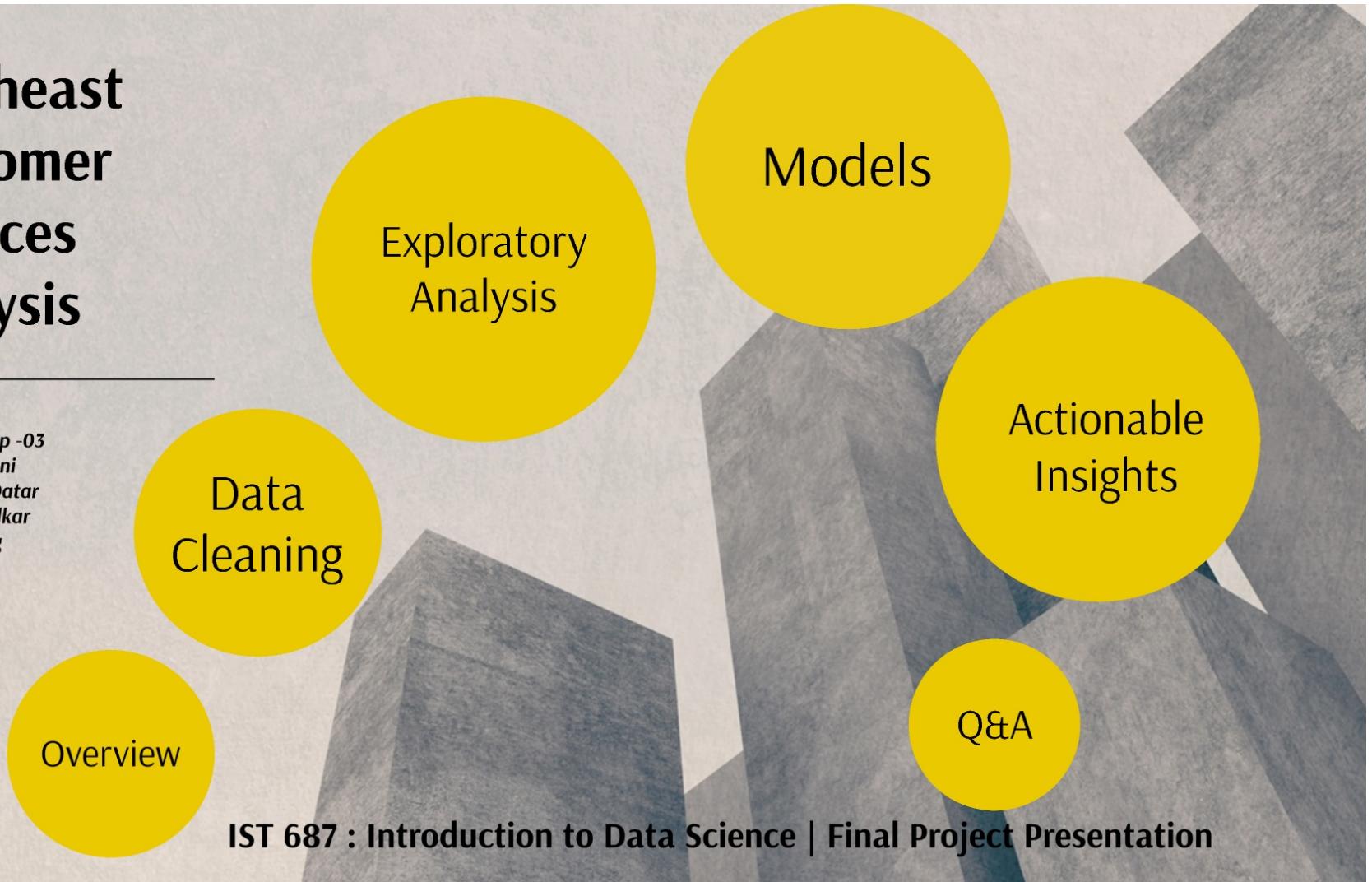
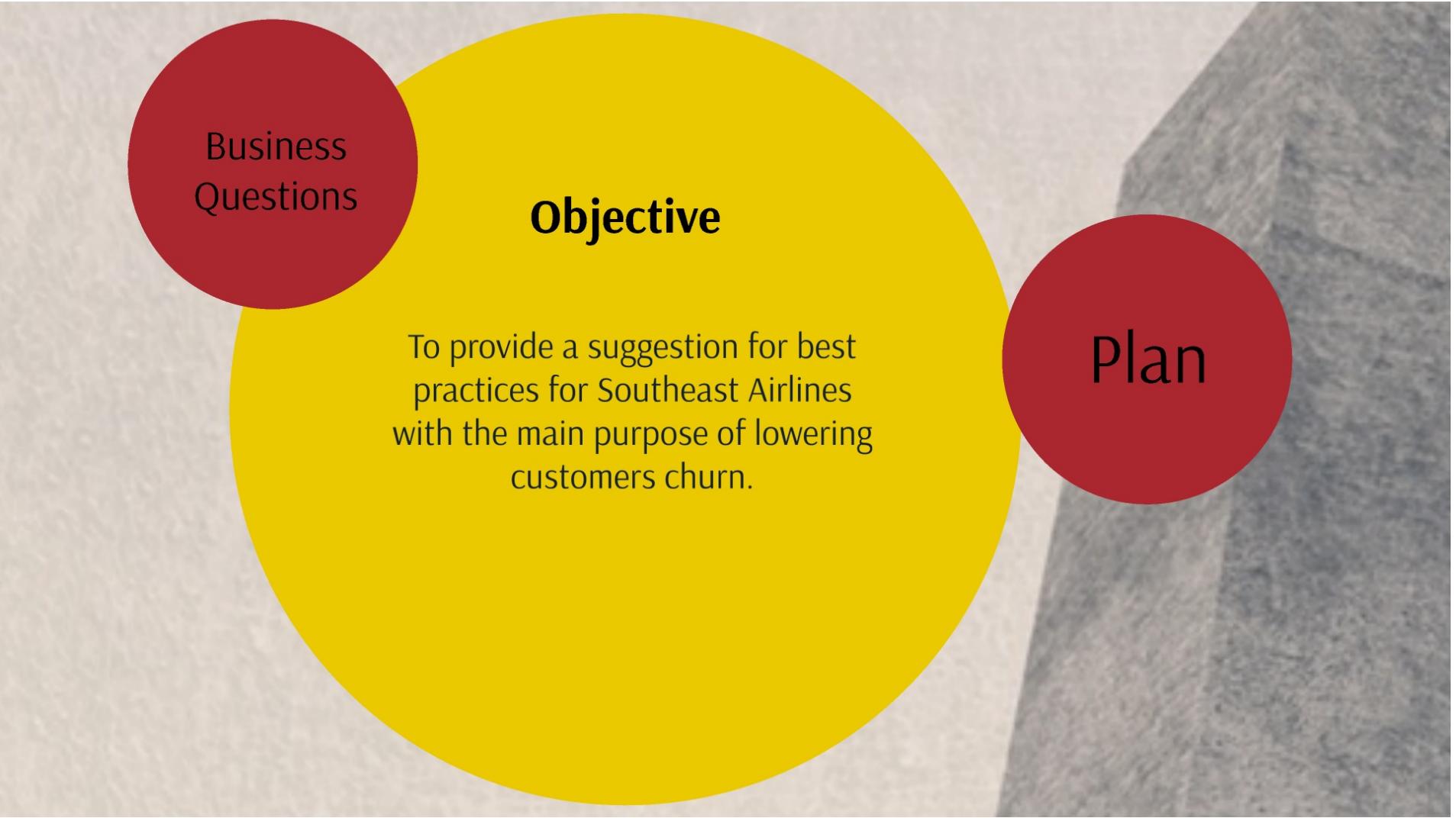


Southeast Customer Services Analysis

Presented by : Group -03
Nishit Nakrani
Prathmesh Datar
Pranjal Sondkar
Zhiwei Wang



