Credit Card Fraud Detection Analysis

AGENDA

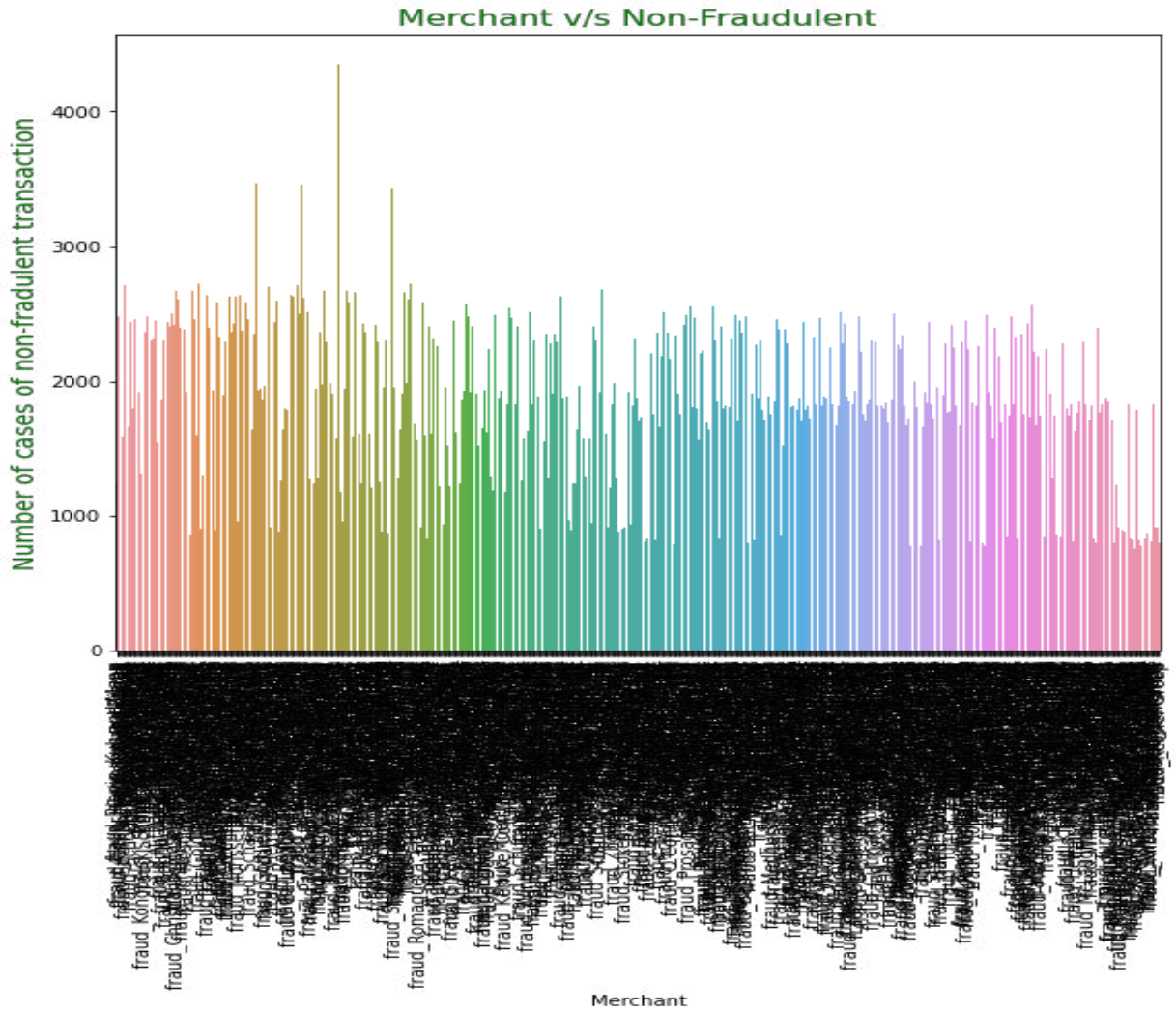
- Objective
- Background
- Key Findings
- Recommendation
- Appendix:
  - Data Sources
  - Data Methodology

