TABLE OF CONTENTS

PROBLEM STATEMENT

FRAUDULENT TRANSACTIONS (FTs) MADE ON CREDIT CARDS ARE ON THE RISE

The USA-based company has recently started collecting data in detail for such transactions.
The team manager responsible for credit card chargeback & dispute resolution was tasked to analyze data collected to improve the efficiency of processes and improve customer satisfaction.

DATA ANALYSIS: PREPARATION

1. Source: Kaggle
2. No errors were found when data is checked
3. Imported data into Tableau

Calculations

Calculated the age of clients based on the date of birth.

Age

```
IF DATEADD('year', DATEDIFF('year', [Dob], TODAY()), [Dob])> TODAY() THEN
                                DATEDIFF('year', [Dob], TODAY())-1
                                ELSE
                                DATEDIFF('year', [Dob], TODAY())
                                END
```

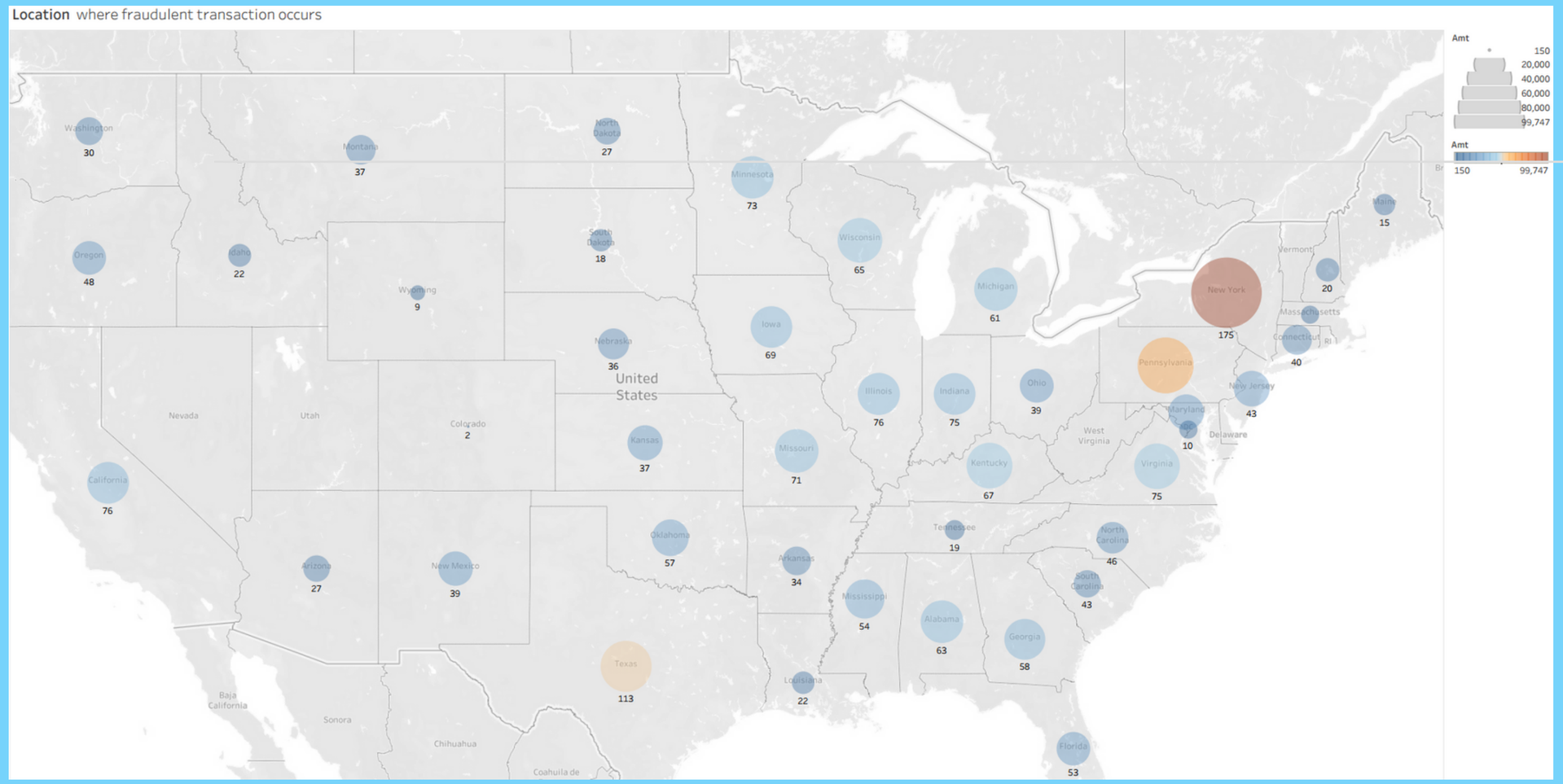
Data source: https://www.kaggle.com/datasets/dermisfit/fraud-transactions-dataset
Tableau link: https://public.tableau.com/views/CreditCardFraudProject/Location?:language=en-GB&publish=yes&:display_count=n&:origin=viz_share_link

