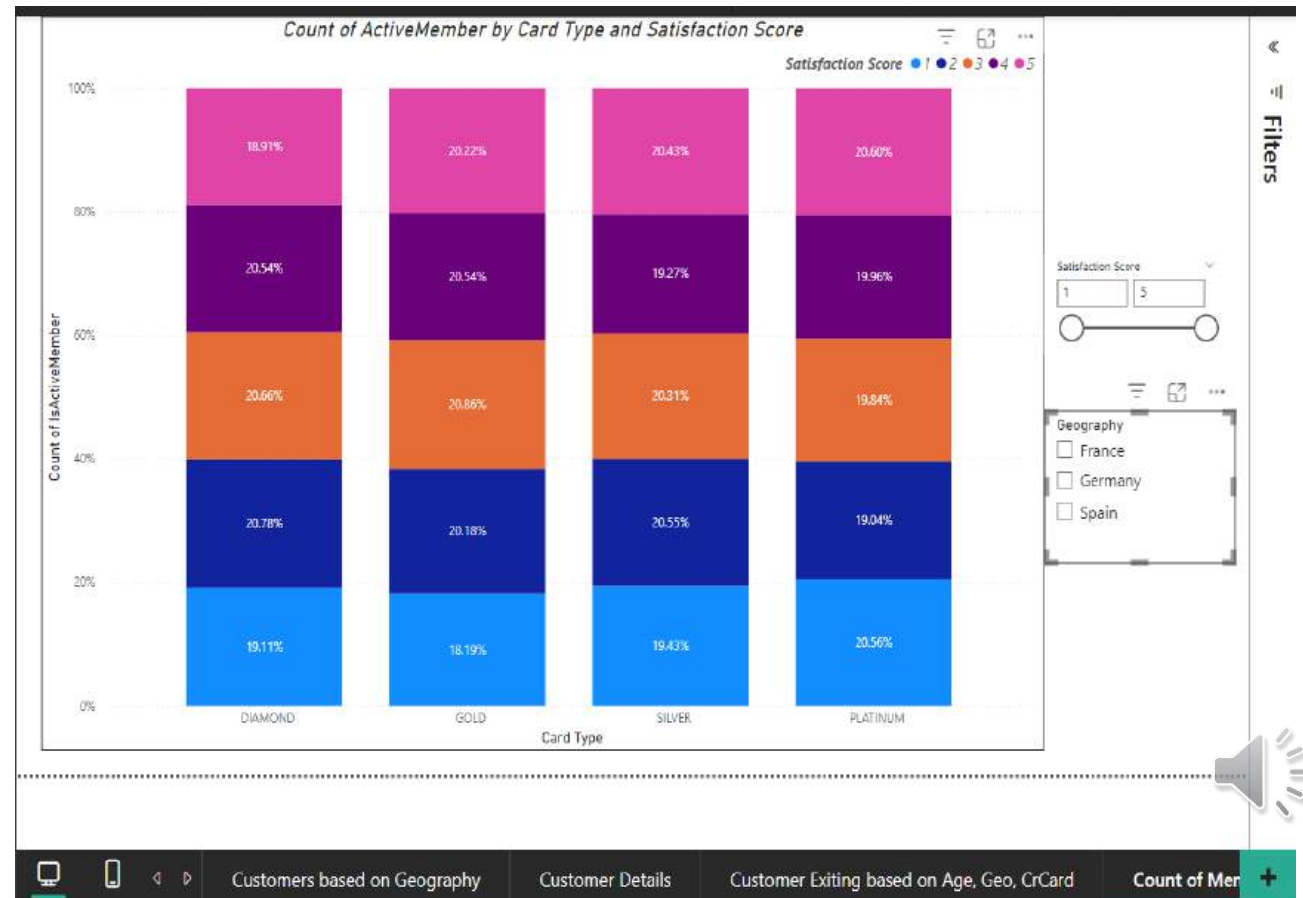


CHART 3 AFTER SETTING THE FILTER-

CHART 3 WITH FILTERS

EXPLANATION-

FILTERS USED-

1. Geography- **Spain and Germany**
2. Satisfaction score range= 1-3

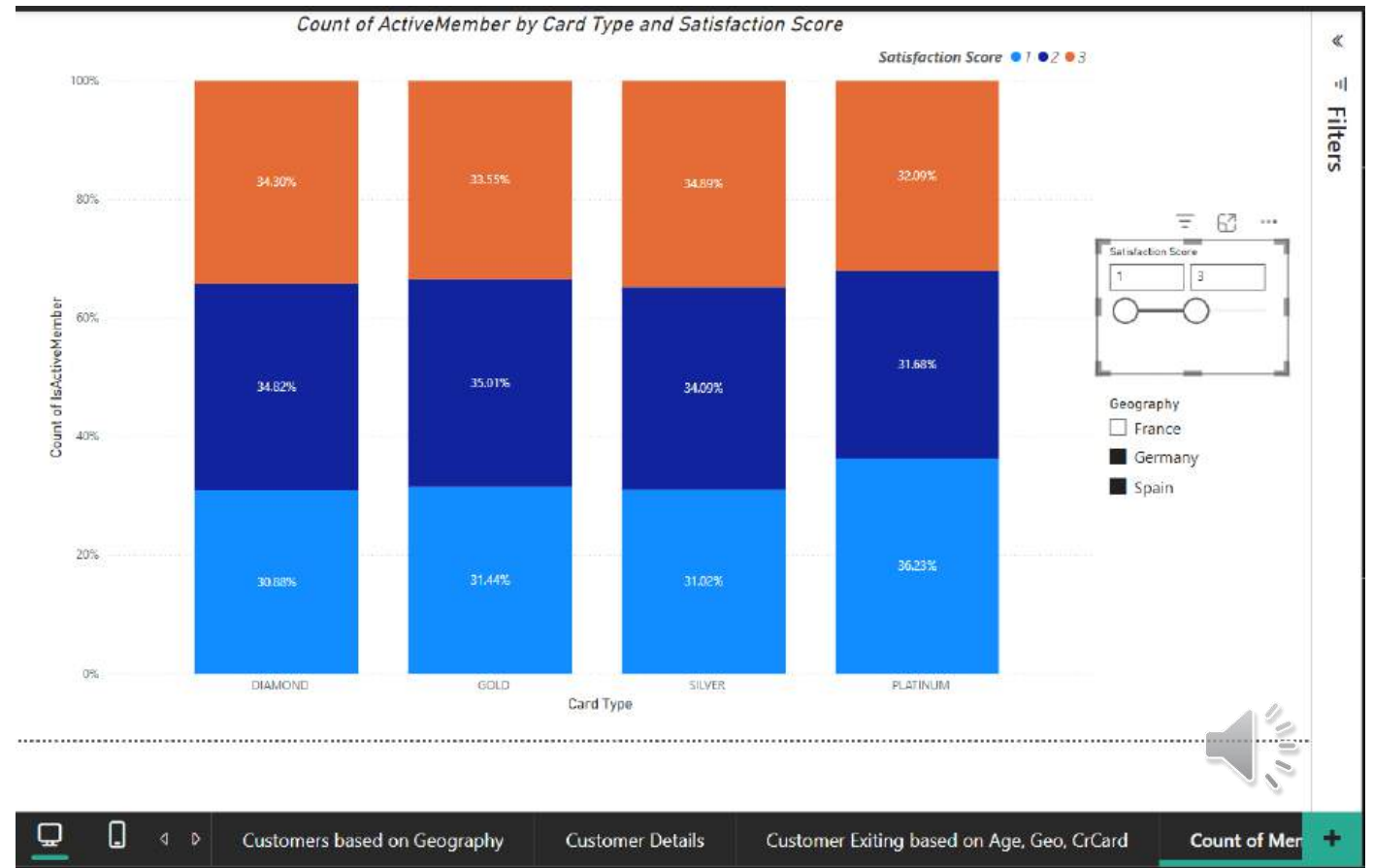


CHART 4- COMPLAIN BY AGE GENDER AND CARD TYPE

PARAMETERS USED

1. To understand the dynamics of the complain based on age, gender and card type.
2. A line chart helps in showing the increase and decrease based on gender and age differentiating by card type.