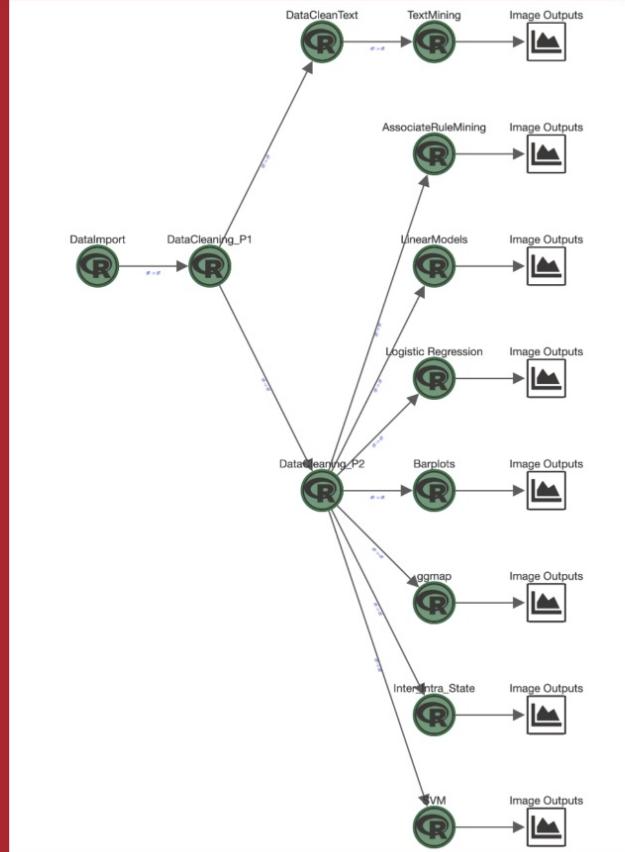


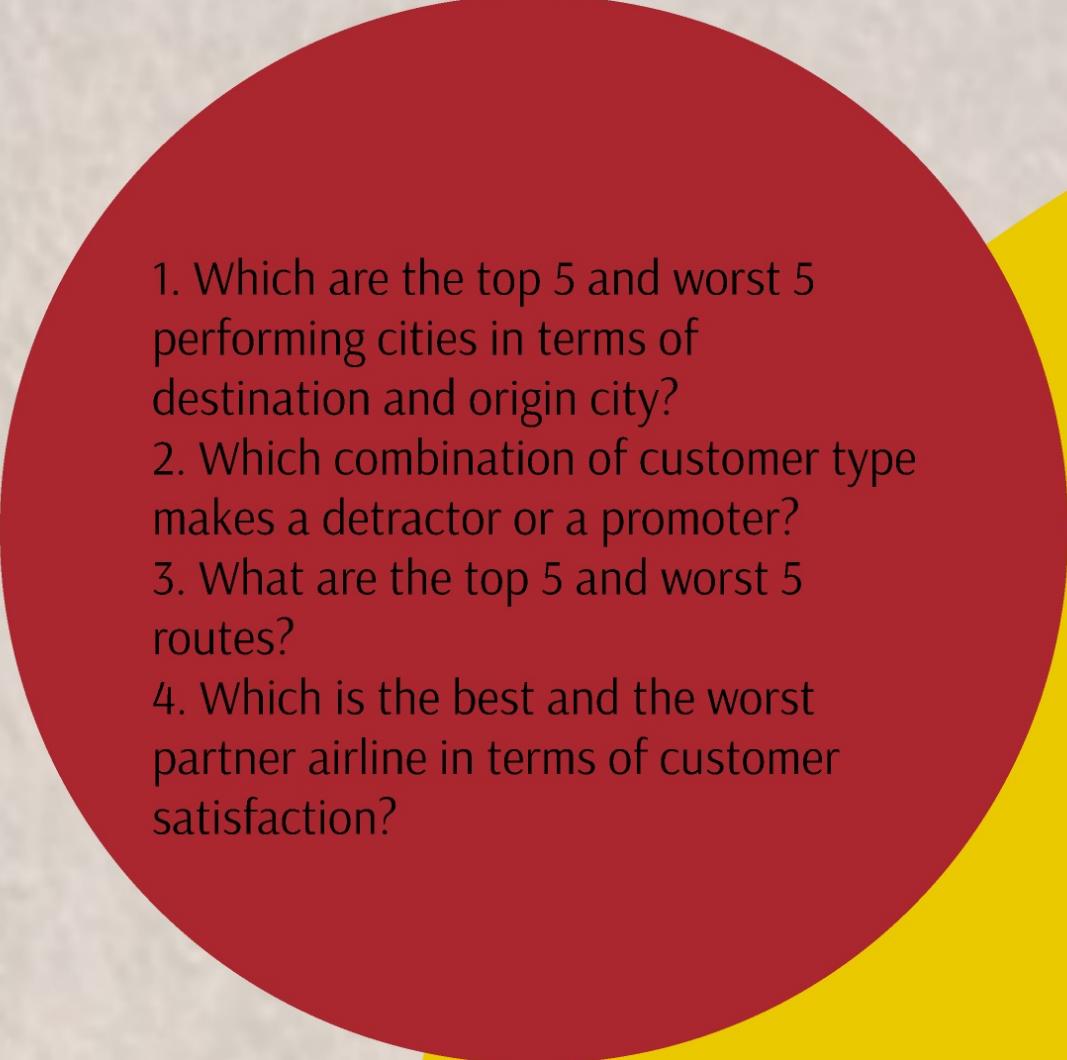
Business
Questions

Objective

To provide a suggestion for best practices for Southeast Airlines with the main purpose of lowering customers churn.

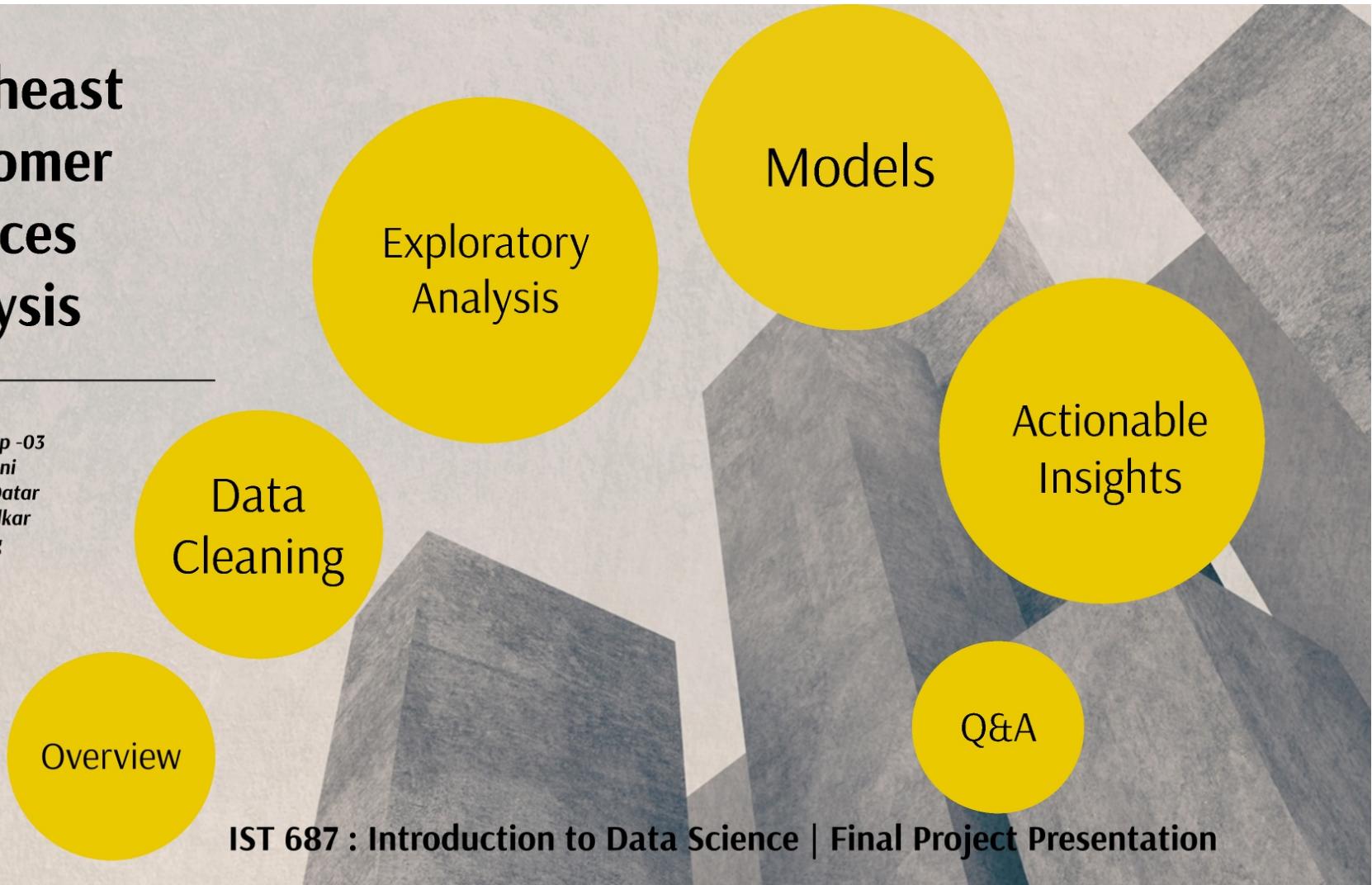
Plan



- 
1. Which are the top 5 and worst 5 performing cities in terms of destination and origin city?
 2. Which combination of customer type makes a detractor or a promoter?
 3. What are the top 5 and worst 5 routes?
 4. Which is the best and the worst partner airline in terms of customer satisfaction?