IMPORTED DATA

1transdatetrans_time	The date and time of the transaction.	zip	ZIP code of card holder residence
cc_num	credit card number.	lat	latitude of card holder
merchant	Merchant who was getting paid.	long	longitude of card holder
category	In what area does that merchant deal.	city_pop	Population of the city
amt	Amount of money in American Dollars.	job	trade of the card holder
first	first name of the card holder.	dob	Date of birth of the card holder
last	last name of the card holder.	trans_num	Transaction ID
gender	Gender of the cardholder.Just male and female!	unix_time	Unix time which is the time calculated since 1970 to today.
street	Street of card holder residence	merch_lat	latitude of the merchant
city	city of card holder residence	merch_long	longitude of the merchant
state	state of card holder residence	is_fraud	Whether the transaction is fraud(1) or not(0)

DATA ANALYSIS: PRESENTATION

Top 3 states where FTs occur

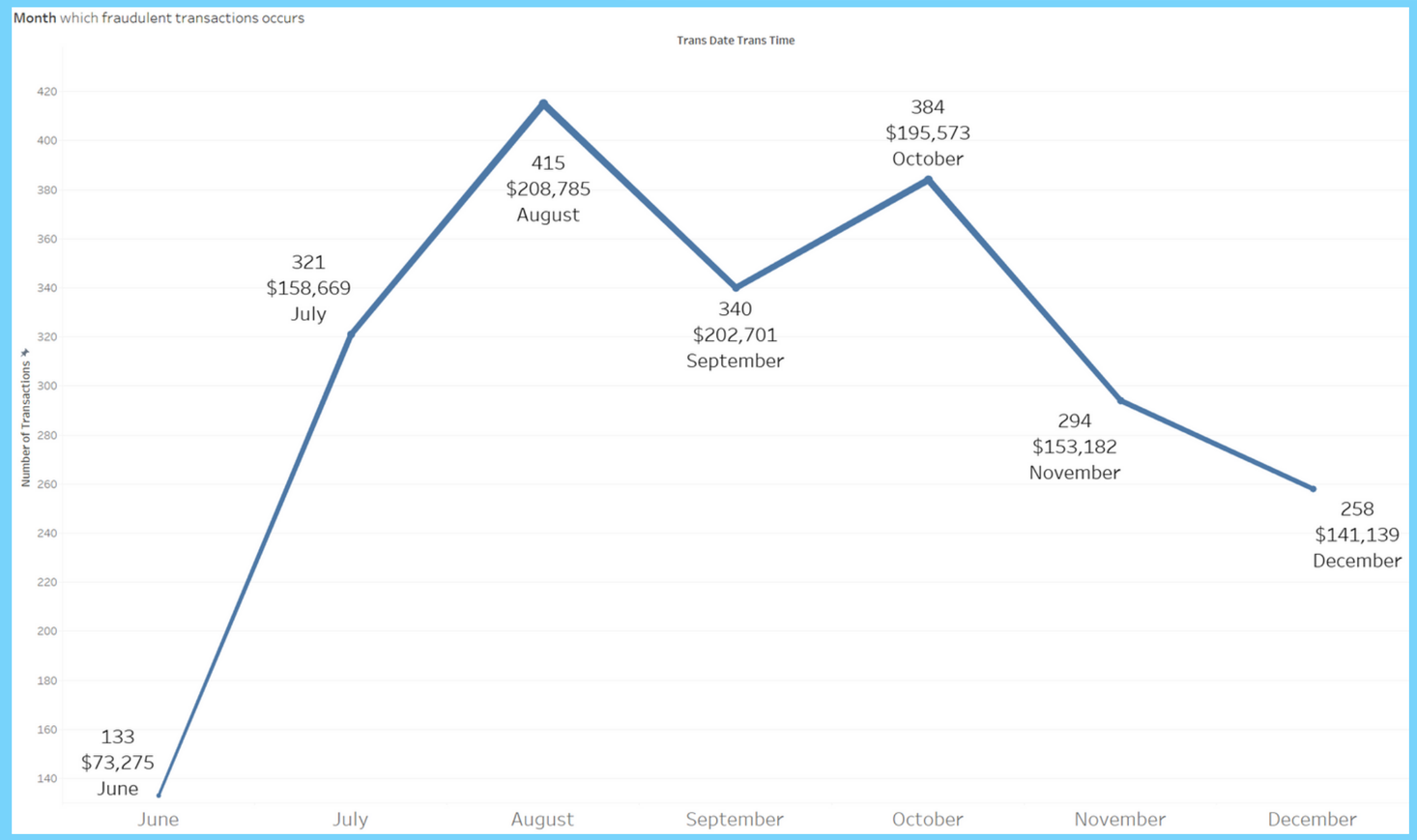


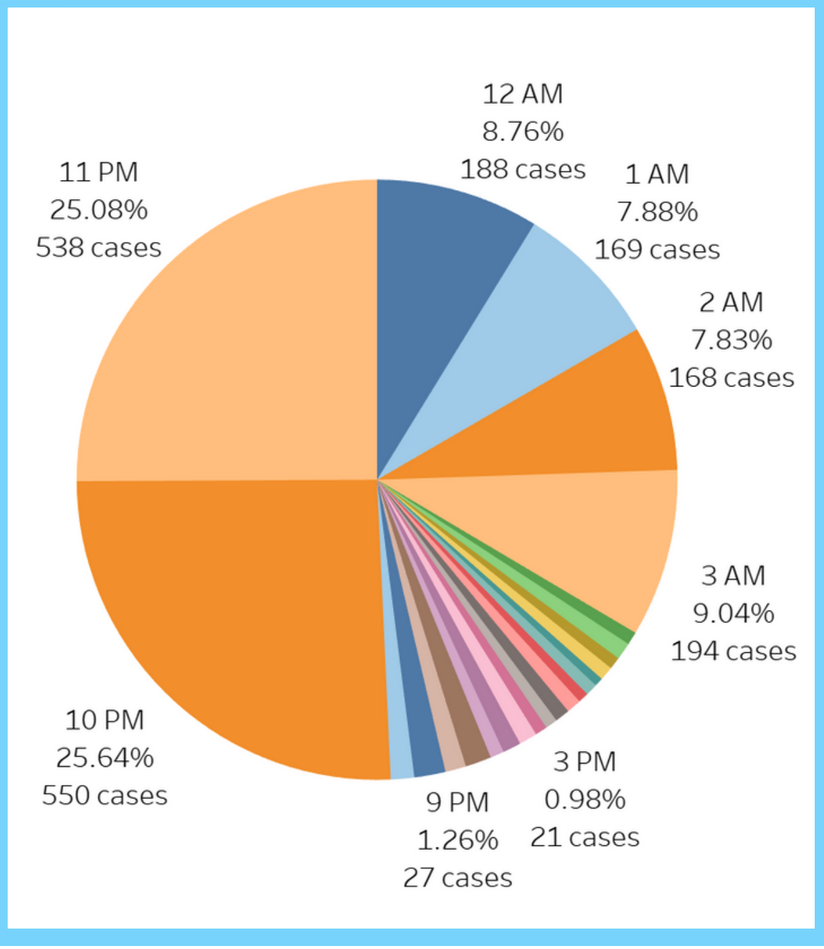
1) New York (175 cases)

2) Pennsylvania (114 cases)

3) Texas (113 cases)

WHEN?