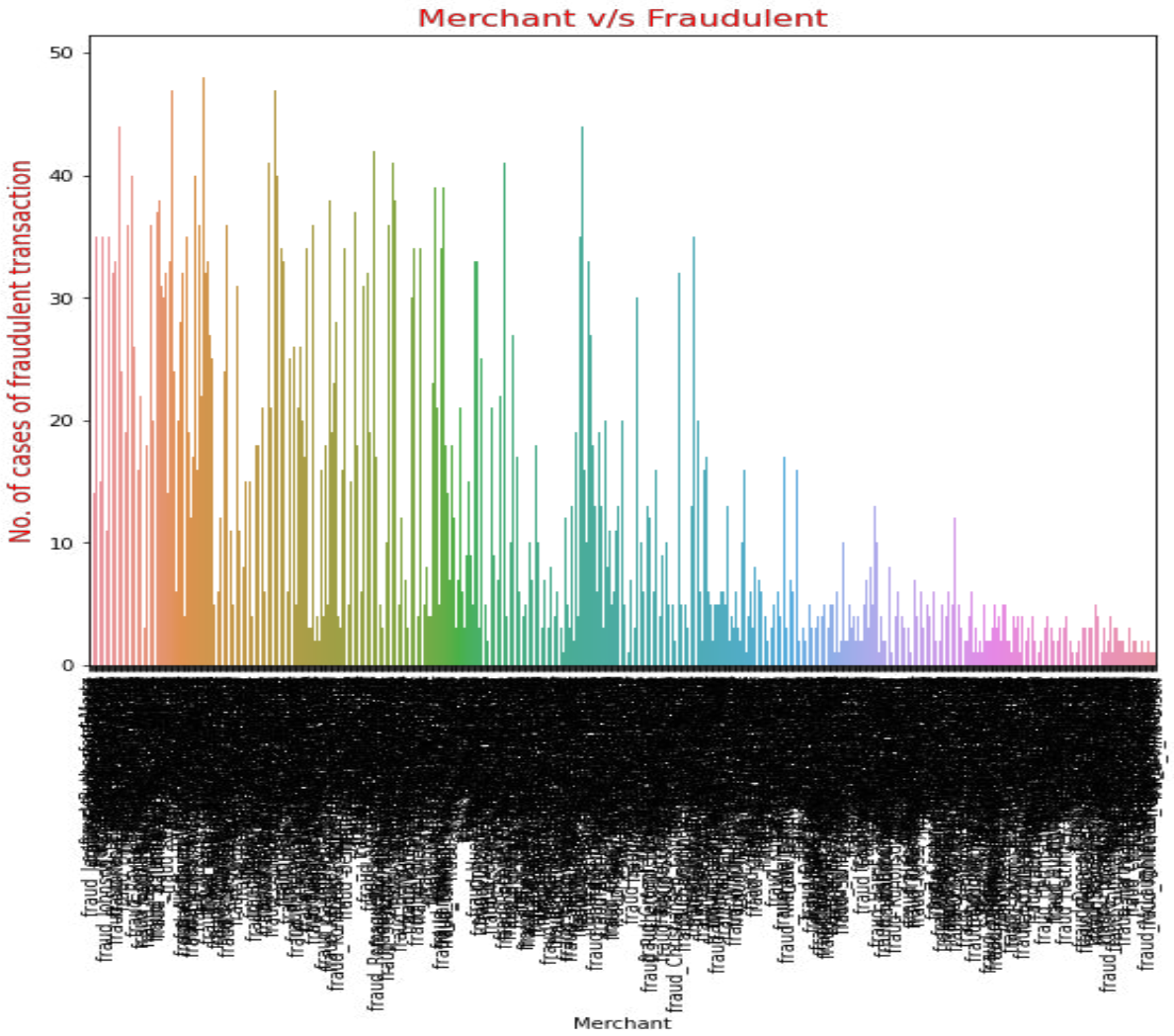
OBJECTIVE

- To understand the Credit Card Transactions from the deep level.
- Find some interesting pattern and insights from the analysis.
- Provide recommendations to the financial service provider (Finex).

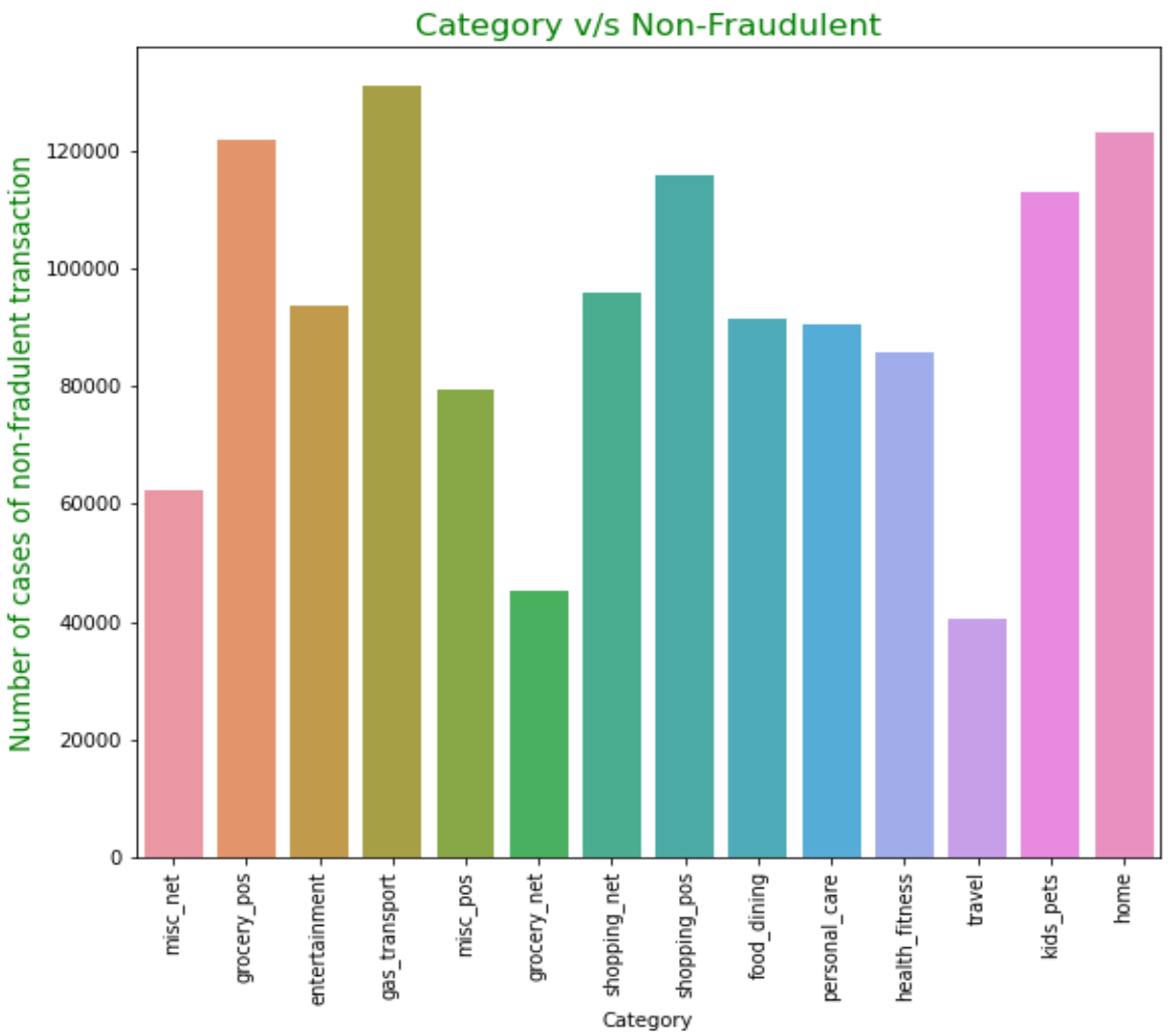
BACKGROUND

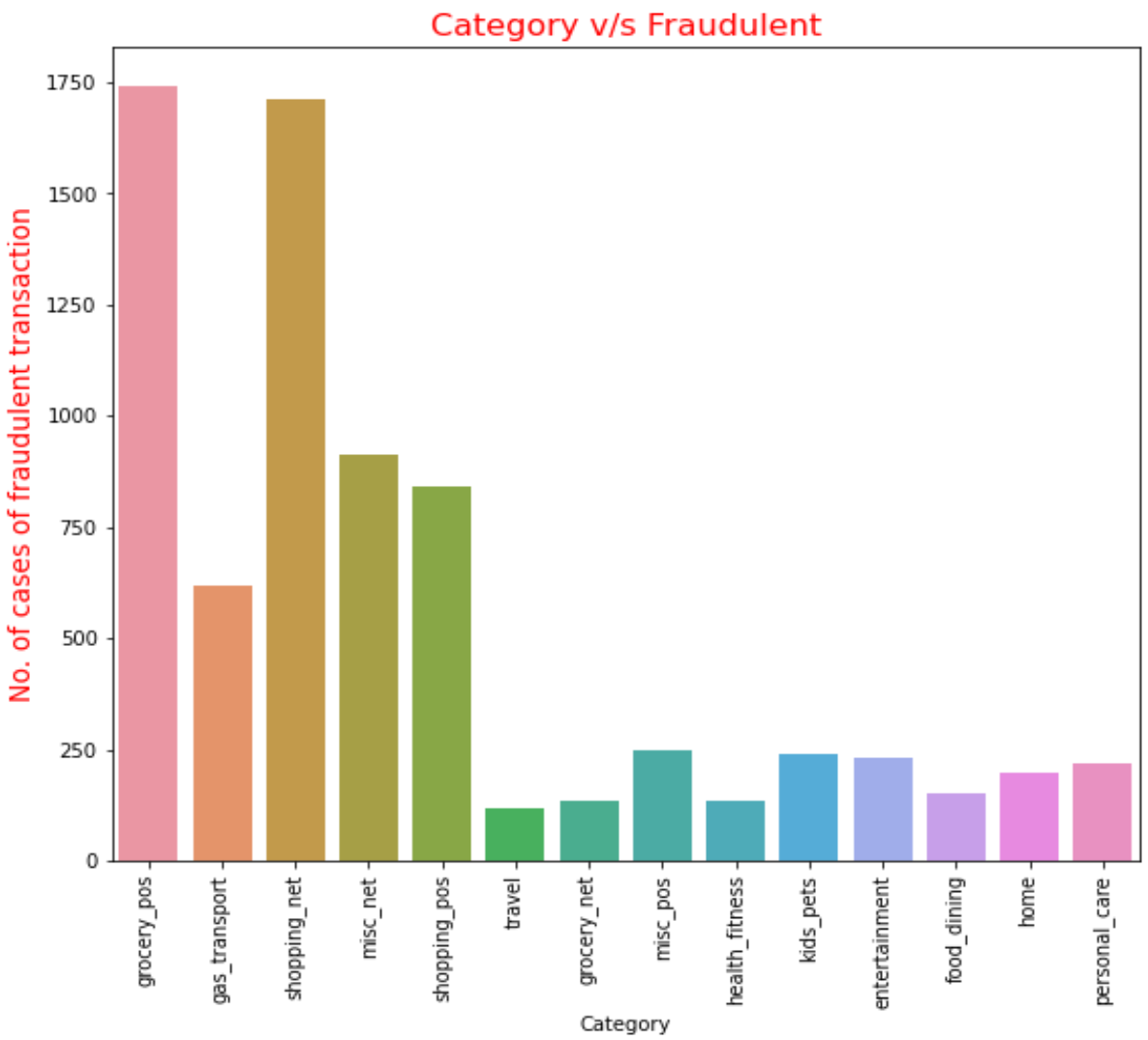
- Around **10 million** people becomes victims of **credit card theft** each year according to Federal Trade Commission.
- Credit Card Company lose close to **$50 billion** per year due to fraudulent activity.
- Finex has observed large number of unauthorised transactions being made due to which bank facing a huge revenue and profitability crises.



