Bank Of America Customer Complaint Analysis

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Business Overview

Bank of America receives thousands of customer complaints each year reported through the Consumer Financial Protection Bureau (CFPB). These complaints span various financial products including **Savings Accounts, Credit Reporting, Credit Cards, Mortgages, Money Transfers, and Debt Collection**, and are submitted through multiple channels such as **web, referrals, phone**, and **postal mail**.

Although the bank has established processes for receiving, reviewing, and responding to complaints, it lacks a **centralized analytical system** that provides clear visibility into complaint patterns, geographical hotspots, response performance, and emerging risks. The absence of a unified analysis limits the bank's ability to identify root causes, prioritize operational improvements, and proactively reduce customer dissatisfaction.

This project aims to deliver an end-to-end analysis of customer complaints recorded between **2017 and 2023**, supported by an interactive Power BI dashboard that answers the critical business questions needed for operational, regulatory, and strategic decision-making.

Business Problem

Bank of America currently faces several challenges in understanding and managing customer complaints effectively:

1. **Lack of visibility into high-risk products and issues**
   The bank cannot easily identify which **products**, **issues**, or **categories** drive the highest number of complaints. Without a product-level breakdown, emerging problem areas remain unidentified.

2. **No clear understanding of geographical complaint distribution**
   Complaint volumes vary widely across **states and regions**, but the bank lacks a consolidated view showing where complaints are most concentrated and which regions require operational attention.

3. **Insufficient insight into complaint submission patterns**
   Customers submit complaints through various channels, but the bank does not have a clear understanding of which channels are most used or whether certain

channels correlate with higher dissatisfaction.

4. **Limited transparency into response quality and timeliness**
   While complaints are being closed, the bank lacks unified reporting on:

   - response timeliness,

   - resolution outcomes (e.g., closed with explanation, closed with monetary relief),

   - customer satisfaction levels,

   - and regions with faster or slower processing times.

5. **No predictive capability to anticipate future complaint volumes**
   Strategic teams lack forward-looking insights on expected complaint trends. With rising regulatory expectations, the bank must be able to forecast complaint volumes for future years to allocate resources and manage risk.

These gaps reduce the bank's ability to respond proactively to customer concerns, increasing operational pressure, reputational risk, and potential regulatory scrutiny.

Project Objective

The objective of this project is to analyze historical CFPB complaints and develop an interactive Power BI dashboard that:

- Highlights **top products** and **most common issues**.
- Maps complaint distribution across **regions** and **states**.
- Evaluates the effectiveness and timeliness of **response outcomes**.
- Tracks complaint trends across **years**, **months**, and **channels**.
- Provides **predictive insights** for the next two years using forecast models.
- Supports decision-making for customer experience improvement and risk management.

Stakeholders

The following stakeholders will benefit from the insights generated:

1. Customer Experience Team

They require visibility into the most frequent customer issues and dissatisfaction drivers to improve service delivery.

2. Compliance & Risk Management Team

They must monitor patterns that may indicate regulatory risk, operational failures, or customer harm.

3. Product Managers

They need product-level complaint insights to understand weaknesses in Credit Cards, Savings Accounts, Money Transfers, etc.

4. Operations & Resolution Teams

Responsible for handling and closing complaints, they require insights on timeliness, volumes, and processing gaps.

5. Executive Management & Strategy Teams

They rely on high-level dashboards and forecasts to support resource planning, performance evaluation, and long-term decision-making.

Analysis & Methodology

To address the business problems and answer stakeholder questions, a comprehensive analysis was conducted on Bank of America's CFPB customer complaint dataset (2017–2023). The process included **data cleaning**, **data modeling**, **measure creation**, **visual analytics**, and **predictive forecasting**.

The analysis followed these stages:

1. Data Understanding & Cleaning

- Standardized inconsistent product names and categories.

- Validated dates for *Date received* and *Date sent to company*.

- Created a unified **Date Table** to support time intelligence analysis.

- Removed blank complaint IDs and duplicate entries.

- Ensured all complaint records were linked correctly to states, products, issues, and response outcomes.

2. Data Modeling

A **Star Schema** was created:

Fact Table

- Fact_Complaints

    - Complaint ID

    - Product

    - Issue

    - Region / State

- ○ Submission Channel

- ○ Date Received

- ○ Date Sent to Company

- ○ Response Type

- ○ Timely Response Flag (Yes/No)

Dimension Tables

- DateTable

- Product Dimension

- State/Region Dimension

- Issue Category Dimension

Relationships were created between **Fact_Complaints** and the DateTable using *Date Received*.

3. DAX Measures Used to Produce Insights

📌 Base Measures

Total Complaints = COUNTROWS('Fact_Complaints')

Total Complaints (Monthly) =

CALCULATE([Total Complaints], ALLEXCEPT('DateTable','DateTable'[YearMonth]))

Total Complaints (Yearly) =

CALCULATE([Total Complaints], ALLEXCEPT('DateTable','DateTable'[Year]))

📌 Complaint Trend Analysis

Last Actual Year =

CALCULATE(MAX('DateTable'[Year]),

FILTER(ALL('DateTable'), NOT ISBLANK([Total Complaints])))

Total Complaints (Last Year) =

CALCULATE([Total Complaints], 'DateTable'[Year] = [Last Actual Year] - 1)

YoY % Change =

DIVIDE([Total Complaints] - [Total Complaints (Last Year)], [Total Complaints (Last Year)])

Used to generate **year-over-year trend charts** and KPI cards.