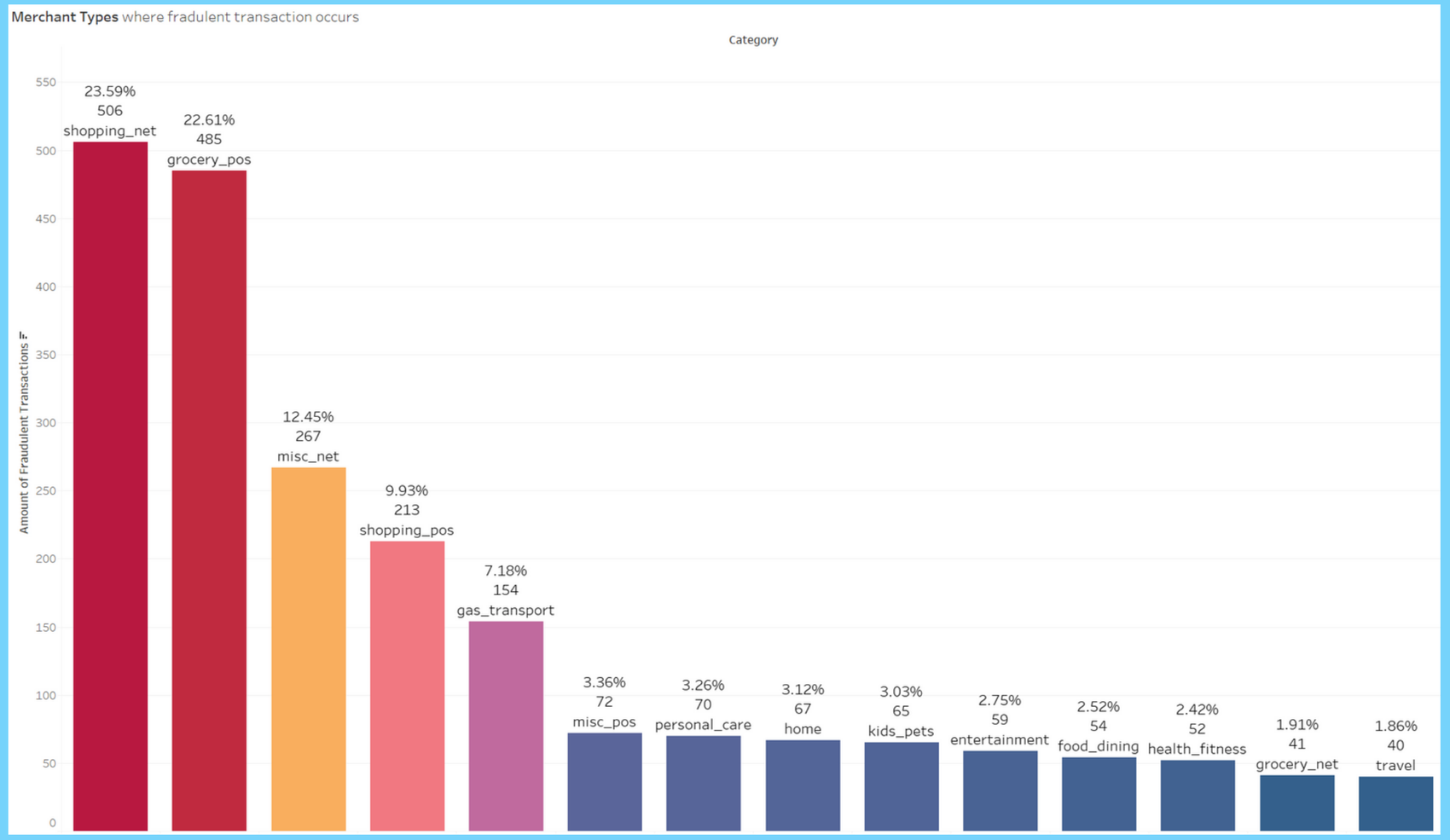




Peak months for FTs:
July, August, September, October
Limitations: Only Q3 & Q4 analyzed