Southeast Customer Services Analysis

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Pranjal Sondkar
Zhiwei Wang



Data Cleaning

1. Continuous to categorical
2. Dealt with NAs
3. Delay Time to Delay Ratio

type	agegroup	Day.of.Flight	spend	ArrivalDelayRatio	DepartureDelayRatio
<fct>	<fct>	<chr>	<fct>	<dbl>	<dbl>
passive	SrCitizen	weekday	yes	0.30	0.46
promoter	Adult	weekend	yes	0.00	0.00
detractor	Adult	weekday	yes	0.17	0.18
detractor	Adult	weekday	yes	0.15	0.17
promoter	Adult	weekday	yes	0.01	0.00
detractor	Adult	weekday	yes	0.00	0.00

First

Second

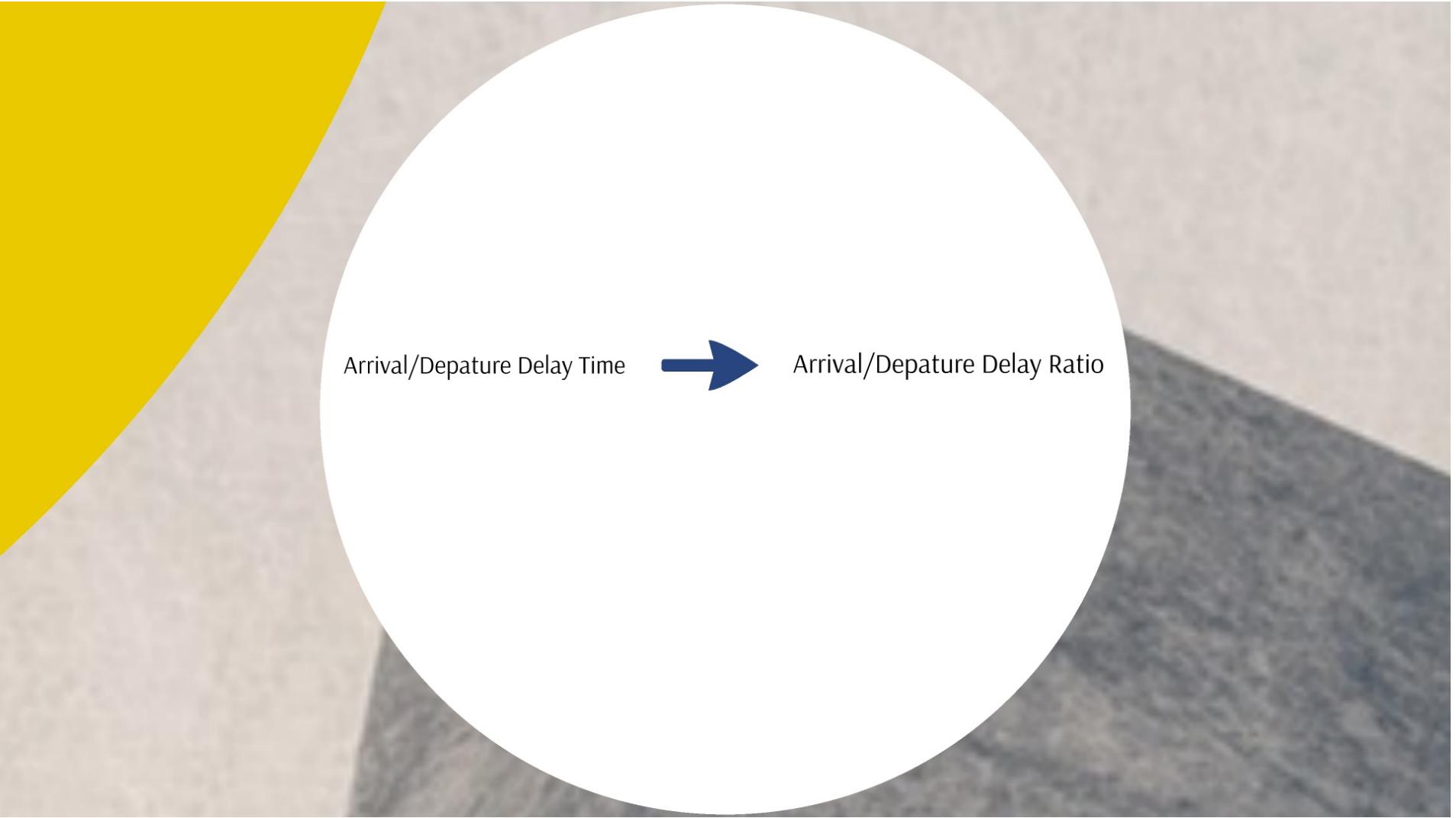
Third

Continuous to Categorical



Dealing with NAs

- Flights were not canceled:
 - Remove 21 rows that still have NAs in flight time, departure delay, and arrival delay.
- Flights were canceled:
 - Replaced the NAs with maximum delay in minutes and average flight time