LINE CHART

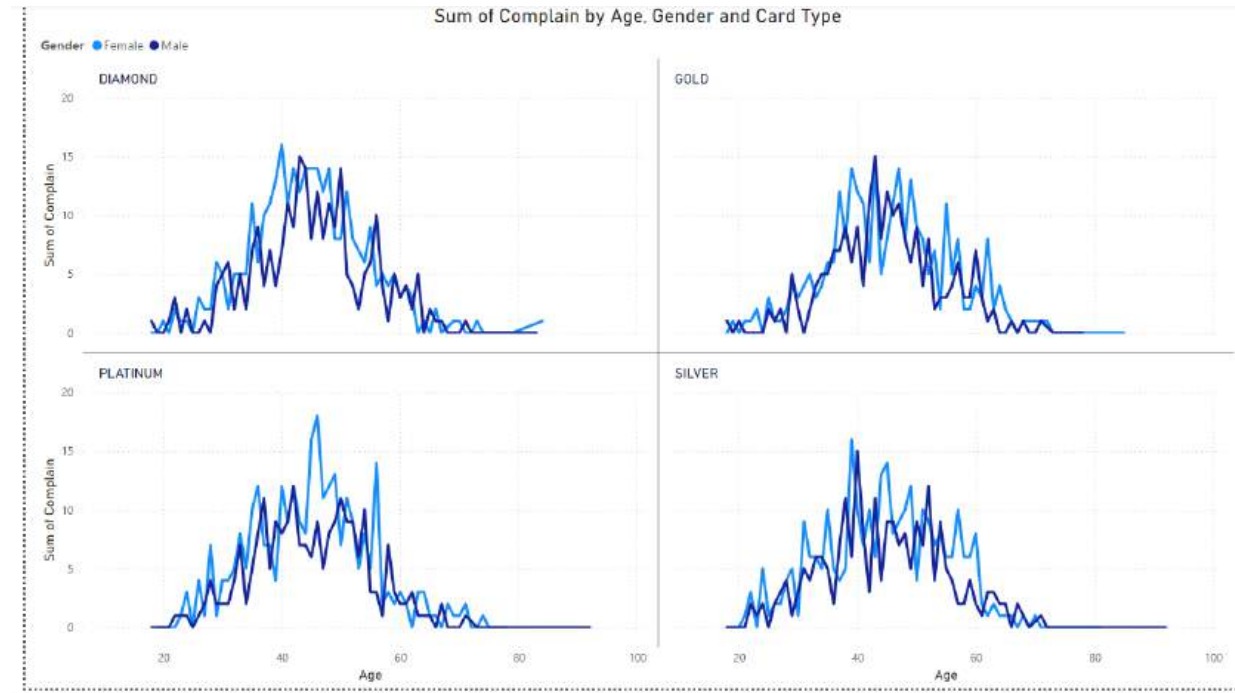


CHART 5- ACTIVE MEMBER BASED ON AGE, SALARY AND TENURE

PARAMETERS USED

1. To identify which age group and salary range are likely to remain active members of the bank, the Key Influencers chart highlights key factors contributing to customer consistency and aids in further analysis.

