

**PROJECT REPORT
ON**

Credit Card Complaints Analysis

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Master in Computer Application

Submitted By:

MD SHAHBAZ ANSARI (UID: 23MCA20405)



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Submitted To:

Miss Amanjot Kaur (E13604)

Dr. Sanjay Kumar (E13150)

ABSTRACT

The "Credit Card Complaints Analysis" project is a data-driven approach aimed at understanding and categorizing consumer complaints related to credit card products. Using a comprehensive dataset that captures various aspects of consumer feedback, including complaint details, company responses, and timelines, this project aims to analyze trends, identify common issues, and evaluate the responsiveness of credit card companies.

The dataset includes critical fields such as the **Company** involved, **Public Response**, **Company Response to Consumer**, **Complaint Category**, **Complaint ID**, **Consumer Complaint Narrative**, and whether **Consumer Consent** was provided. Additionally, the data captures information on whether the complaint was disputed by the consumer, dates related to complaint reception and response, as well as key details about the **Dimension**, **Issue**, **Product**, **State**, **Sub-issue**, **Sub-product**, **Submitted Via** (channel), and the **Table Name** to which the complaint belongs.

The analysis leverages visualizations, including **donut charts** to show the proportion of issues by category and **timely response indicators** to highlight response efficiency across companies. The **Average Number of Days** taken by companies to respond to complaints provides an important metric for assessing service quality and helps in identifying companies with significant delays in addressing consumer issues. Additional fields like **ZIP Code**, **Number of Records**, and **Tags** (highlighting specific complaint characteristics) further enhance the depth of the analysis, enabling geo-specific and demographic insights.

By transforming this data into interactive dashboards using Tableau, the project offers a user-friendly tool that allows stakeholders to filter complaints by company, product, issue type, and region. These insights help financial institutions, regulators, and consumer advocates better understand the landscape of credit card-related complaints, address recurring issues, and foster improvements in customer service. Moreover, the visualization of complaint patterns over time aids in identifying emerging issues in the credit card industry and contributes to fraud detection by spotlighting anomalies in consumer feedback.

In summary, the Credit Card Complaints Analysis project serves as a valuable resource for both industry professionals and consumers, helping to improve transparency, enhance customer service, and build trust within the financial sector.

Chapter-1

INTRODUCTION

In the evolving landscape of financial services, credit card usage has become ubiquitous, enabling consumers to make purchases, manage cash flow, and access a range of benefits. However, the rapid growth in credit card adoption has also led to an increase in consumer grievances. Issues such as billing disputes, unauthorized transactions, poor customer service, and delayed responses from credit card companies have become common sources of frustration for users. Addressing these complaints efficiently is critical for maintaining customer trust and satisfaction, as well as for regulatory compliance.

The "Credit Card Complaints Analysis" project aims to provide an in-depth examination of consumer complaints related to credit card products. This project leverages a detailed dataset that includes information on various aspects of each complaint, such as the company involved, the nature of the complaint, the consumer's narrative, the company's response, and the timeline for resolving the issue. This dataset serves as a foundation for analyzing complaint patterns, categorizing issues, and assessing the responsiveness of credit card providers.

The fields within the dataset cover a wide array of information, including the **Complaint ID** to uniquely identify each complaint, **Company** (the credit card provider or financial institution), **Public Response** (how the company publicly addressed the issue), and **Complaint Category** to classify complaints into specific areas such as billing, fraud, or service issues. Fields like **Consumer Complaint Narrative** offer qualitative insights into the consumer's experience, while **Consumer Consent Provided?** indicates whether consumers agreed to share their feedback publicly. Furthermore, the dataset includes **Date Received** and **Date Sent to Company** fields, allowing an assessment of the company's response time.

Additional fields such as **Dimension**, **Product**, **State**, and **ZIP Code** provide granular details that enable location-based analysis and identification of region-specific trends. The **Submitted Via** field captures the medium through which complaints were submitted, such as online, phone, or mail, while **Tags** highlight key attributes of the complaint, like allegations of fraud or urgent concerns.

One of the main objectives of this project is to utilize **Tableau** for visualizing this dataset, presenting findings in an intuitive and accessible way. and assess the promptness of companies in addressing consumer grievances. By analyzing **Average Number of Days** taken for response, the project highlights the efficiency (or lack thereof) in complaint resolution among various companies, thereby helping stakeholders pinpoint areas requiring improvement.

This project not only serves as a tool for companies to enhance their customer service but also provides valuable insights for regulatory bodies, allowing them to oversee industry standards and ensure that companies meet required consumer protection norms. Ultimately, by addressing and reducing complaint backlogs and response delays, credit card companies can improve their reputation and foster trust within their consumer base. The **Credit Card Complaints Analysis** project contributes towards this goal, offering a comprehensive overview of the credit card complaint ecosystem and promoting a more transparent, consumer-friendly financial environment.