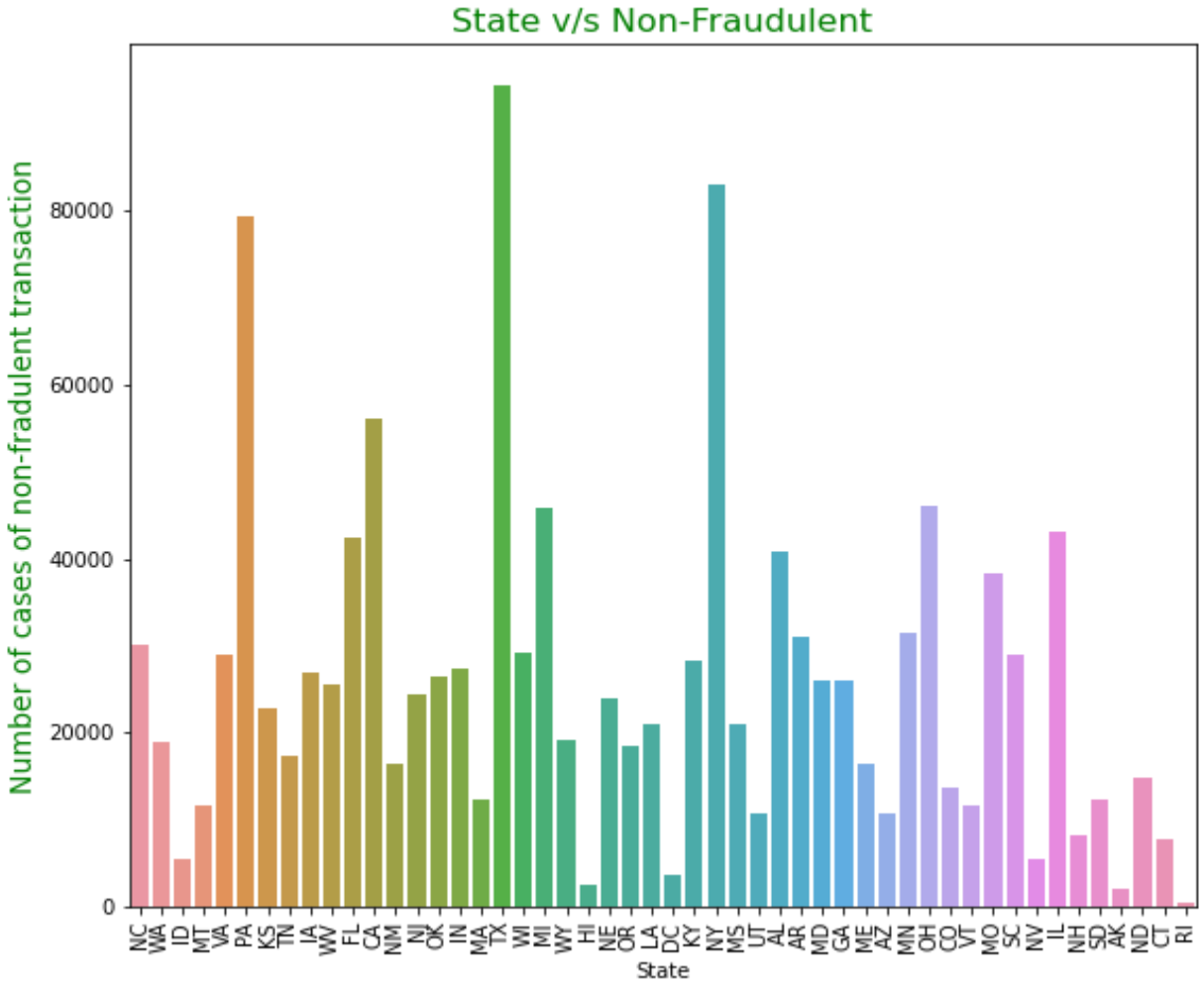


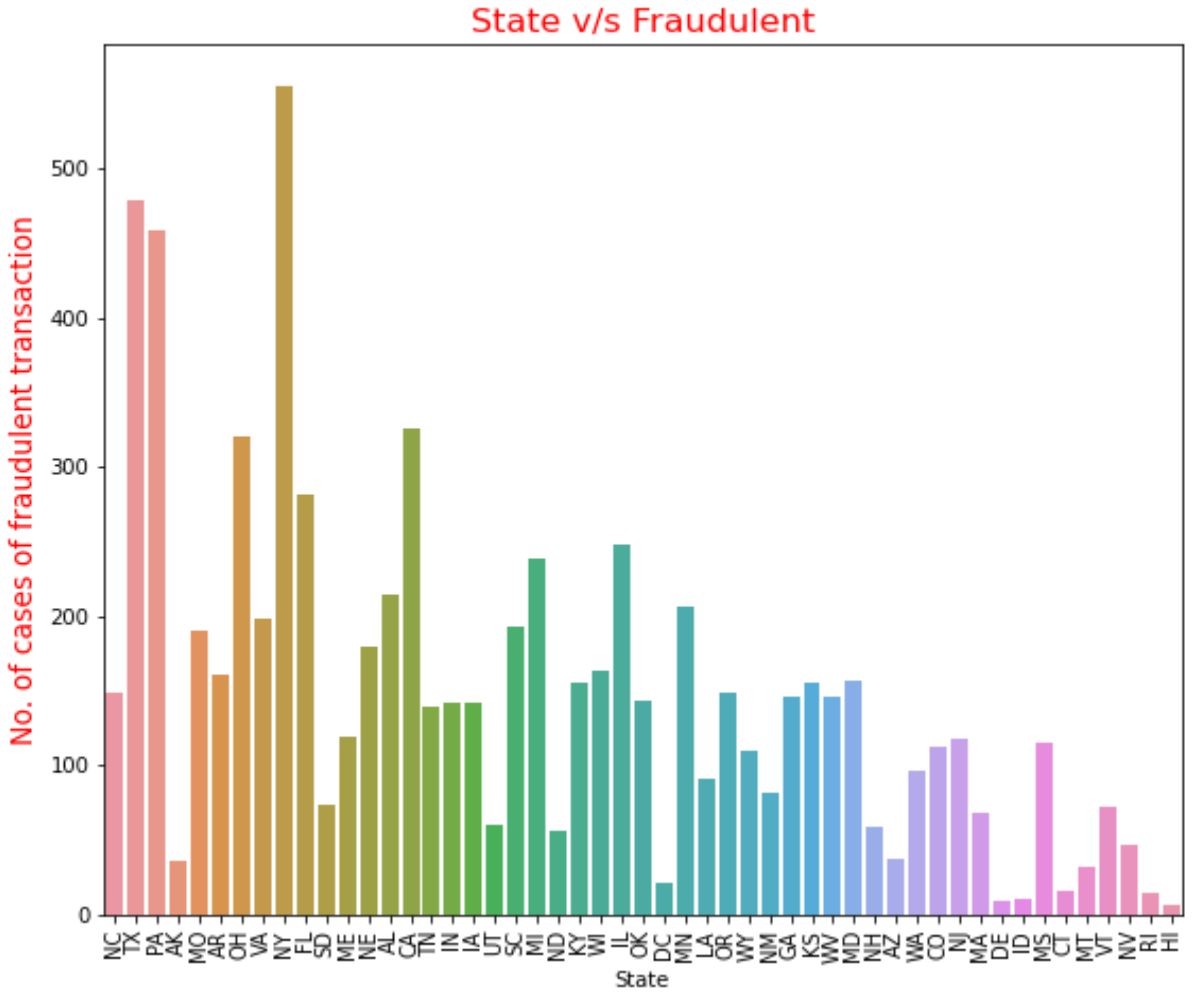
- There are some **merchants** which has a **very high counts** in terms of fraudulent transactions activities.
- Chances are very high that these **merchants** are **involved** in the fraudulent activities.
- As we can see in the fraudulent charts.