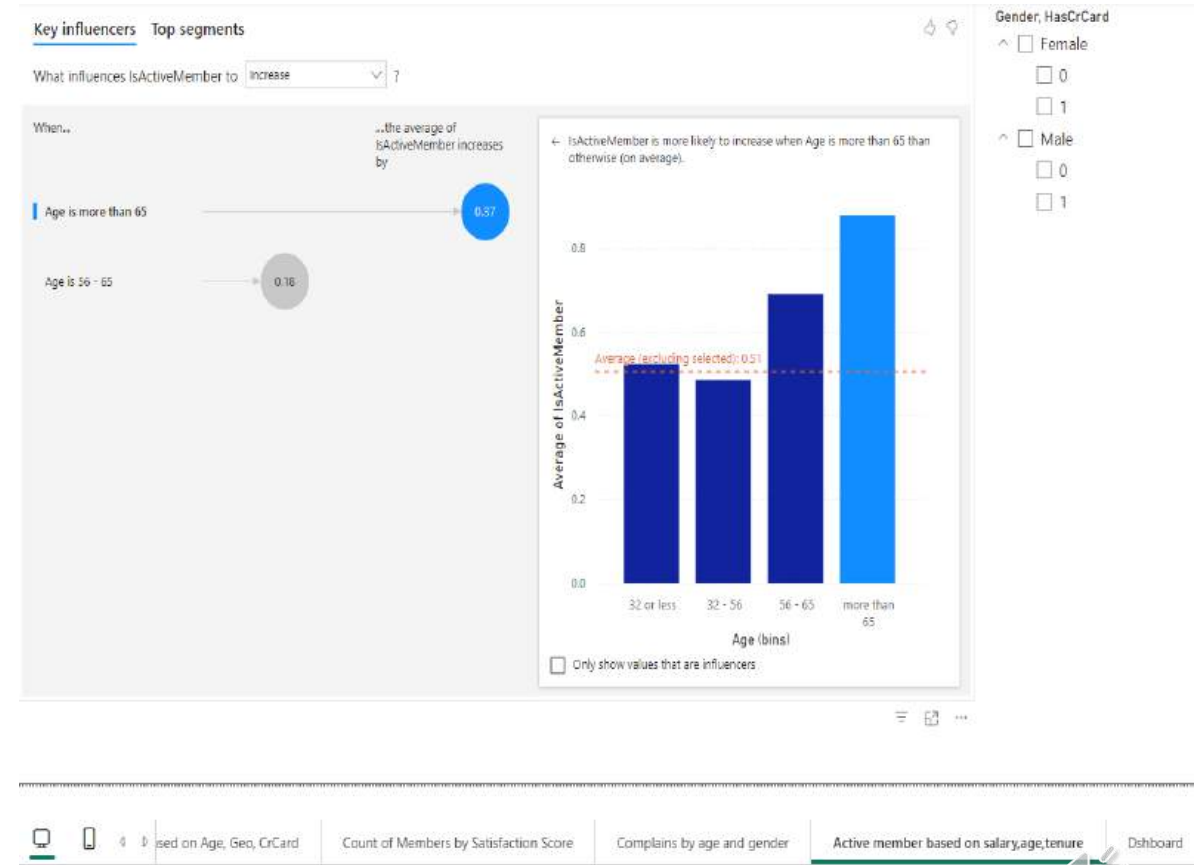
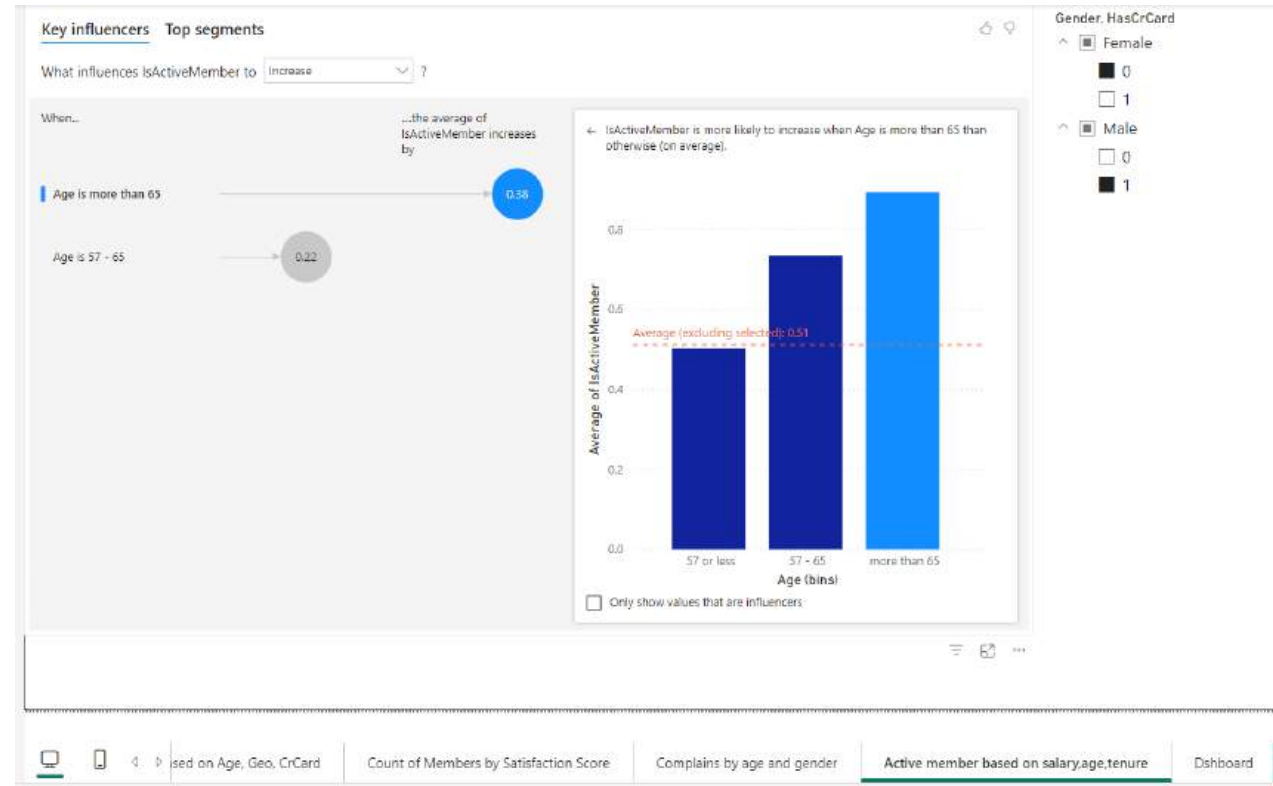


CHART 5 AFTER ADDING THE FILTERS

EXPLANATION

1. FILTERS USED
2. GENDER- FEMALE
3. CREDIT CARD – No
GENDER- MALE
4. CREDIT CARD- YES



STORY OF FINDINGS AND RECOMMENDATIONS PART 1

Insights & Recommended Actions from Customer Data Analysis

Story of Findings: After analyzing the customer data, a clear story emerged about the dynamics of customer satisfaction, loyalty, and churn within the bank's diverse customer base. We found that specific segments, particularly middle-aged customers, have higher churn rates, especially in regions like France and Spain. Older customers, however, tend to remain loyal and show higher engagement, indicating an opportunity to strengthen retention programs for this group. We also observed that satisfaction scores vary significantly across different card types, with certain tiers (e.g., Silver and Gold) showing lower satisfaction, possibly due to unmet expectations or service gaps. Furthermore, complaint trends reveal that younger customers and those with premium cards are more likely to express dissatisfaction, pointing to the need for enhanced service for these high-value customers.



STORY OF FINDINGS AND RECOMMENDATIONS PART 2

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A series of white, overlapping geometric lines and polygons on a black background, primarily located on the left side of the slide.

THANK YOU