Chapter-2

Project Scope Planning for Sharekitt Application

1. Project Objective

The objective of the *Credit Card Complaints Analysis* project is to conduct a comprehensive examination of consumer complaints related to credit card services, with the aim of identifying patterns, trends, and areas for improvement within the industry. By analyzing a structured dataset of complaint records, this project seeks to:

1. **Categorize Complaints by Issue Type:** Identify common complaint categories such as billing errors, fraud, poor customer service, and unauthorized charges. This helps to highlight frequently occurring issues and prioritize areas for improvement.
2. **Assess Company Responsiveness:** Analyze how promptly different companies respond to complaints by measuring the time taken from complaint receipt to resolution. This includes calculating the average number of days taken by each company to address complaints and identifying companies with consistently slow responses.
3. **Understand Consumer Experiences:** Evaluate qualitative data provided in consumer complaint narratives to gain insights into specific issues faced by consumers and their experiences with credit card companies. This helps in understanding the depth of dissatisfaction or the specific nature of grievances reported.
4. **Evaluate Public and Company Responses:** Compare the companies' responses to the complaints, both privately and publicly, to determine how effectively companies are addressing customer issues and to assess transparency in resolving complaints.
5. **Identify Regional Trends:** Analyze geographic data such as state and ZIP code information to detect any regional variations in complaint frequency or type. This can help pinpoint location-specific issues or trends, which may be influenced by local regulations or regional market practices.

2. In-Scope Features

The *Credit Card Complaints Analysis* project includes a range of key features designed to analyze and visualize consumer complaint data, providing valuable insights into the credit card industry's customer service standards. The following features are in scope for this project:

I. Complaint Categorization and Analysis

- Classify consumer complaints by category, such as billing disputes, fraudulent charges, poor customer service, etc.
- Segment complaints based on issue types and sub-issues, helping to reveal the most frequent and severe types of complaints faced by consumers.

II. Timely Response Evaluation

- Calculate the average number of days taken by each company to respond to complaints.

- Identify companies that respond within a satisfactory time frame versus those with delayed responses.
- Visualize response times for easy comparison, aiding companies in benchmarking their performance against industry standards.

III. Geographic Analysis

- Utilize state and ZIP code data to map the geographic distribution of complaints.
- Identify regions with higher complaint volumes or specific types of issues.
- Analyze potential correlations between location and complaint type, enabling location-based insights for credit card companies and regulatory bodies.

IV. Consumer Sentiment Analysis

- Examine consumer complaint narratives to capture the sentiment and intensity of dissatisfaction.
- Provide insights into common phrases or keywords associated with specific complaint types, helping companies understand customer experiences and frustrations.

V. Company Response Quality

- Assess the quality and nature of responses provided by companies to consumer complaints.
- Compare responses marked as "Timely" or "Disputed" to evaluate companies' transparency and effectiveness in addressing issues.
- Track public responses versus private resolutions to understand customer perception and the effectiveness of public-facing communication.

3. Out-of-Scope Features

While the primary focus of this Tableau project is to analyze credit card transactions, several potential features were identified but ultimately deemed out of scope for this phase. These features include:

- I. **Real-Time Transaction Monitoring:** The capability to monitor credit card transactions in real-time to detect fraudulent activities or unauthorized usage was considered. However, this feature requires integration with payment processing systems and advanced security measures, which is outside the current scope.
- II. **Predictive Analytics:** Implementing predictive modeling to forecast credit card usage trends or potential defaults based on historical data was discussed. However, developing such models would necessitate extensive data analysis and machine learning techniques, which were not included in this project.

6. Constraints

During the analysis of the credit card complaints data, several constraints were identified that may impact the findings and conclusions of the project:

1. **Data Quality:** The reliability of the analysis is contingent upon the quality of the input data.

Inaccuracies, missing values, and inconsistencies within the dataset can lead to misleading insights and affect decision-making.

2. **Limited Data Scope:** The dataset may not encompass all relevant complaints or may be biased towards specific demographics or geographic areas. This limitation could result in an incomplete understanding of consumer sentiments and issues.
3. **Timeframe Constraints:** The analysis is based on a specific timeframe. Trends and patterns observed in the data may not represent long-term behaviors, particularly if external factors (e.g., economic changes or regulatory updates) have influenced consumer behavior during that period.
4. **Categorization of Complaints:** The classification of complaints into categories and sub-categories may vary based on interpretation. This subjective categorization can introduce variability in the analysis and comparisons across different complaint types.
5. **Consumer Consent Variability:** The data includes a variable indicating whether consumer consent was provided. This may affect the comprehensiveness of the dataset and the ability to include all relevant complaints in the analysis, particularly when consent is not obtained.

Chapter-3

TECHNIAL PERFORMANCE

1. Security

Ensuring data security is paramount in handling sensitive information such as credit card complaints. Key measures implemented include:

- **Data Encryption:** Sensitive data is encrypted both in transit and at rest to protect against unauthorized access.
- **Access Control:** Role-based access controls are established, ensuring that only authorized personnel can access and manipulate the data.
- **Regular Audits:** Routine security audits and vulnerability assessments are conducted to identify and mitigate potential risks.
- **Compliance with Regulations:** Adherence to relevant regulations such as PCI DSS (Payment Card Industry Data Security Standard) ensures that all necessary security measures are in place.

2. Scope

The scope of the project defines the boundaries of the analysis and the features included. Key points include:

- **Analysis Focus:** The primary focus is on analyzing consumer complaints related to credit cards, including response times, complaint categories, and consumer satisfaction.
- **Exclusions:** Features such as real-time monitoring and predictive analytics were excluded to

maintain a manageable scope within the project timeline.

- **Data Sources:** The analysis is based on a specific dataset, which may limit the breadth of insights that can be derived from the project.