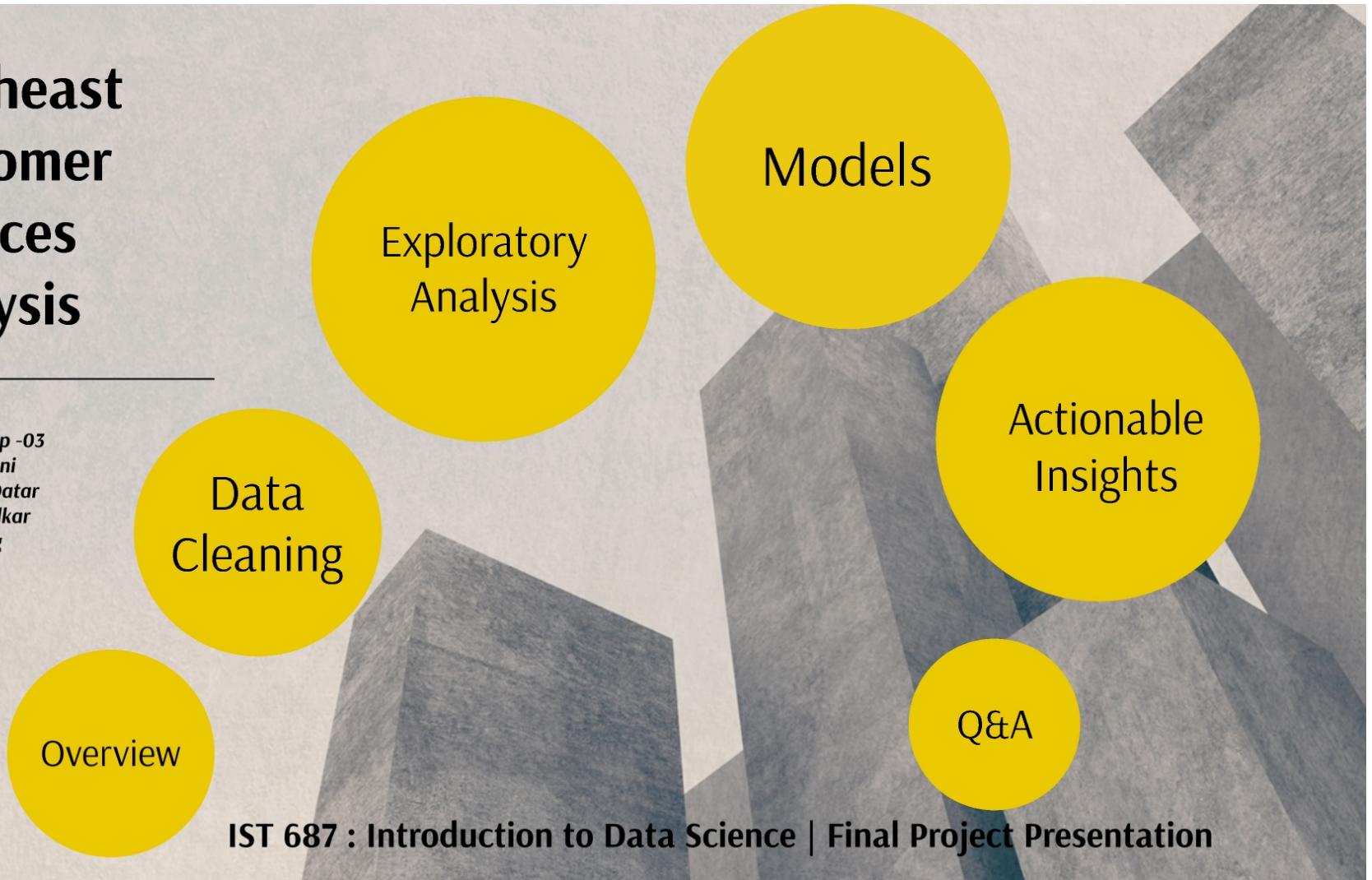
Arrival/Depature Delay Time



Arrival/Depature Delay Ratio

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Zhiwei Wang



Exploratory Analysis



Bar Plots



Text Mining



Inter & Intra State Plot



Map

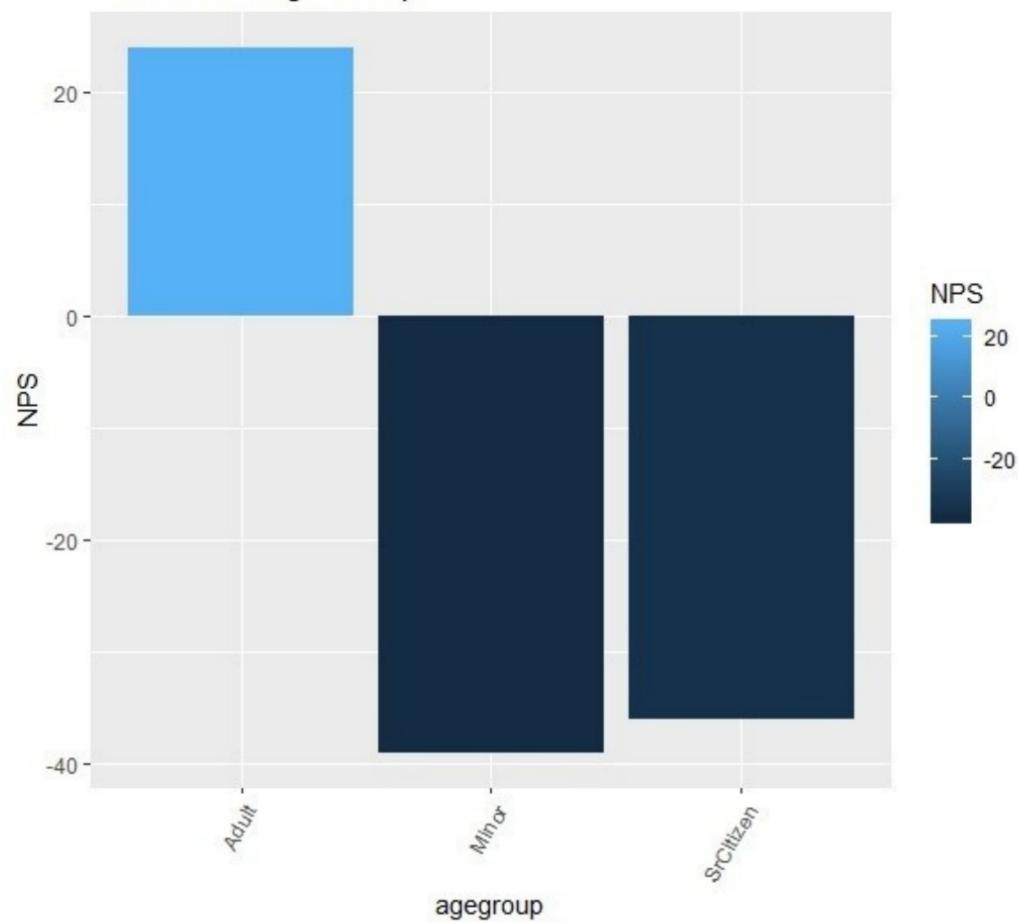
Bar Plots

Text
Mining

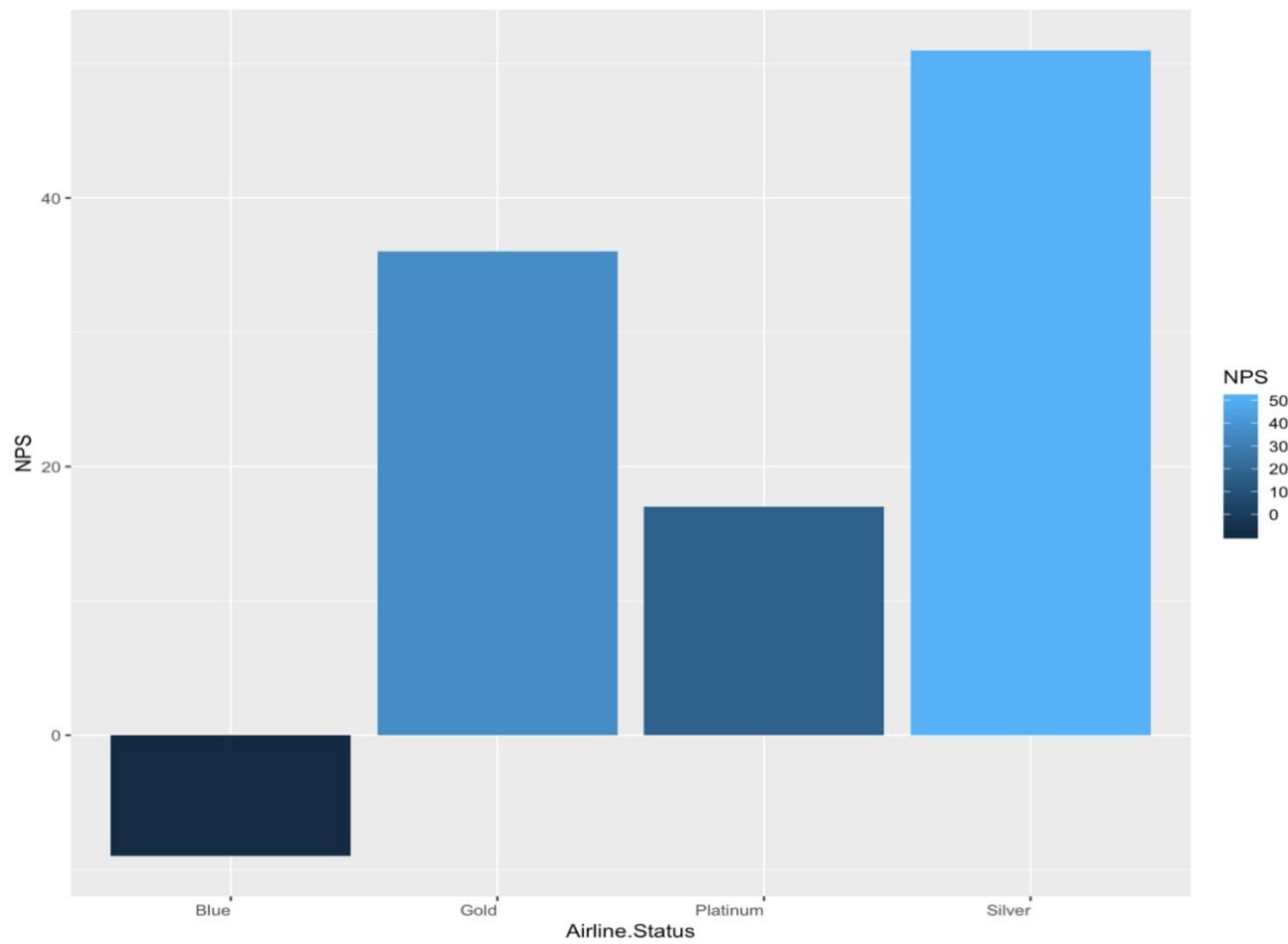
Inter &