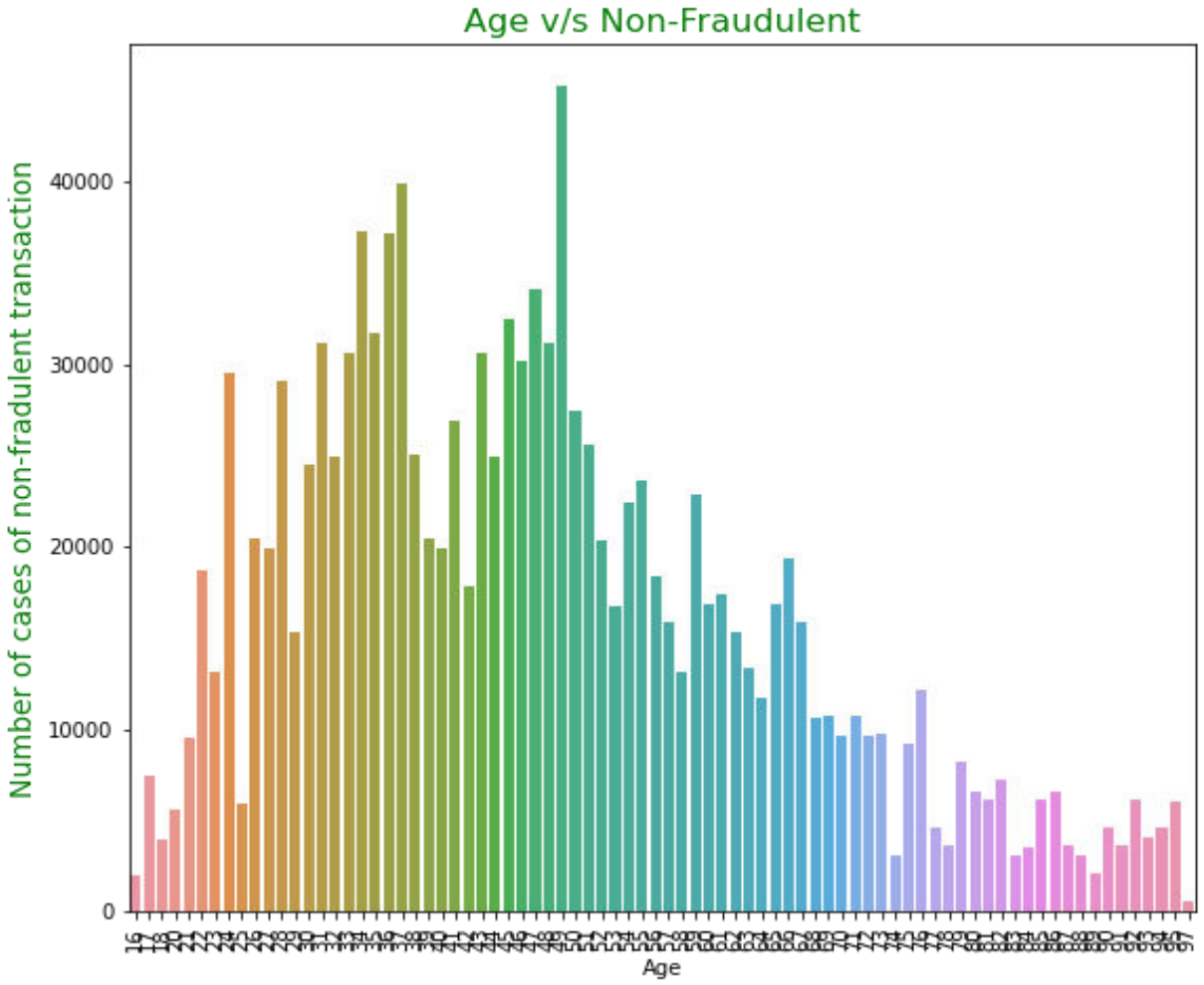


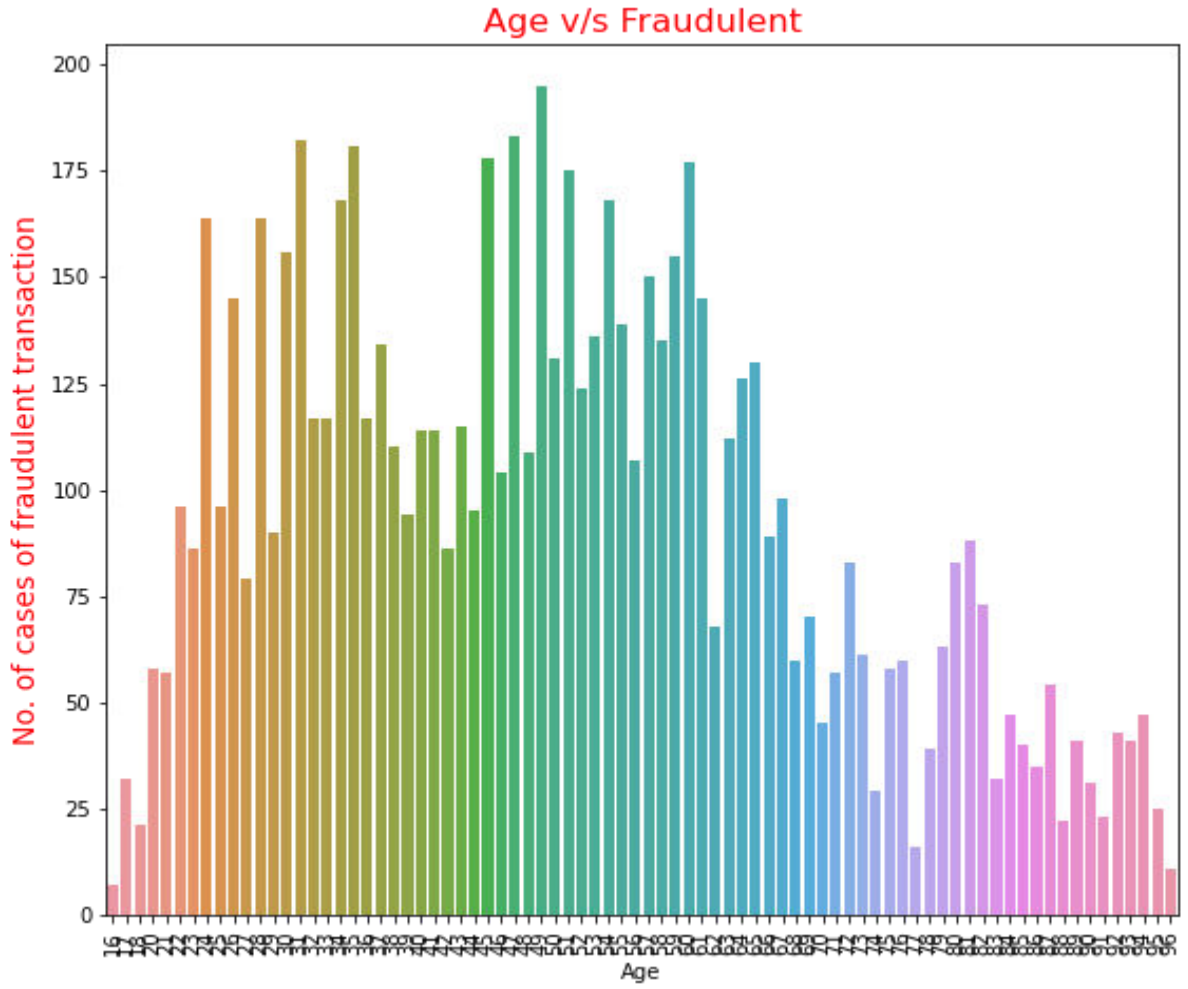
- **Grocery_pos**, **Shopping_net**, **Shopping_pos** and **Gas_transport** are some of the categories where fraudulent transaction happened at a large quantity.