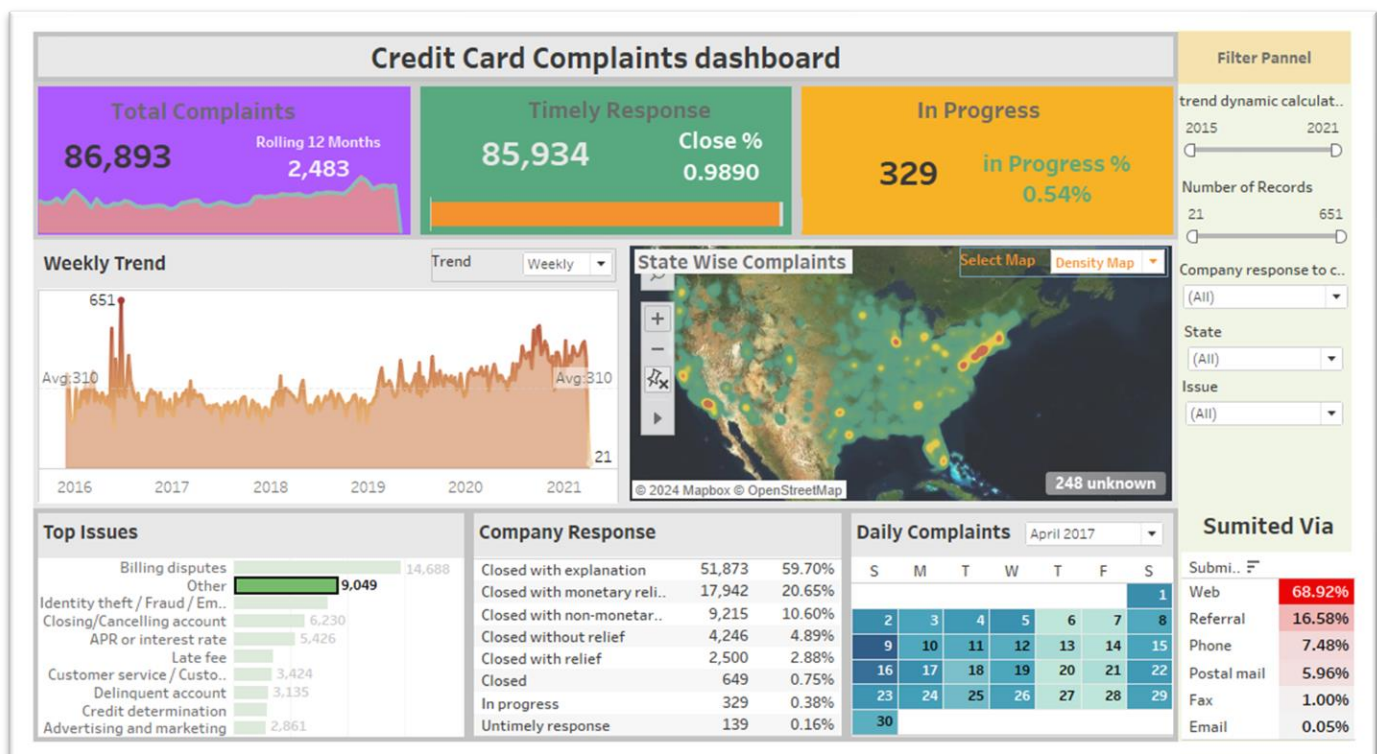
3. Technology Used

The following technologies were utilized to conduct the analysis and generate insights:

- **Tableau:** The primary tool for data visualization and analysis, allowing for the creation of interactive dashboards and reports.
- **SQL:** Used for querying and managing the underlying data, enabling efficient extraction and transformation of complaint records.
- **Excel:** Employed for initial data cleaning and manipulation before importing the data into Tableau.
- **Python/R:** (if applicable) Used for advanced data analysis techniques or preprocessing, enhancing the capability to handle complex datasets and perform statistical analysis.

Chapter-4

I. Dashboard



Steps to Manipulate Credit Card Data

1. Connect to Data Source:

- Import your dataset (e.g., a CSV or Excel file containing credit card complaint data) into Tableau.

2. Data Cleaning:

- Use Tableau's Data Interpreter to clean the data if necessary.
- Remove unnecessary columns or rows directly within Tableau.

3. Create Calculated Fields: You can create calculated fields to derive new metrics from your existing data. Here are some examples:

4. Create Groups:

- You can group certain fields for easier analysis. For instance, if you want to group complaints by state:
- Right-click on the [State] dimension and select **Create > Group** to create a group of states.

5. Building Visualizations:

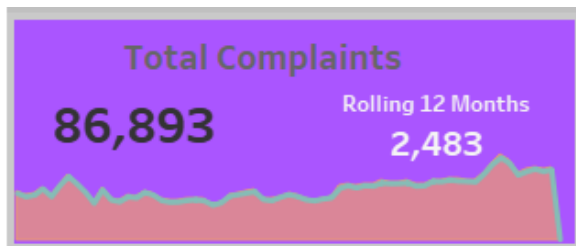
- Drag the calculated fields and other dimensions into the Rows and Columns shelves to create visualizations.
- Use the **Show Me** feature to suggest different chart types based on the data you select.

6. Dashboard Creation:

- Combine different visualizations into a dashboard to provide a comprehensive overview of the data.