Intra
State Plot

Map

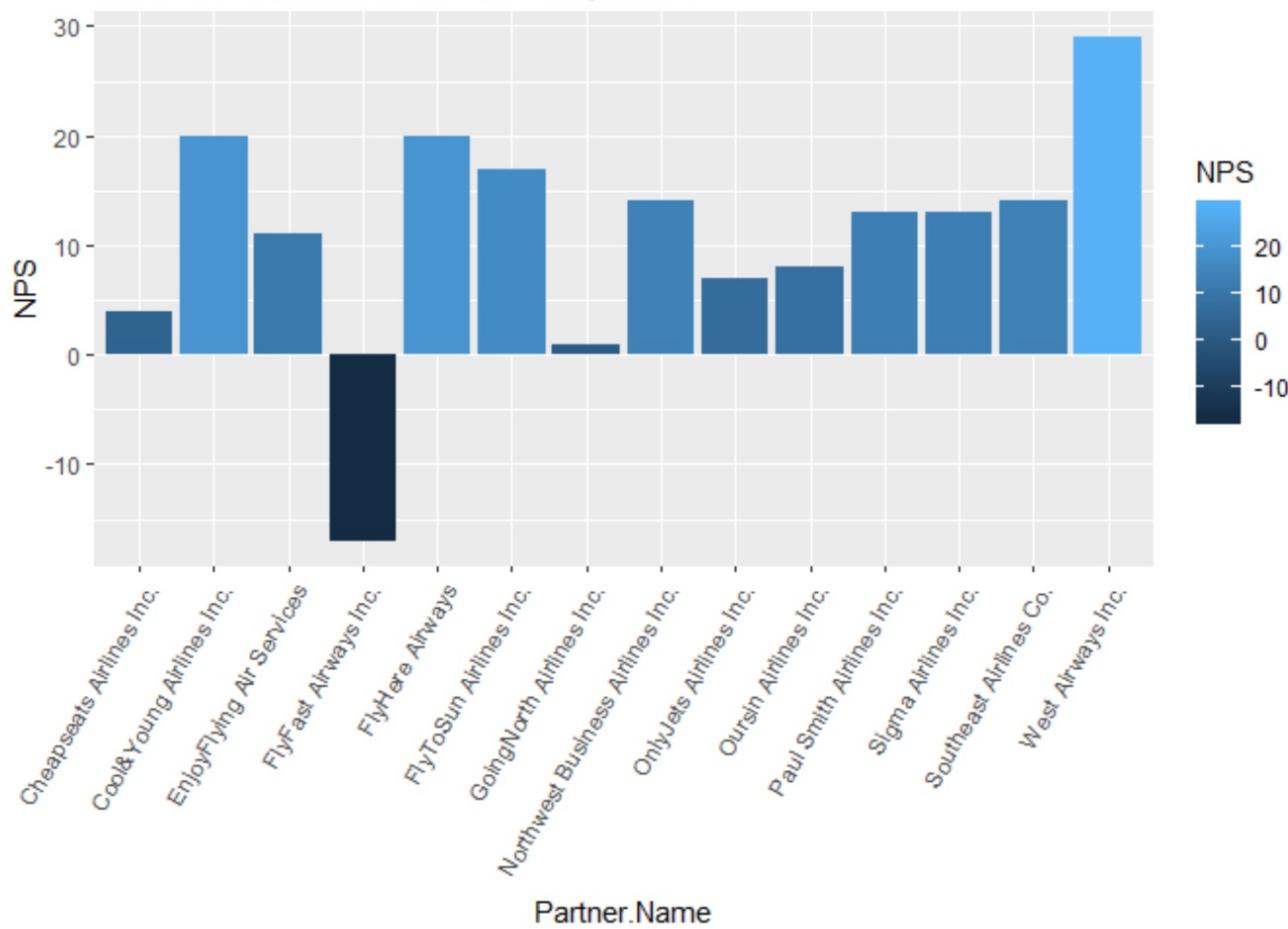
The NPS of Age Group



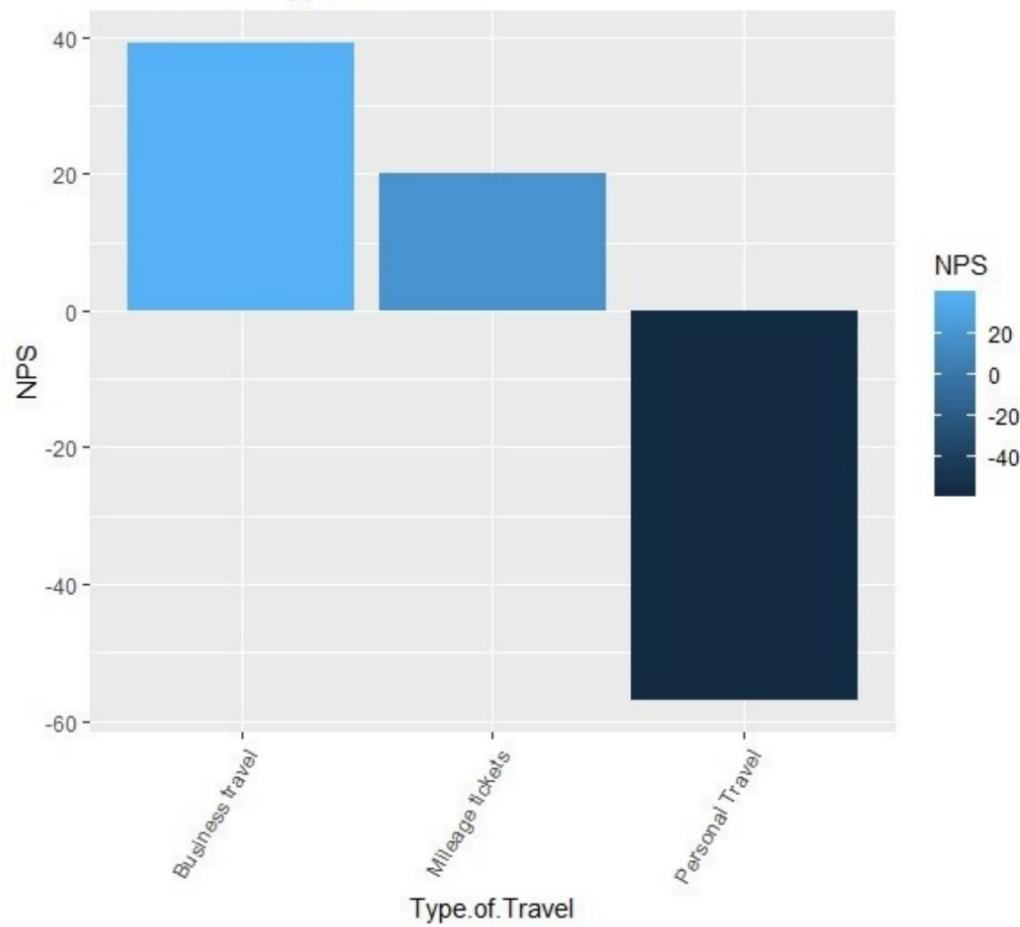
The NPS of Different Airline Status



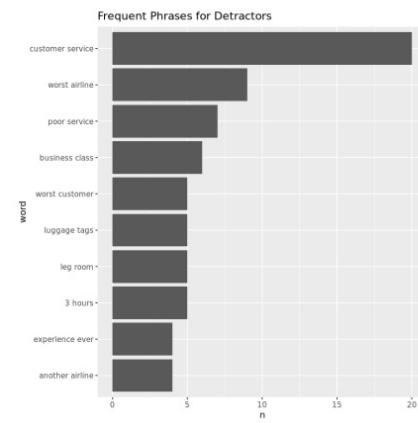
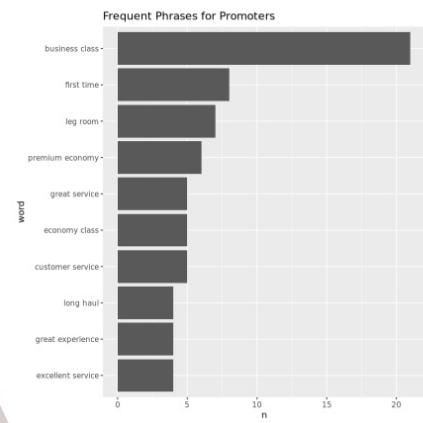
The NPS of Partner Airline Companies

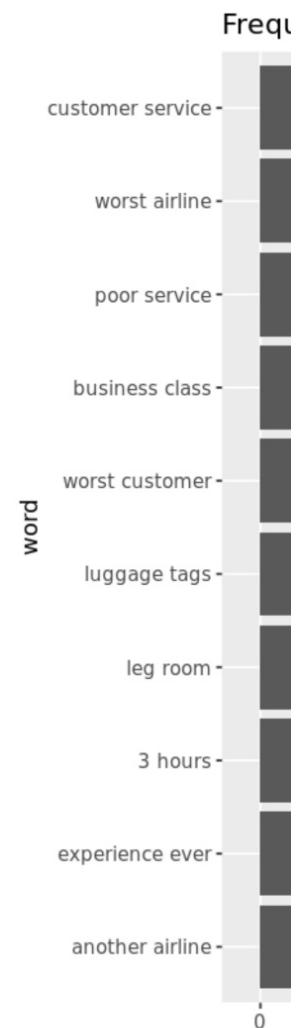
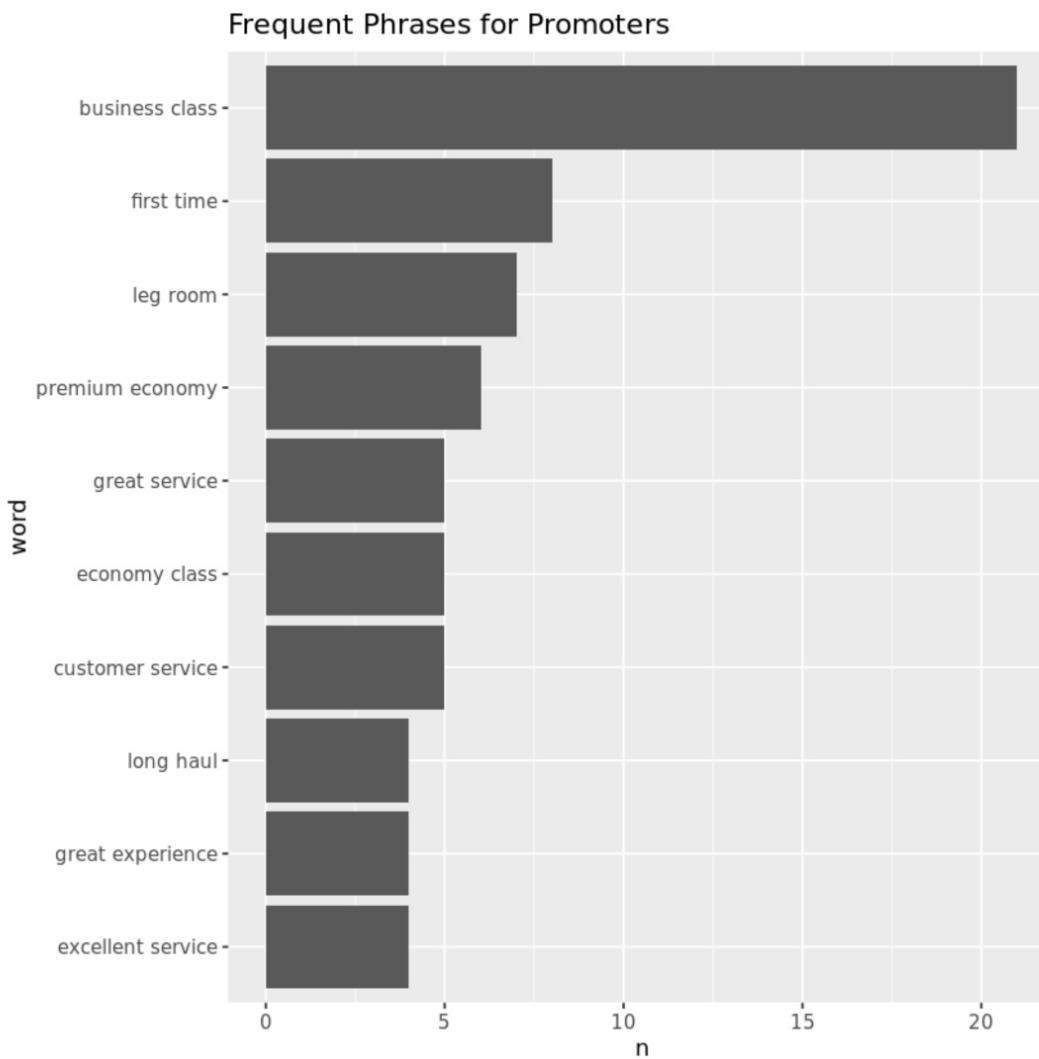


