

WEEK 3 REPORT (ANALYSIS & VISUALIZATION)



FINANCE INDUSTRY

1. Cover Details

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- Week 3 Report
- Date: 7th October, 2025.
- Tool Used: (Power BI)
- Number of Dashboard Pages Created: 2 Pages Dashboard

2. Executive Summary

During Week 2 of the STC Finance Industry project, the team conducted a Data Analysis and Visualization exercise using Microsoft Excel to explore the Bank of America Consumer Complaints dataset. The objective was to uncover insights that address key business questions, including identifying major problem areas, understanding the nature of customer complaints, assessing complaint resolution effectiveness, and evaluating response timeliness.

The analysis revealed a steady increase in customer complaints between 2020 and 2023, with the highest volumes recorded between May and August a period likely associated with heightened financial activity such as loan applications and credit card usage. Additionally, most complaints were submitted through the bank's website, reflecting a growing customer preference for digital channels when reporting issues.

Overall, the findings suggest that customers are becoming more proactive and aware of their rights, leading to greater engagement in reporting problems online. However, the continued rise in complaints highlights the need for improved service delivery, better issue resolution processes and enhanced customer satisfaction strategies within the bank's operations.

3. Business Questions Addressed

- Which products or services generate the highest volume of customer complaints, and how have these trends evolved over time?
- Which states or regions report the most complaints?
- Which complaint channels (web, phone, email, mail etc.) has the highest or lowest issues?
- Which of the channels are most effective at driving fast, positive resolutions?
- What issues occur the most?
- Are there specific geographic regions or customer segments with higher complaint volumes?

4. Method of Analysis

Where the biggest problems are (Which products have the most complaints)

- **Tool/Technique Used:** Power BI visualization using bar charts.

- **Logic Behind Approach:**
Aggregated the number of complaints by Product to identify which categories had the highest volume.
- **Challenges Encountered:**
Some product names were inconsistent or blank, requiring data cleaning to standardize categories before analysis.

What specific issues people are complaining about?

- **Tool/Technique Used:** Power BI.
- **Logic Behind Approach:**
Grouped complaints by Product Issue to see recurring themes. This helped identify root causes of dissatisfaction.
- **Challenges Encountered:** Some “Issue” fields were too detailed or duplicated under slightly different names; manual grouping and categorization were required.

3. How effectively they’re resolving these complaints

- **Tool/Technique Used:** Power BI Table Visualization using Company Response to Consumer field.
- **Logic Behind Approach:**
Counted complaints by Response Type (e.g., Closed with Explanation, Closed with Monetary Relief, In Progress) to assess resolution effectiveness.
- **Challenges Encountered:**
Some records lacked response status or used non-standard terms, making it necessary to filter or reclassify them to maintain accuracy.

4. If their responses are timely

- **Tool/Technique Used:**
Power BI Card and Table Visualization with DAX measure.
- **Logic Behind Approach:**
Computed the **% of Timely Responses** using the “Timely Response?” field — dividing timely responses by total complaints. Displayed this as a KPI (93.77%). Compared timeliness across products and channels to highlight areas needing improvement.
- **Challenges Encountered:** Some entries had missing or blank “Timely Response” values, which slightly affected percentage accuracy.

5. How to reduce complaints and improve service

- **Tool/Technique Used:**
Trend Analysis with Line Charts in Power BI (Complaints by Year/Month).
- **Logic Behind Approach:**

Observed complaint patterns across years (2017–2023) and months (May–August peaks) to identify periods with higher complaint activity. This insight supports proactive service strategies during peak months.

- **Challenges Encountered:**

Limited contextual data to pinpoint exact causes behind seasonal increases — required assumptions based on financial activity cycles.

5. Insights and Visualizations

Business Question: Where the biggest problems are (e.g., which products).

Insight: Products such as Checking and Savings accounts also had complaints, mainly about funds not received after account closure.

Charts Used: Bar Chart – Complaints by Product

Business Question: What specific issues people are complaining about.

Insight: Across all products, the most common issues were incorrect information on reports, difficulty closing accounts, and fees or interest disputes. Sub-issues such as identity theft, fraud related disputes, and data verification errors appeared regularly.

Charts Used: Matrix / Clustered Bar Chart – Complaints by Product and Issue

Business Question: How effectively they're resolving these complaints.

Insight: Most customers submitted their complaints via the web, followed by referrals and phone/mail. Web submissions were processed faster and had a higher rate of timely responses. Complaints submitted through referrals or mail took longer to resolve, showing delays in traditional or manual communication channels.

Charts Used: Stacked Bar Chart / Table – Company Response to Consumer

Business Question: If their responses are timely.

Insight: The bank achieved a 93.77% timely response rate, showing strong operational efficiency in handling complaints. However, some product areas such as Debt Collection and Credit Reporting had slightly lower response rates, highlighting opportunities for more consistent service delivery across all product lines.

Charts Used: Table / KPI Card – % of Timely Responses by Product and Channel

Business Question: How to reduce complaints and improve service.

Insight: Complaints have steadily increased between 2020 and 2023, with peaks from May to August, likely due to higher financial activity periods. This pattern suggests that customer service teams should reinforce support during peak months, enhance self-service platforms, and address recurring product-specific issues (especially in credit reporting) to reduce complaint volume and improve overall satisfaction.

Charts Used: Line Chart – Complaint Trend by Year and Month

6. Dashboard Summary

Based on the Bank of America Customer Complaints Visualization Report, we have a 2-page dashboard.

Dashboard Page 1: Overall Complaint Overview.

Key KPIs: Total Complaints: **62.5K**, Resolution Rate: **97.60%**, Timely Response Rate: **93.77%**.

Visuals: Complaints by Product, Complaint Trend by Year, Complaint by Channel, Top Complaint Issues.

Dashboard Page 2: Complaint Resolution and Timeliness Analysis

Visuals: Complaints by Region, Average Days for Submission, Complaints by States.