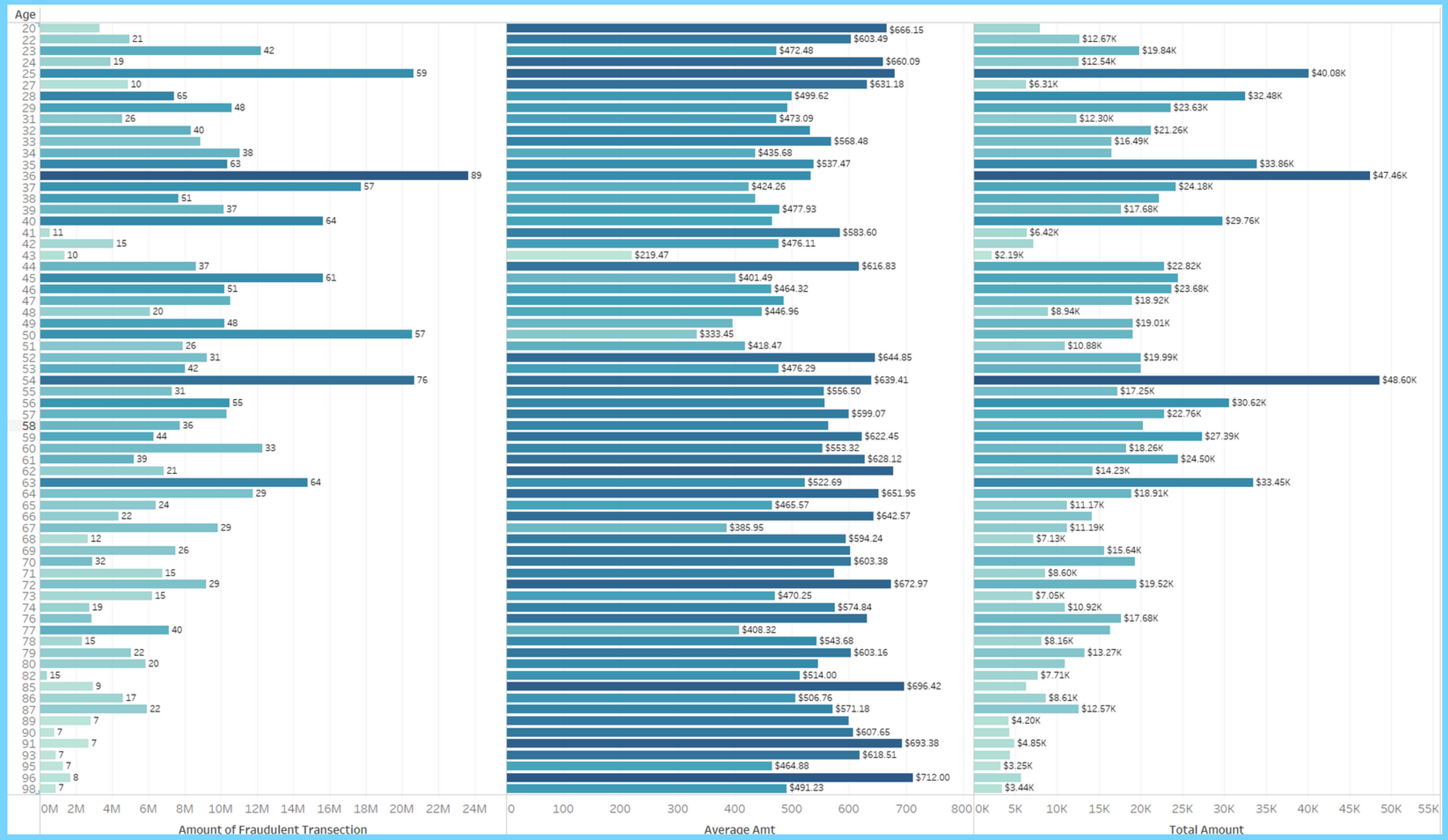
Peak time of the day for FTs:
10 PM to 3 AM

HIGHEST INCIDENCE RATE: TRANSACTION TYPES



- Transactions online take up to 36.04% of fraudulent transactions
- Purchasing grocery and shopping in-stores takes up 32.54% of fraudulent transactions

AGE AND TRASACTION CHARACTERISTICS



- (1) Amount of FTs and (2) Total amount of money involved is concentrated from age 20-60s
- No major pattern observed on the average amount of money involved with age

INSIGHTS & RECOMMENDATIONS

RECOMENDATION 1

Direct advertising resources/ campaigns towards cities **which has the highest incidence of card owners** involved in FTs (e.g. New York, Pennsylvania and Texas).

RECOMENDATION 2

Allocate more manpower and resources to the handling and processing of FTs during **peak months and hours.**

RECOMENDATION 3

Prioritize the analysis of suspicious transactions from **high-risk categories** (internet transactions, in-store grocery shopping) might improve the time taken to spot a fraudulent transaction.

RECOMENDATION 4

Emails, mails and application notifications can be sent with increased frequency to populations (e.g. age 20-60) with higher incidents of FTs to educate them on prevention strategies such as 2-Factor Authentication

Thank you!