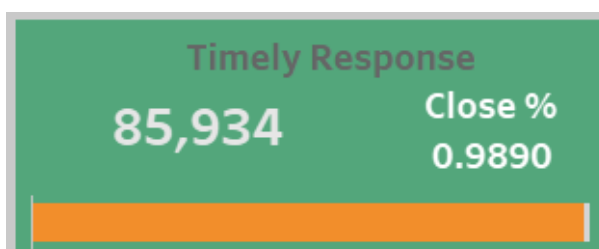
II. Total Number Of records

DATEDIFF('day', [Date received], [Date sent to company])



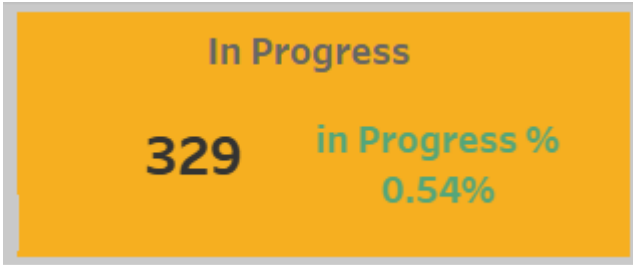
III. Total Timely responses

IF [Consumer disputed?] = 'Yes' THEN 'Disputed' ELSE 'Resolved' END

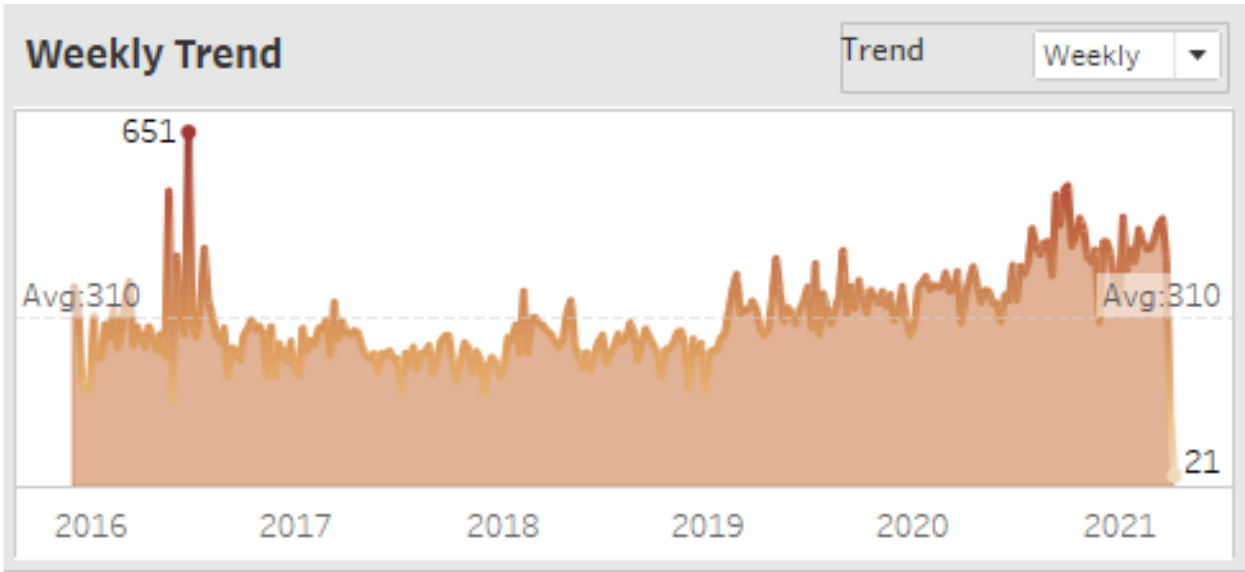


IV. Total Timely responses

IF [Timely response?] = 'Yes' THEN 1 ELSE 0 END
COUNTD([Complaint Category])