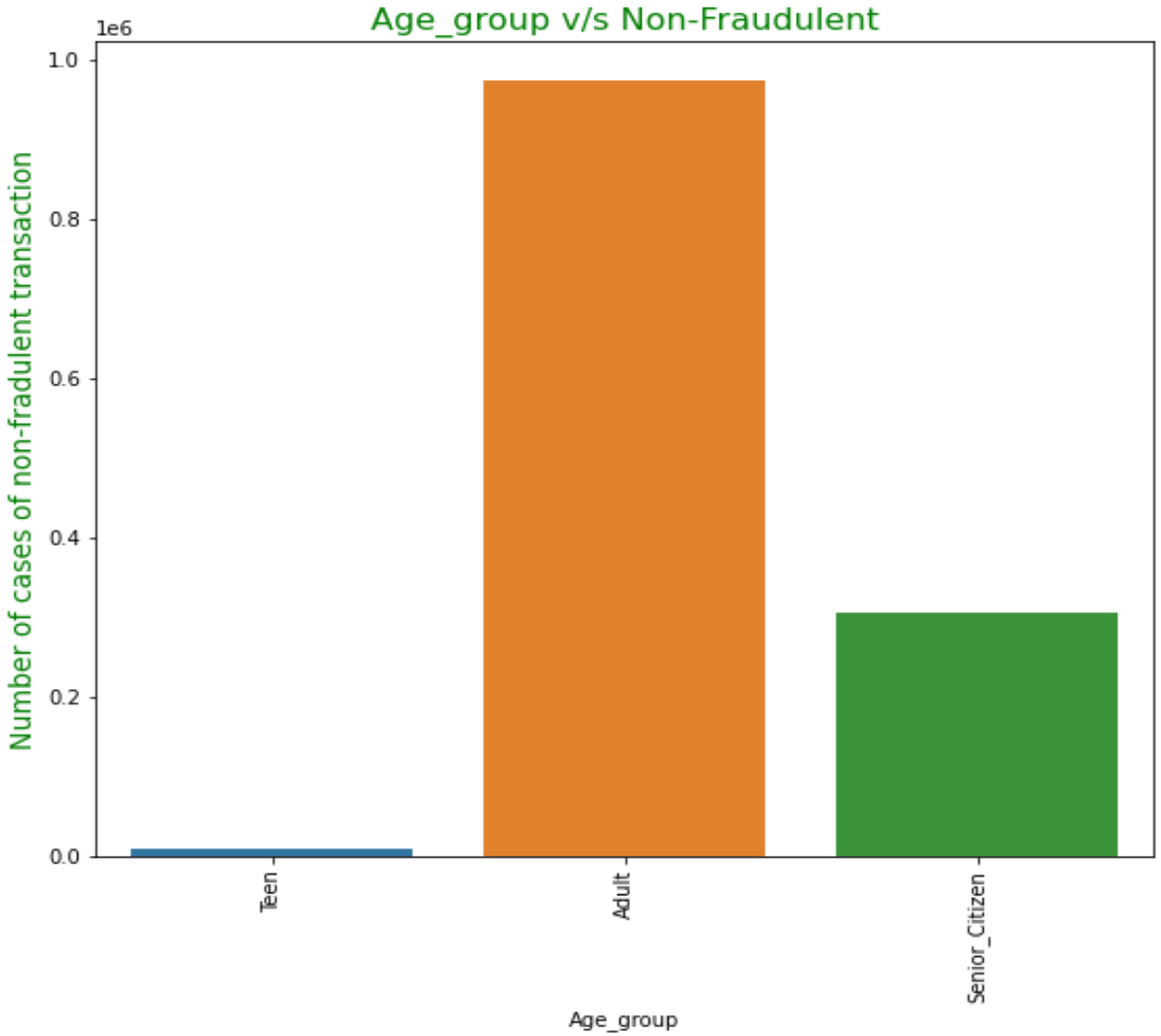


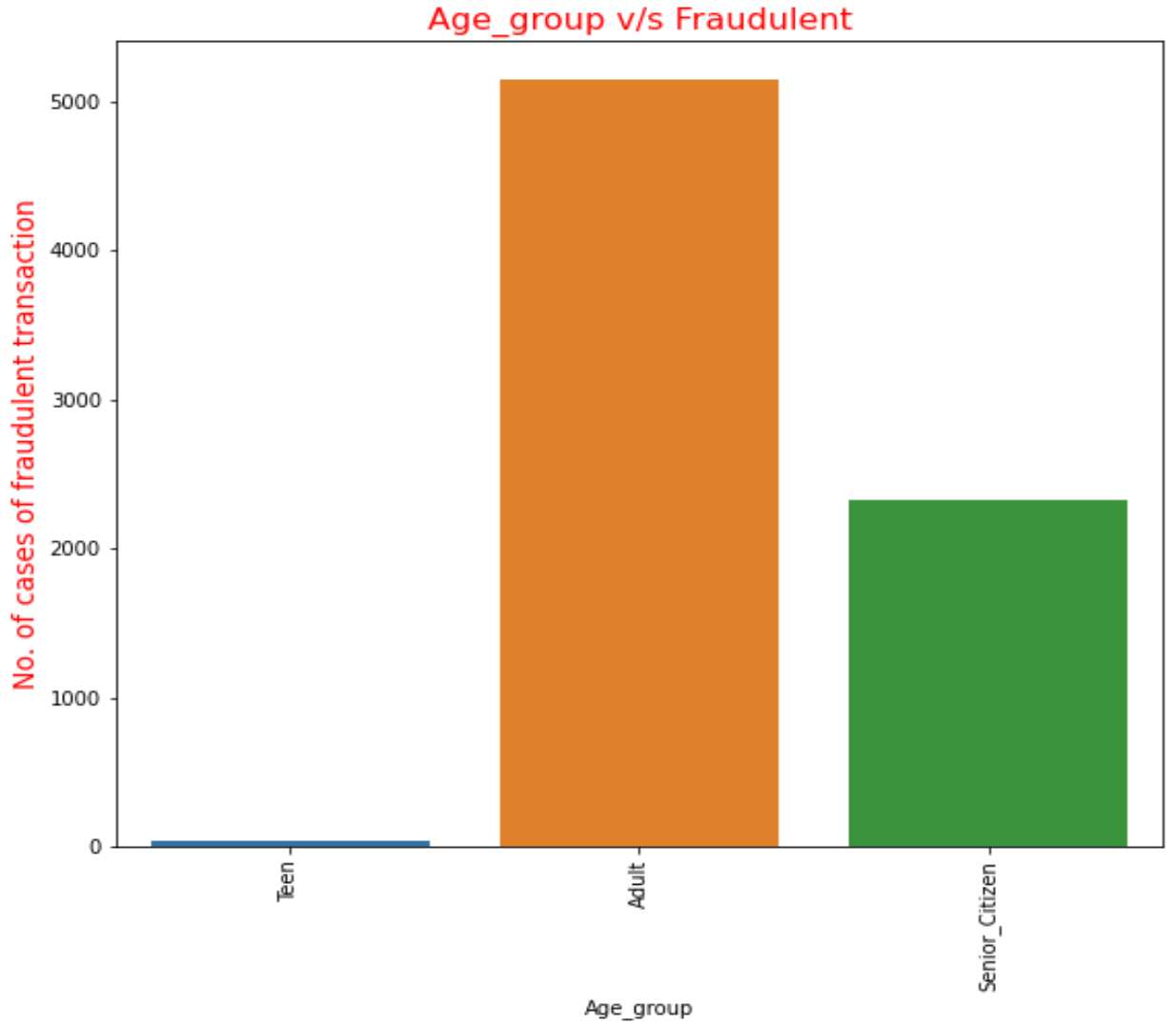
- **NY**, **TX** and **PA** are some of the state where fraudulent transactions happens at large quantity.
- There are some other states also where number of fraudulent transactions are more than the non-fraudulent one.
- We have to focus on these states also.