📌 Response Performance

Timely Response % =

DIVIDE(

   CALCULATE([Total Complaints], 'Fact_Complaints'[Timely response] = "Yes"),

   [Total Complaints]

)

Customer Satisfaction % =

CALCULATE(

```
    DIVIDE(

        CALCULATE([Total Complaints], 'Fact_Complaints'[Consumer disputed] = "No"),

        [Total Complaints]

    )

)
```

These supported visuals on **response quality**, **timeliness**, and **resolution outcomes**.

📌 Geographical Insights

Complaints by State = [Total Complaints]

Complaints by Region =

CALCULATE([Total Complaints], ALLEXCEPT('Fact_Complaints','Fact_Complaints'[Region]))

Used to render the **state map** and **regional breakdown**.

📌 Forecasting (Next 2 Years)

Growth for forecasting:

Complaint Growth Rate =

VAR Last = [Last Actual Year]

VAR Current = CALCULATE([Total Complaints], 'DateTable'[Year] = Last)

VAR Previous = CALCULATE([Total Complaints], 'DateTable'[Year] = Last - 1)

RETURN DIVIDE(Current - Previous, Previous)

Forecast year + 1:

Forecast Next Year =

VAR LastValue = CALCULATE([Total Complaints], 'DateTable'[Year] = [Last Actual Year])

RETURN LastValue * (1 + [Complaint Growth Rate])

Forecast year + 2:

Forecast Year After Next =

VAR NextYearValue = [Forecast Next Year]

RETURN NextYearValue * (1 + [Complaint Growth Rate])

These were displayed in **three KPI cards**:

- Forecast 2024

- Forecast 2025

- Two-Year Growth %

Executive Summary

This analysis evaluated **62,000+** customer complaints submitted to the CFPB regarding Bank of America from **2017 to 2023**. The goal was to provide leadership with a data-driven understanding of what customers complain about, where complaints originate, how effectively the bank responds, and what future complaint levels may look like.

The analysis revealed that complaints are heavily concentrated around **Savings Accounts**, **Credit Cards**, and **Credit Reporting**, with the **South and West regions** recording the highest volumes. While the bank maintains strong response outcomes, with **97.6%** of customers indicating *no dispute*, there are notable variations in response **timeliness** across regions.

Customers primarily use **web and referral channels** to submit complaints, indicating a shift toward digital engagement. Forecasting models show that, if current patterns continue, complaint volumes may continue to rise modestly over the next two years.

The findings provide clear direction for improving service delivery, product experience, and operational efficiency.
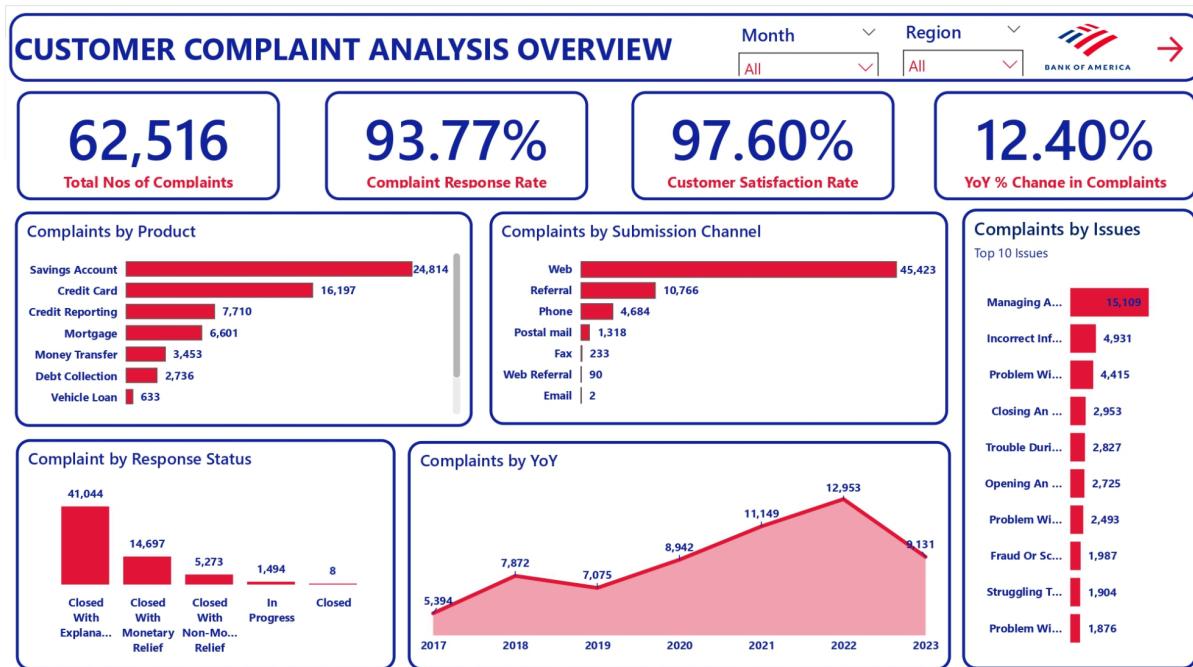
🔍 Key Insights

1. Savings Accounts, Credit Cards & Credit Reporting are the top complaint drivers

These three products consistently account for over half of all complaints.