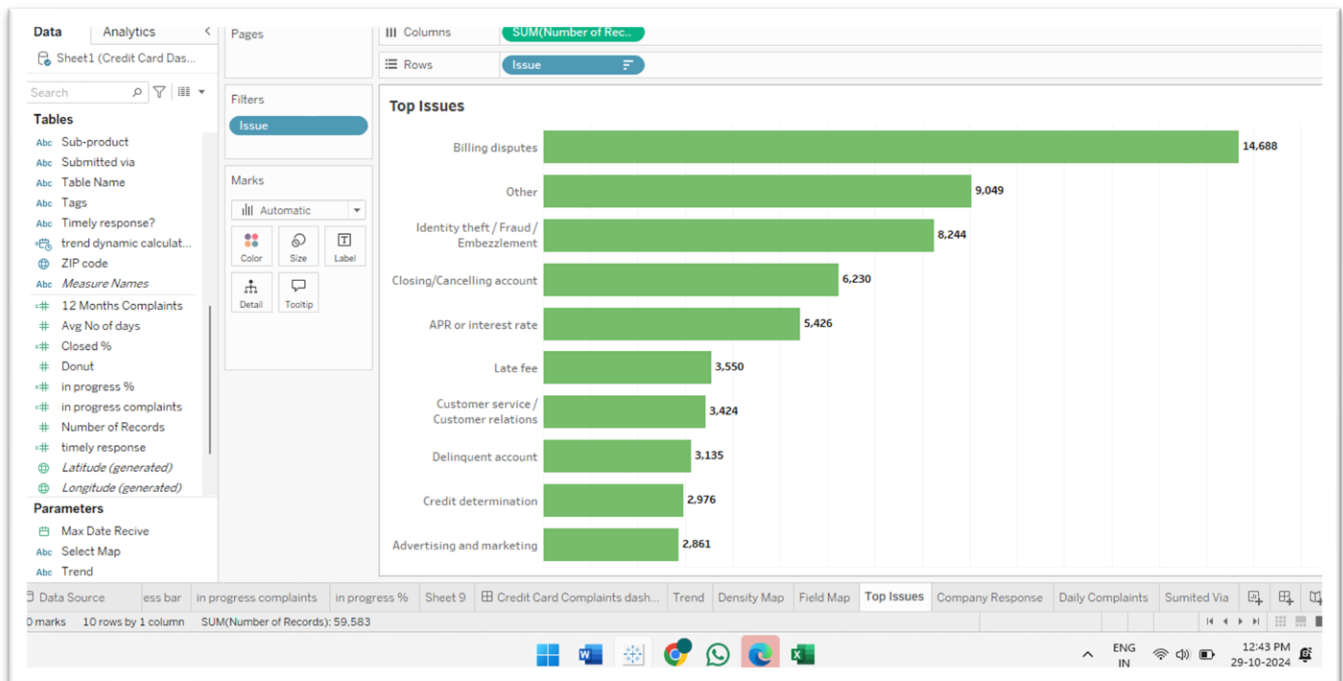
V. Weekly Trend Reports



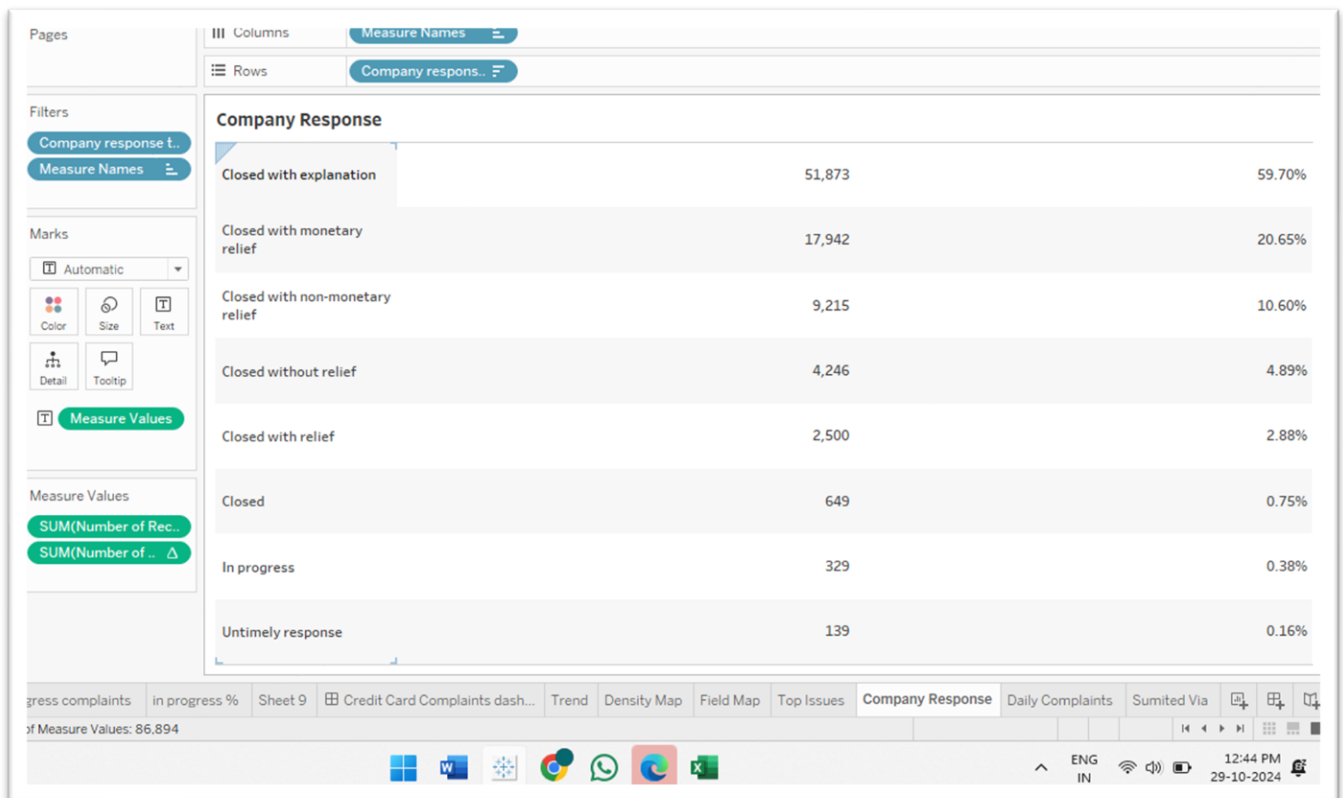
VI. State Wise Complaints



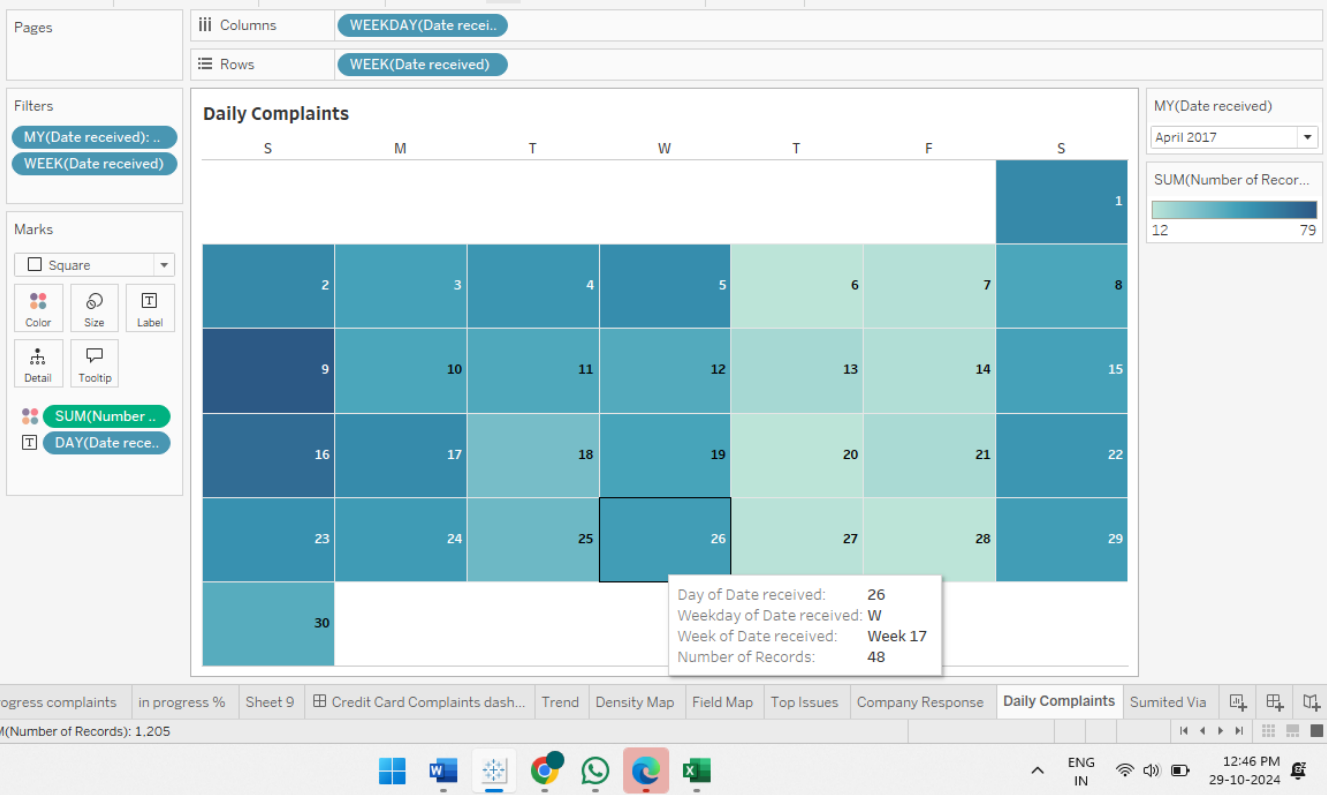
VII. Top Issues



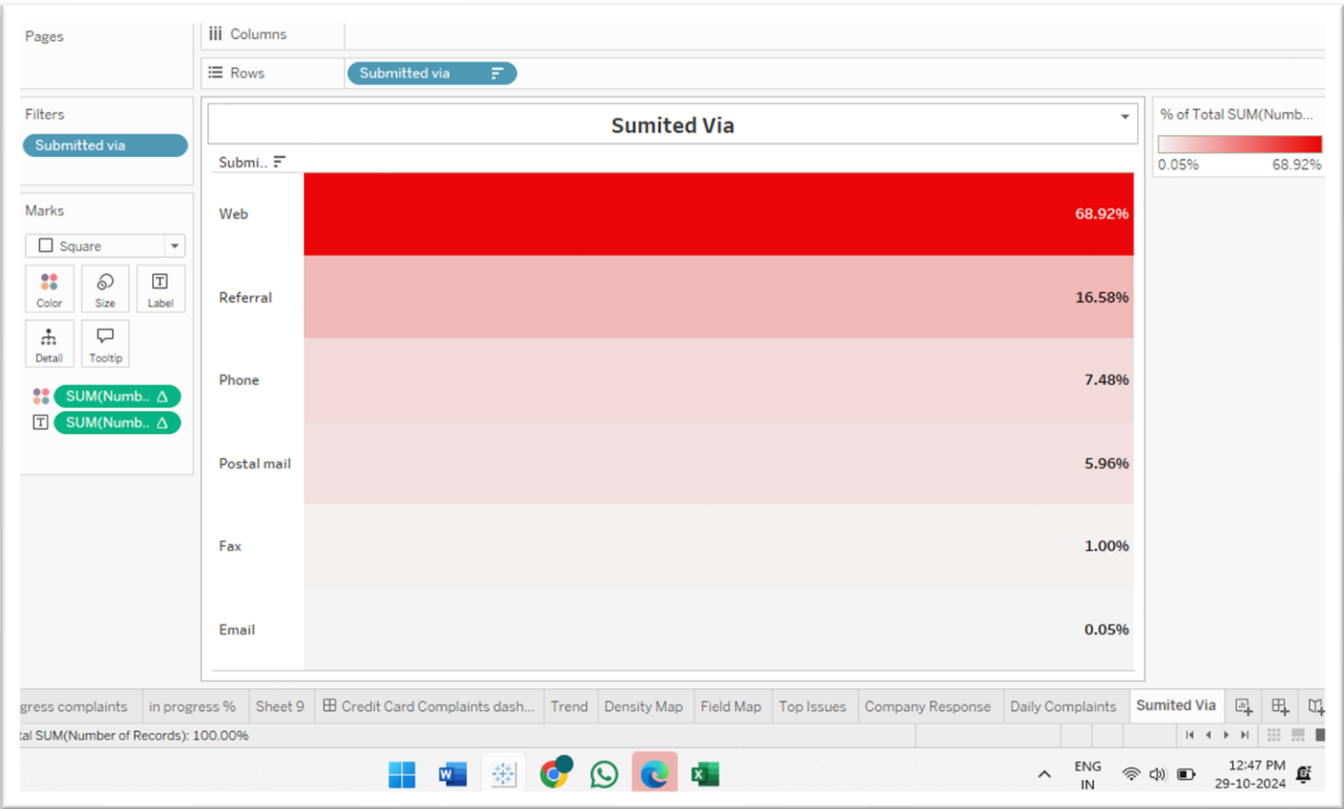
VIII. Company response



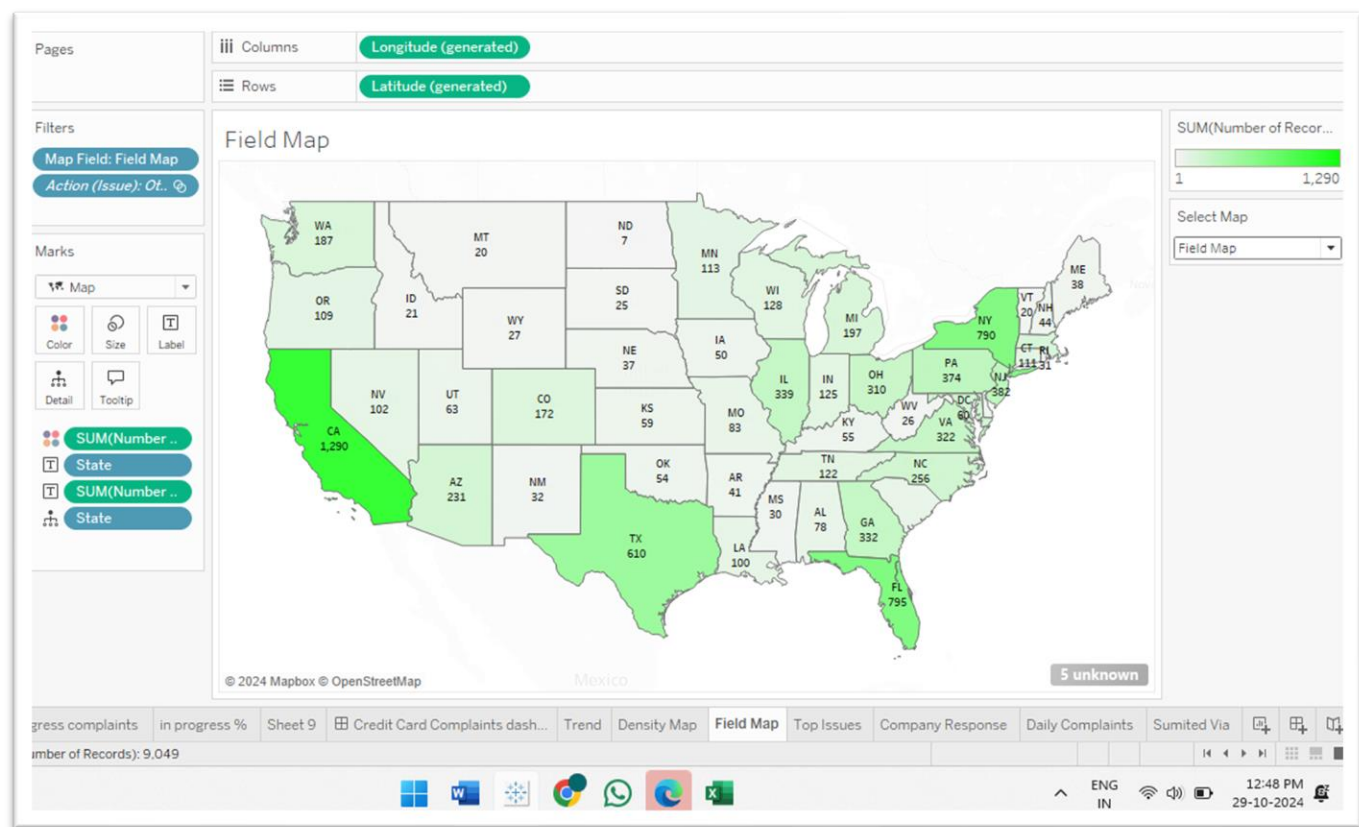
IX. Daily Complaints



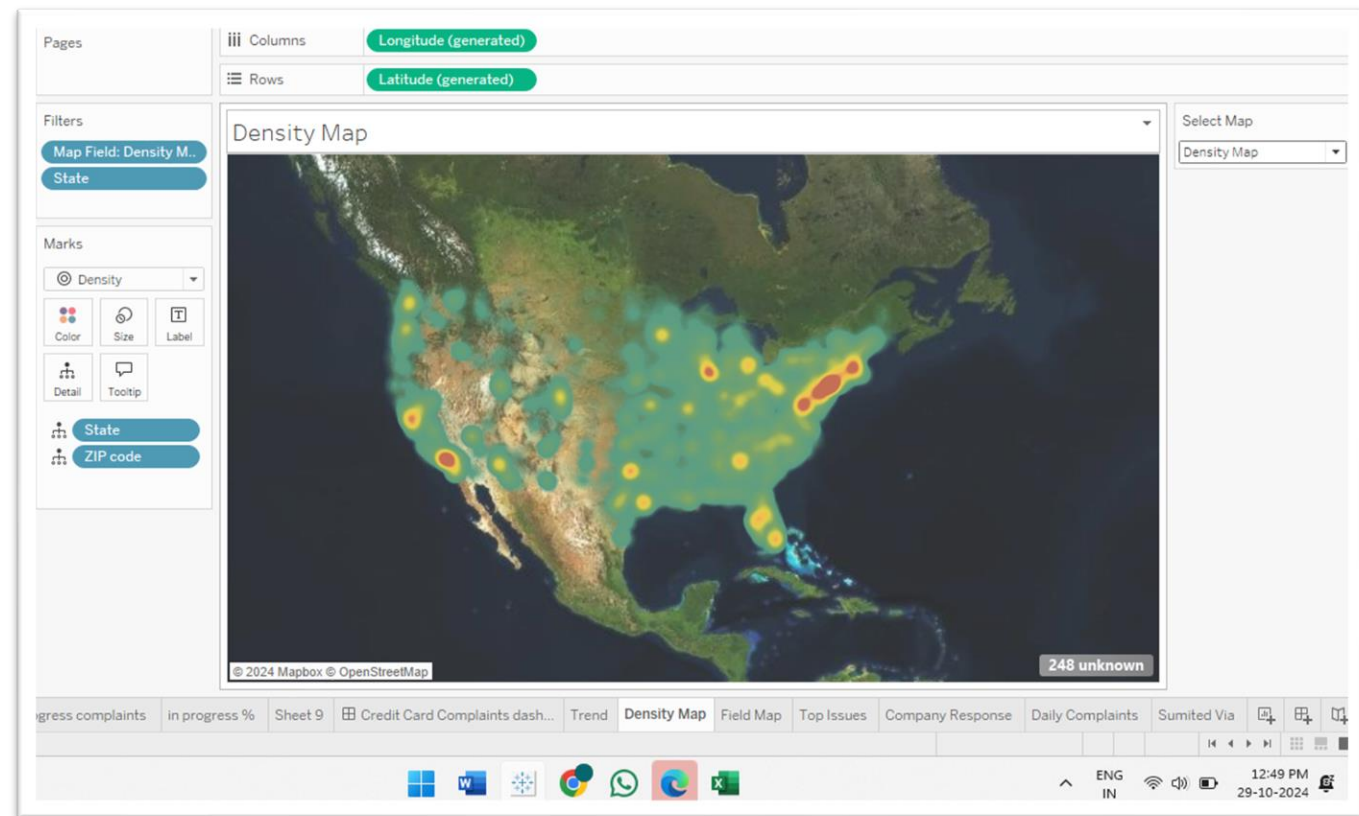
X. Sum Via Records



XI. Field Map



XII. Density of Records



Chapter-5

Project Overview

Project Title: Credit Card Complaints Analysis

Objective:

The primary objective of this project is to analyze consumer complaints related to credit card transactions using Tableau. The analysis aims to uncover trends, patterns, and insights that can inform decision-making for improving customer service, enhancing complaint resolution processes, and identifying potential areas for product improvement.