The NPS of Type of Travel

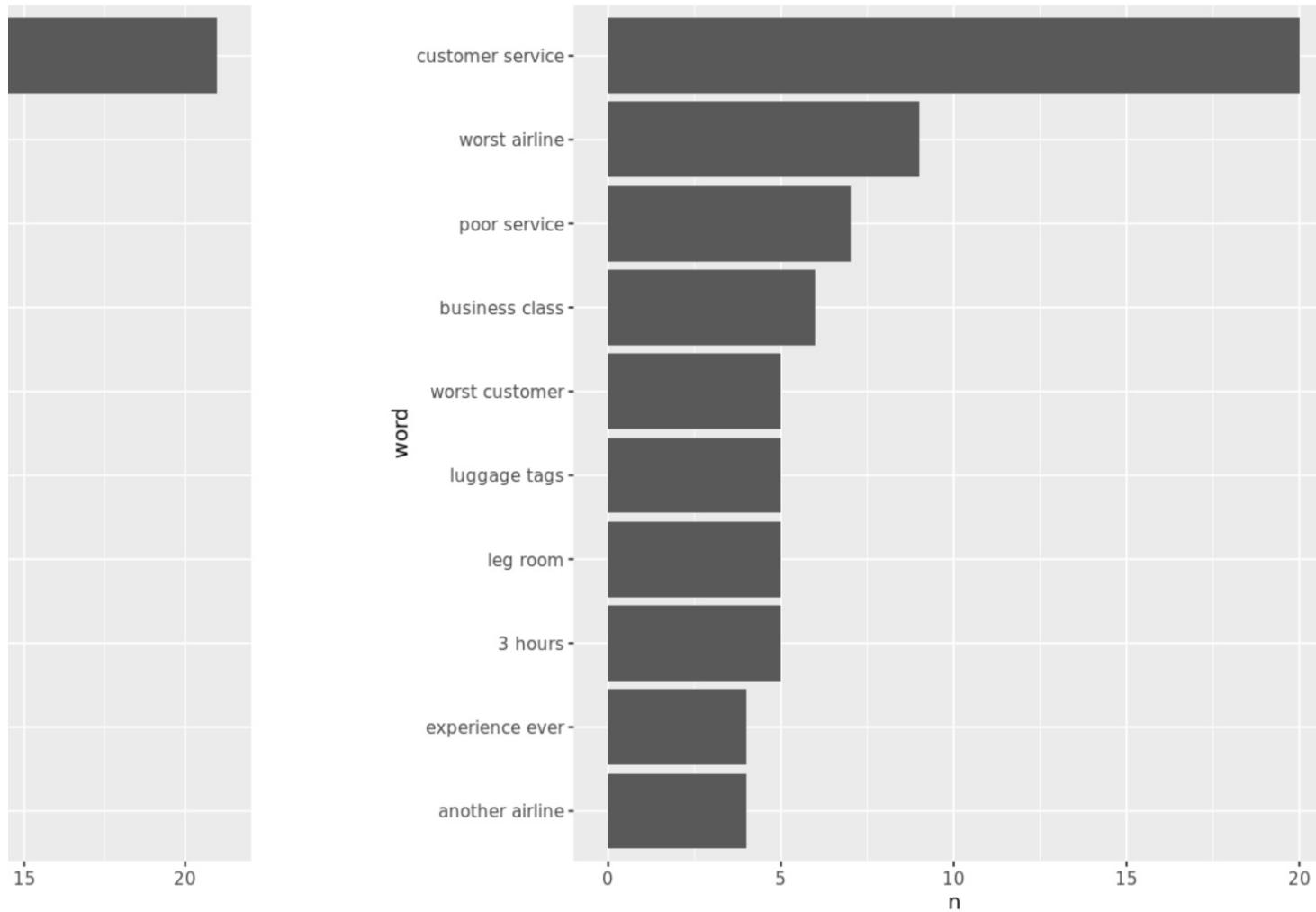


Key Words

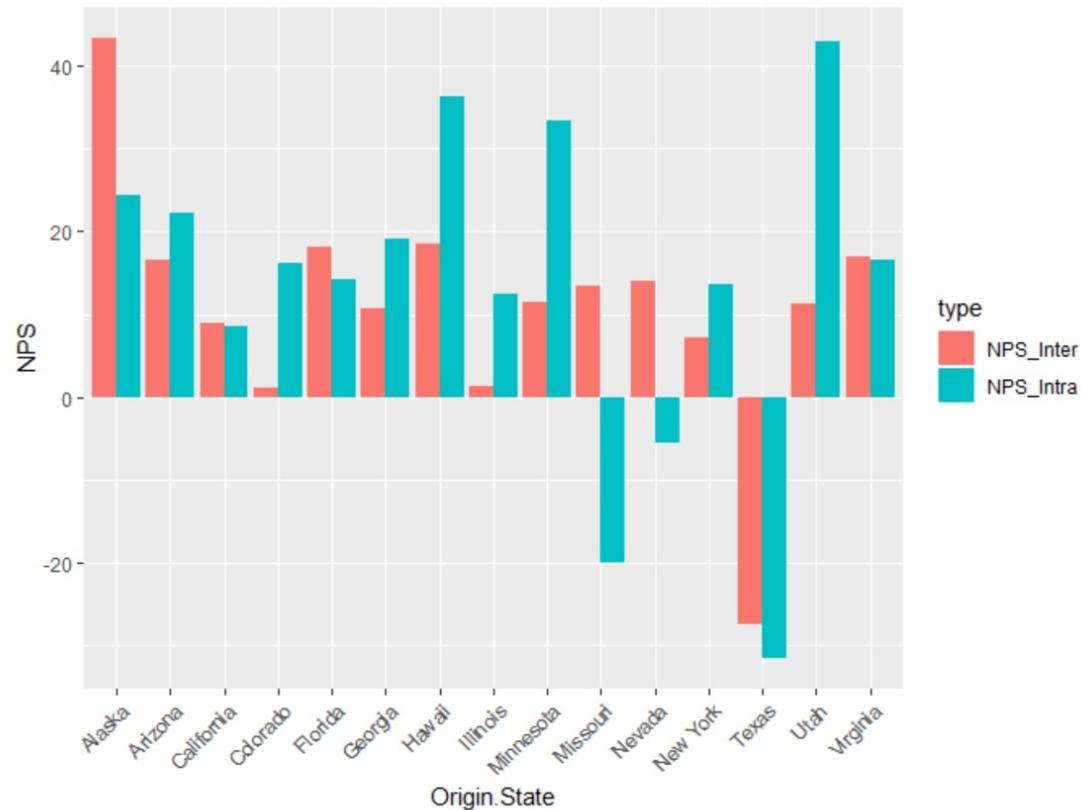




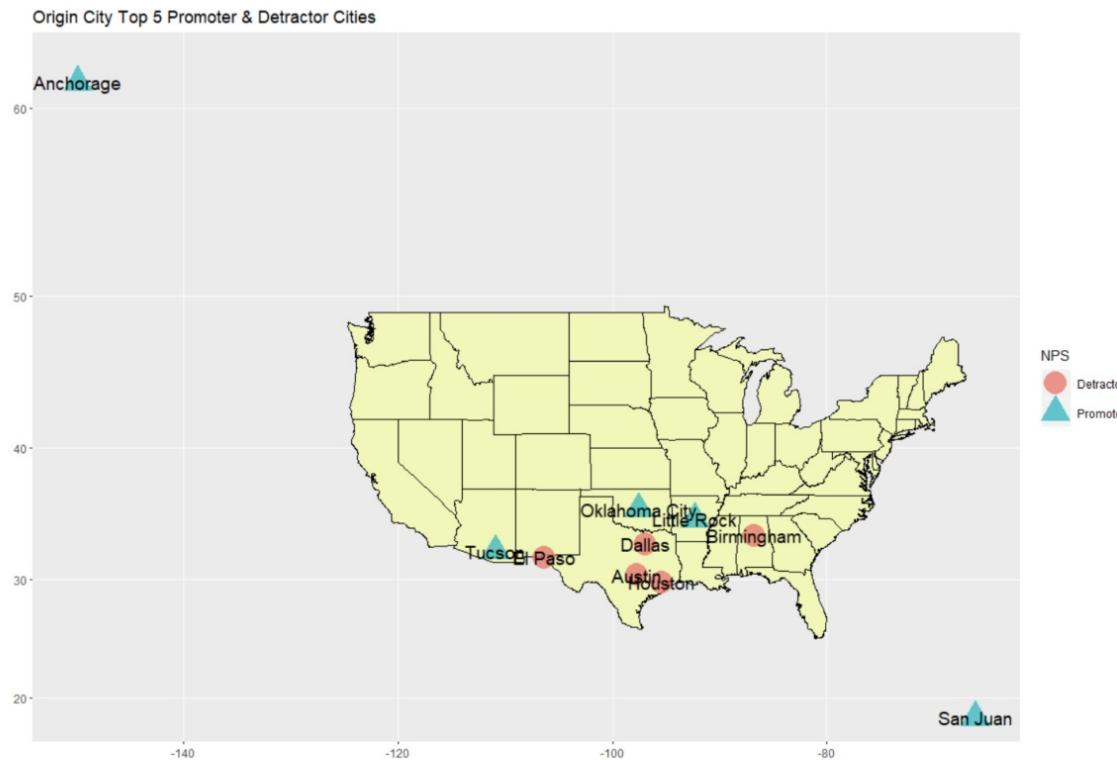
Frequent Phrases for Detractors



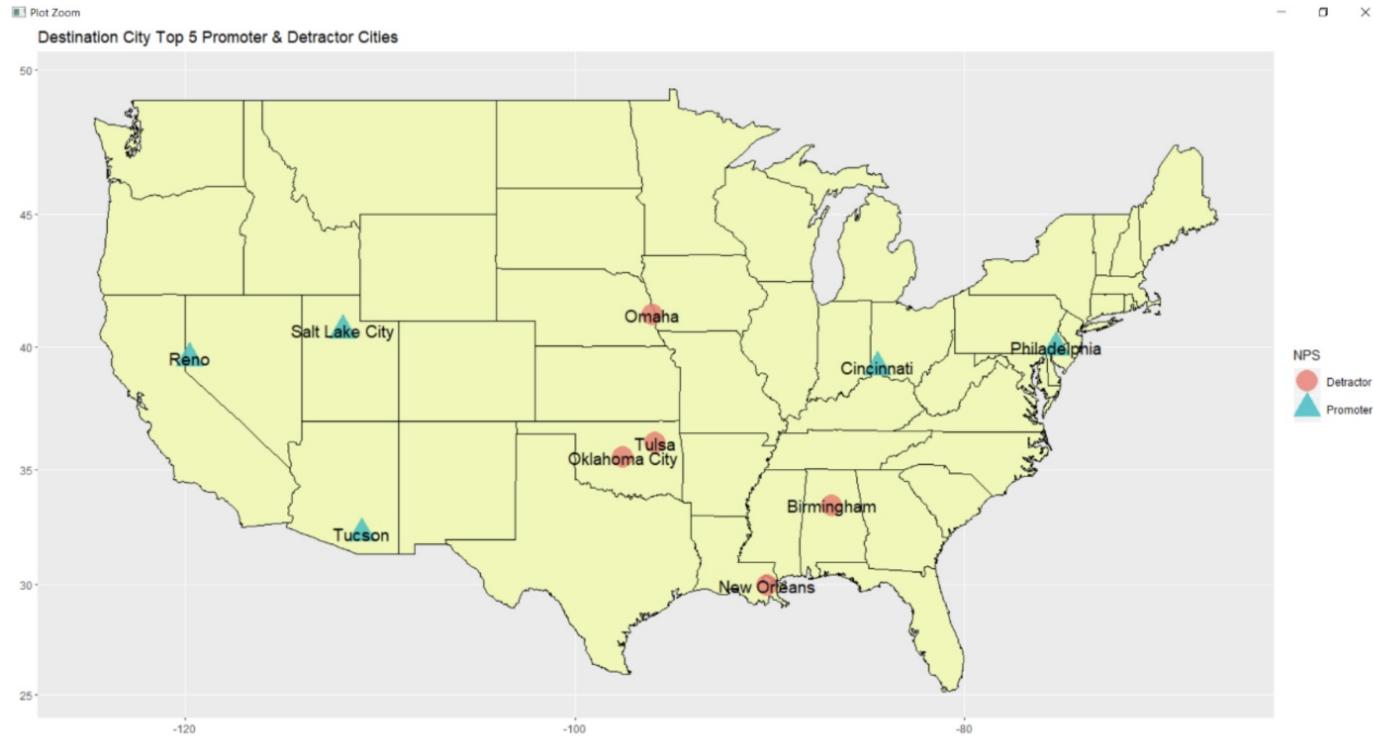
Inter-State & Intra-State



The Five Best and Worst Origin City