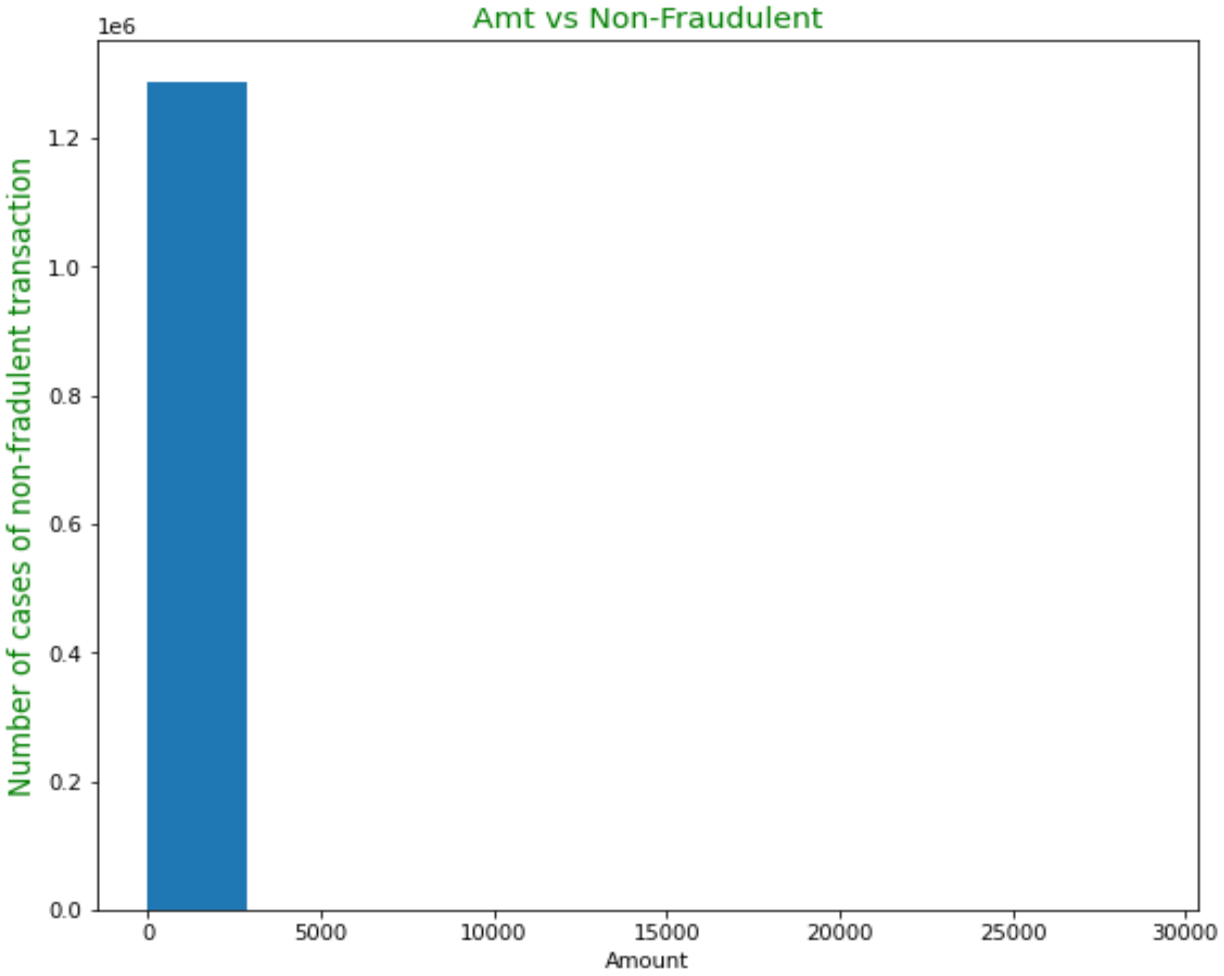


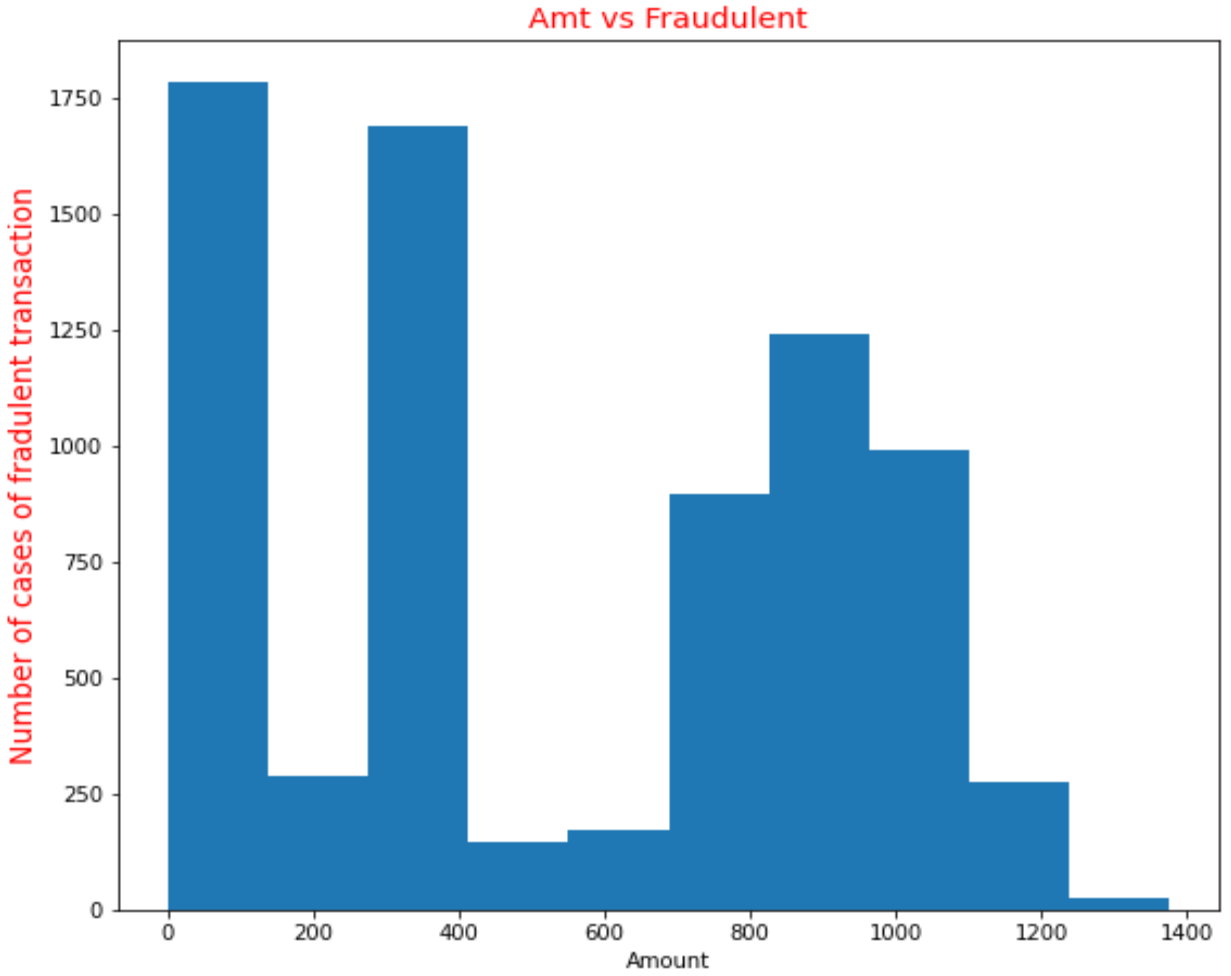
- Age group **40** - **60** are the crucial one because fraudulent transactions happen to these groups are large in terms of quantity.