2. "Managing Account", "Incorrect Information", and "Billing Issues" are the most recurring issues

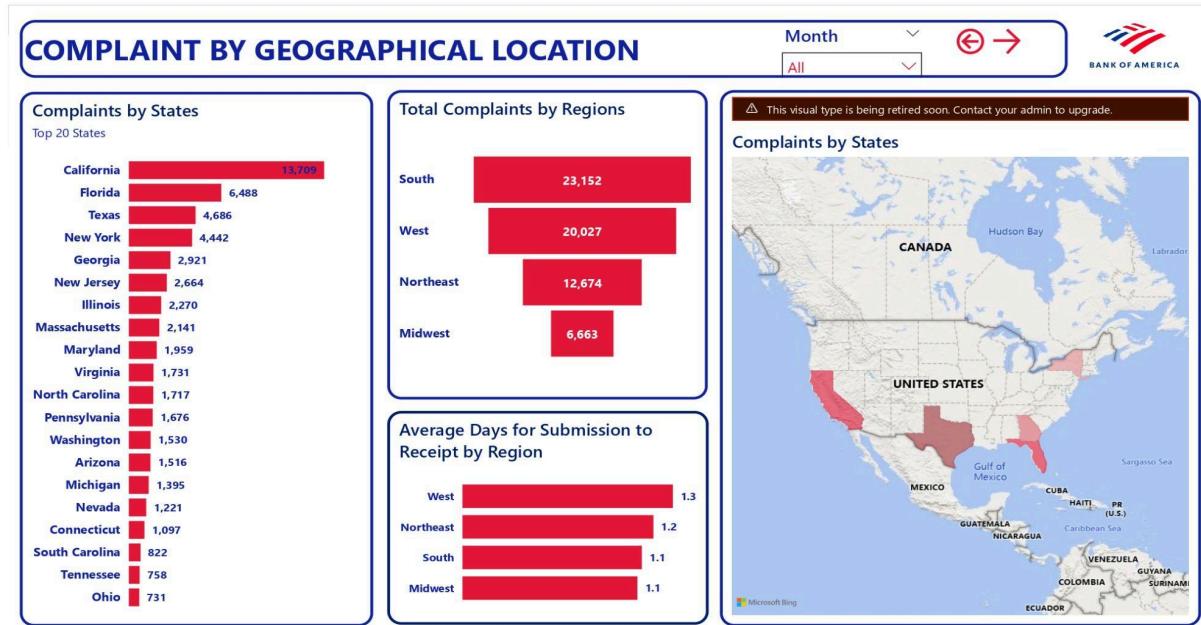These reflect underlying problems in account servicing, billing disputes, and data accuracy.

3. The South and West regions show the highest complaint concentration

California leads as the state with the highest complaint volume.

4. Web and Referral channels dominate complaint submission

Indicates a preference for self-service and digital engagement over phone or mail.

5. Strong satisfaction and closure performance

- **97.6%** of customers did not dispute the response.

- Most complaints were **closed with explanation**, showing effective resolution.

6. Timeliness of response varies across regions

Some regions take significantly longer to respond, indicating operational inefficiencies.

7. Complaint levels show a fluctuating trend from 2017 to 2023

YoY trends reveal spikes in certain years linked to economic and operational factors.

8. Forecast indicates continued increases in complaints through 2024–2025

If current patterns hold, complaint volume will show a gradual rise over the next two years.

✔ Recommendations

1. Prioritize improvement in top complaint productsFocus on:

- Savings Account servicing

- Credit Card dispute handling

- Credit Reporting accuracy

This will reduce overall complaint volumes significantly.

2. Address root causes of top issues

Establish targeted initiatives for:

- Billing system improvements

- Fraud detection enhancements

- Better account management support

- Customer data accuracy controls

3. Improve operational efficiency in slow-response regions

Standardize response protocols and allocate more back-office resources where needed.

4. Enhance digital self-service channels

Since customers prefer web submission:

- Improve complaint submission UI

- Add self-resolution tools

- Implement status notifications

- Provide real-time tracking

5. Strengthen monitoring and early-warning analytics

Use:

- Monthly trend monitoring

- Decomposition Tree for root cause identification

- Forecast KPIs to anticipate high-volume periods

6. Increase training for customer-facing and dispute-resolution teams

Particularly in product areas with high complaint volumes and recurrent issues.

7. Implement product-specific customer feedback loops

Collect feedback post-resolution to reduce repeat complaints and increase satisfaction.