The Five Best and Worst Destination City

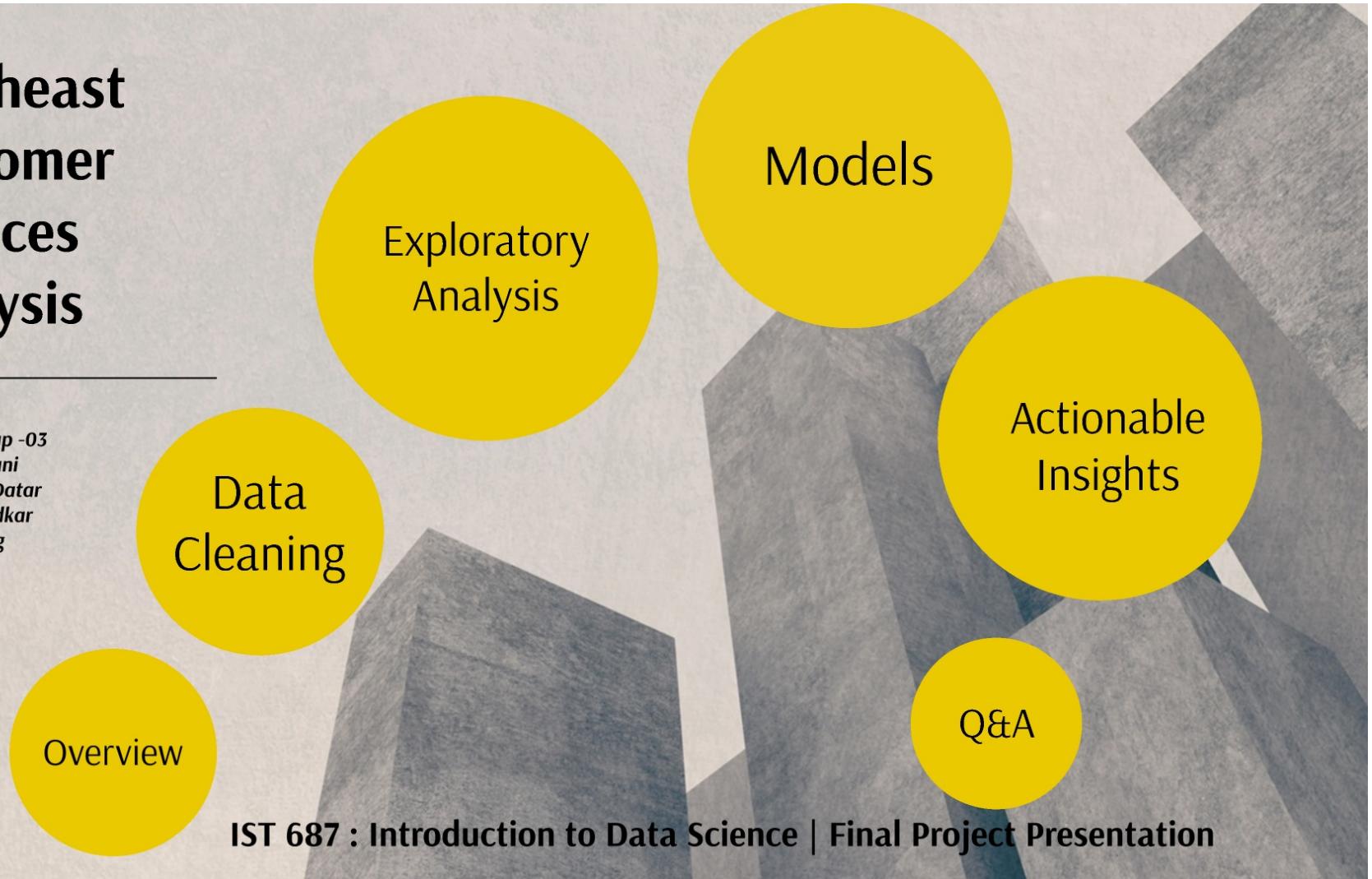


The Five Best and Worst Routes



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Model

- Linear Regression
- Logistic Regression
- Support Vector Machine
- Association Rule Mining