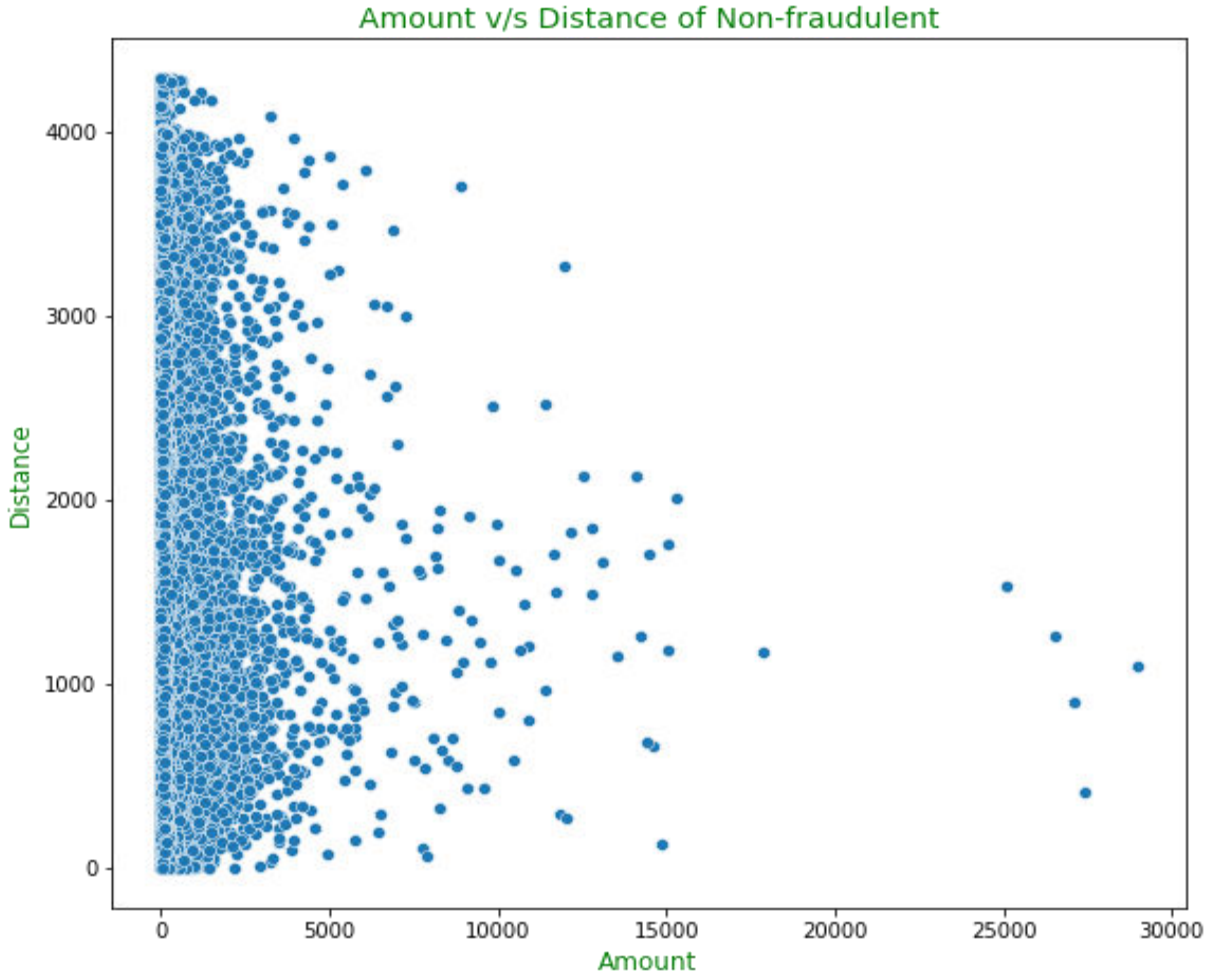


- **Senior citizens cards** are more concerned for the fraudulent transactions.
- Adult cards are also the group where we have to focus simultaneously.

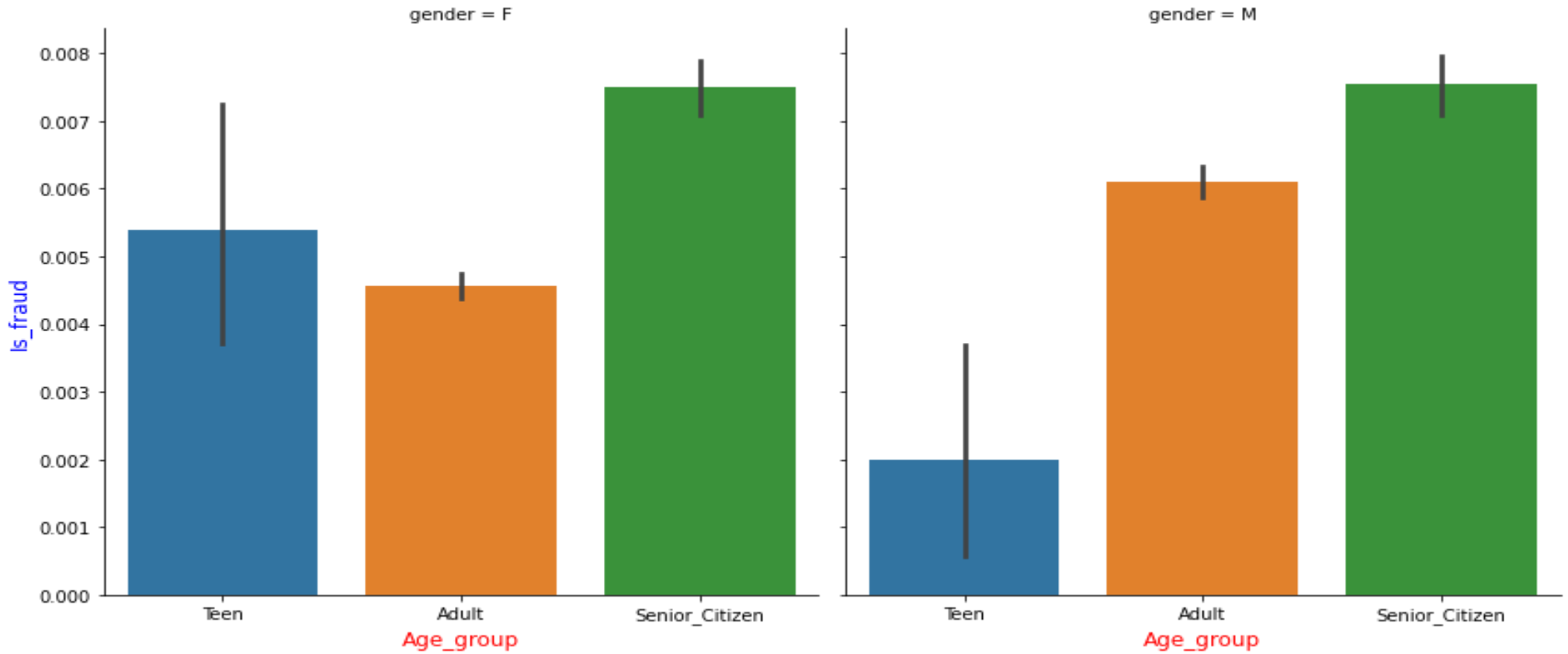




- Transactions which happens for the amount of **0 to 400** are more likely to be consider as a **fraudulent one**.
- And also transactions of amount of **800 to 1200** are also be considered as fraudulent one.



- Transactions whose **amount** is between **800 to 1200** and the **distance** of **1000 to 1800** are those transactions whose chances of being fraudulent one are high.



- Transactions done from **female** cards are more likely to consider as fraudulent one as compared to male card.
- **Senior Citizen** of both genders cards are more likely to be fraudulent transaction.

RECOMMENDATION

- Give more attention on the transactions which is happened from **Senior Citizens cards**.
- Provide **OTP** system on the **shopping malls**, **gas transport** and **grocery shops**.
- **NY** state is more prone for fraudulent transactions so use some **advance technology** in this state.

APPENDIX – DATA SOURCES

- Customers information such as first and last name, gender, dob and job.
- Transactions detail such as amt, state, lat, long, and distance.
- Details related to the merchant such as merchant name and merchant distance.

APPENDIX – DATA METHODOLOGY

- Process which is conducted for this analysis as follows:
  - Starting with cleaning the data such as finding missing value and outlier treatment.
  - Understanding the pattern and insights with the help of visualizing the data.
  - Building the machine learning to find the fraudulent transactions well.
  - Evaluating the model so that model can perform well on the unseen data.

THANKYOU