Scope:

The project focuses on the following key areas:

- Analyzing complaint categories and sub-categories to understand the most common issues faced by consumers.
- Evaluating response times from companies to assess the efficiency of complaint handling.
- Investigating consumer sentiment based on whether complaints were disputed or resolved.
- Providing actionable insights through visualizations to facilitate data-driven decision-making.

Data Source:

The analysis is based on a dataset containing detailed records of consumer complaints related to credit cards. Key fields in the dataset include:

- Company Name
- Complaint ID
- Complaint Category
- Consumer Complaint Narrative
- Dates of Complaint Receipt and Response
- Consumer Dispute Status
- State and ZIP Code

Methodology:

The project follows a structured approach:

1. **Data Import and Cleaning:** Importing the dataset into Tableau, cleaning and transforming the data as necessary to ensure accuracy and consistency.
2. **Data Manipulation:** Creating calculated fields and groups to derive meaningful metrics from the data, such as average response time and complaint status.
3. **Data Visualization:** Developing interactive dashboards and visualizations to represent the data visually, making it easier to identify trends and patterns.

4. Insights and Recommendations: Analyzing the visualizations to generate insights and actionable recommendations for improving credit card services and complaint handling.

Expected Outcomes:

- A comprehensive understanding of consumer complaints related to credit cards, including common issues and trends over time.
- Identification of areas for improvement in complaint resolution processes based on response times and dispute rates.
- Enhanced ability for stakeholders to visualize and interpret data, leading to informed decision-making and strategy development.

Tools and Technologies Used:

- Tableau: For data visualization and analysis.
- SQL: For data querying and management.
- Excel: For initial data cleaning and manipulation.

Timeline:

The project is expected to be completed within [6 Week], allowing for data analysis, visualization creation, and final reporting.

Signature...
Md Shahbaz Ansari