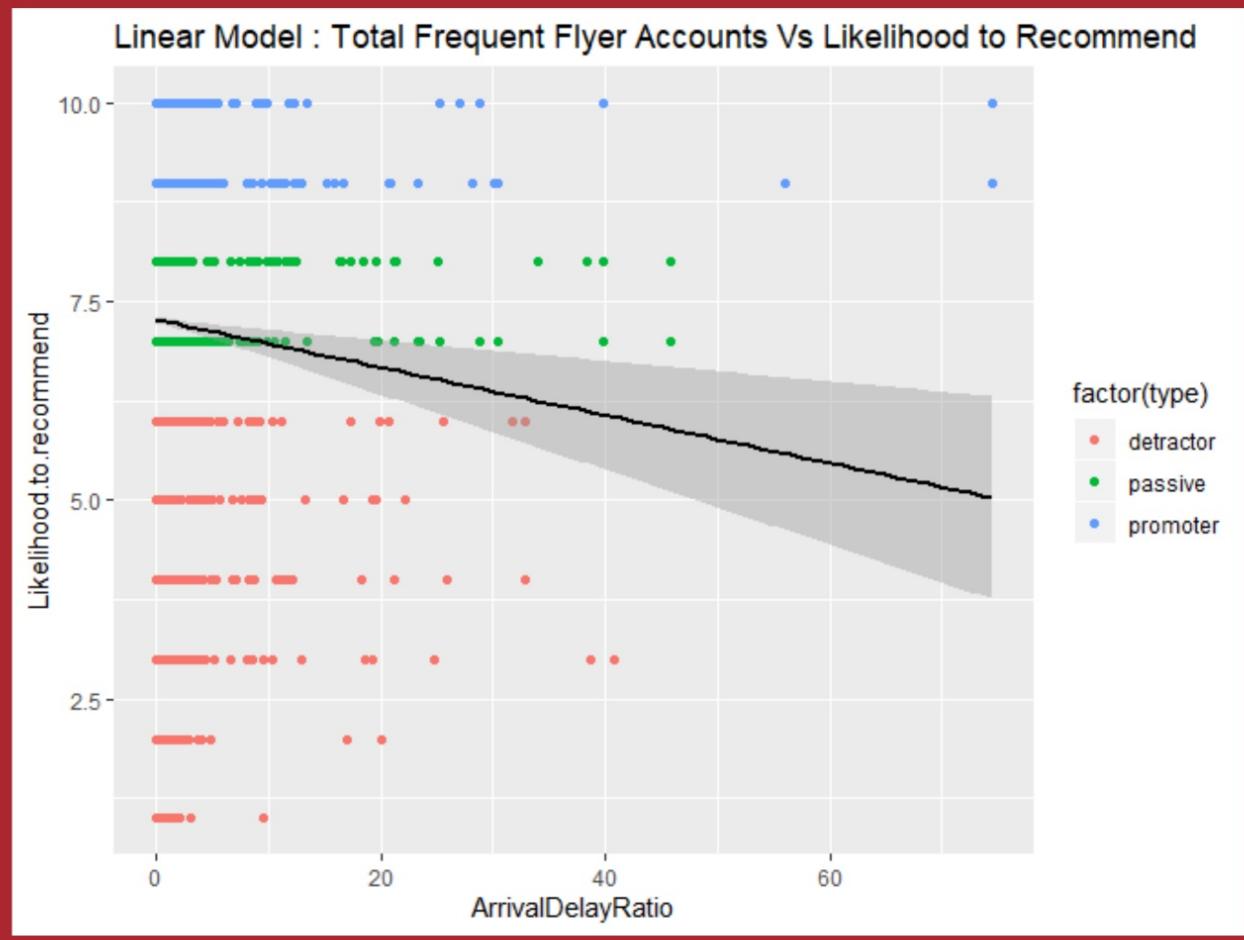
Linear

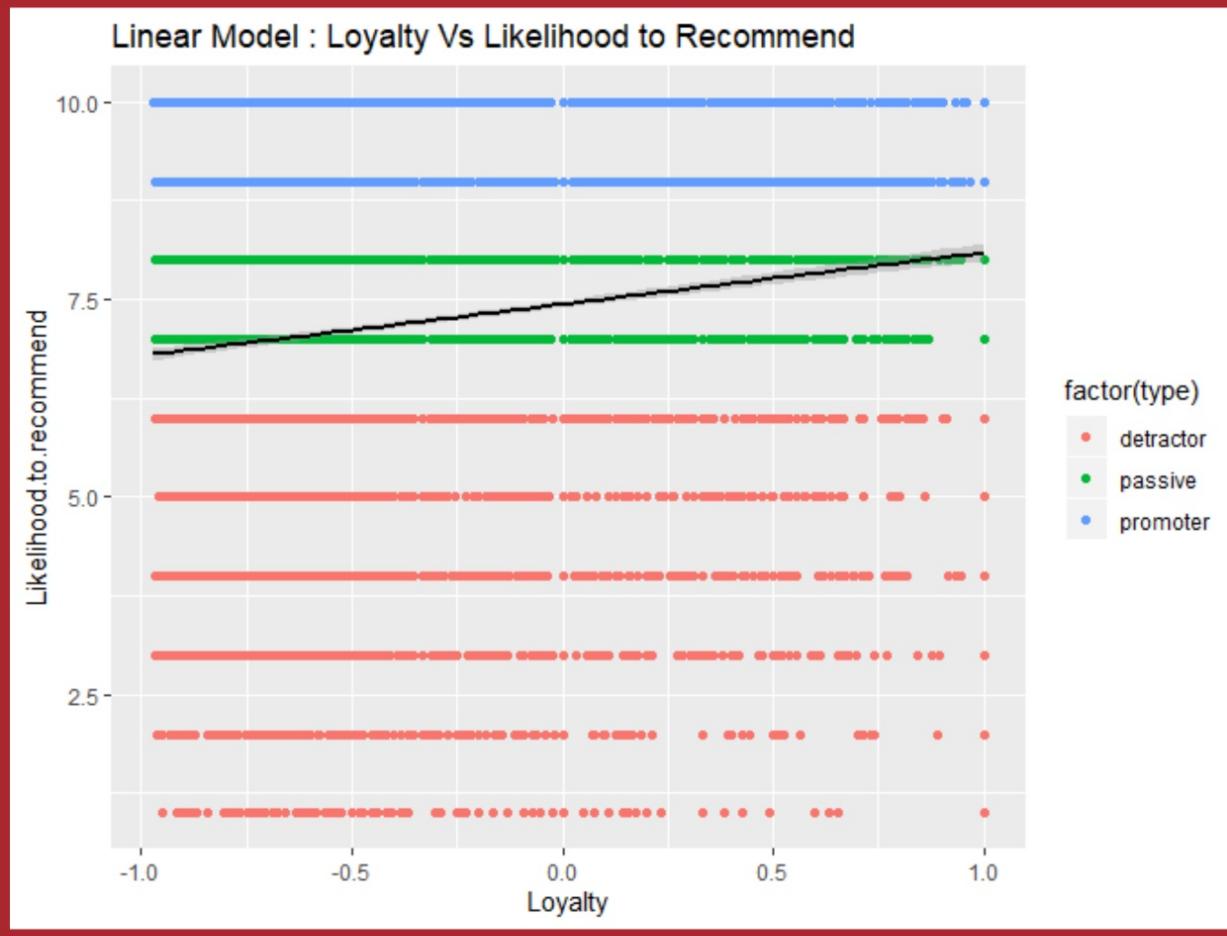
Logistic

SVM

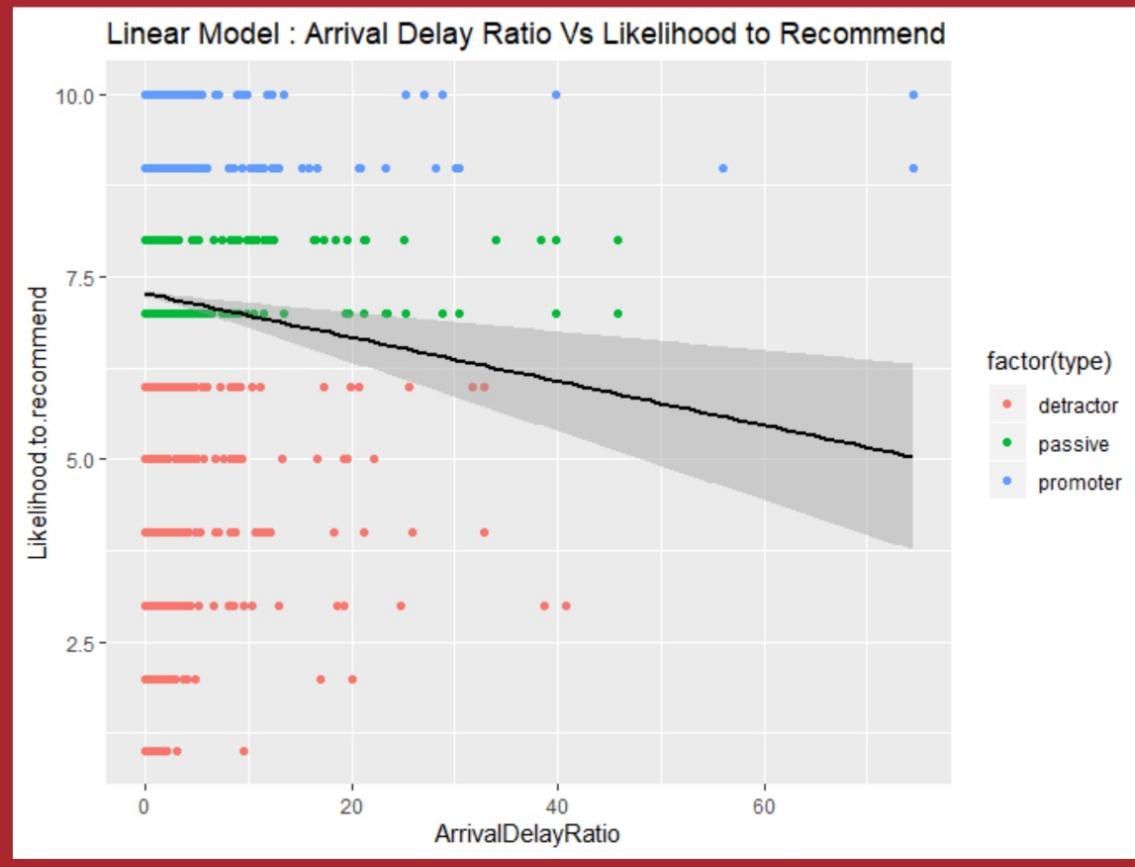
Rule

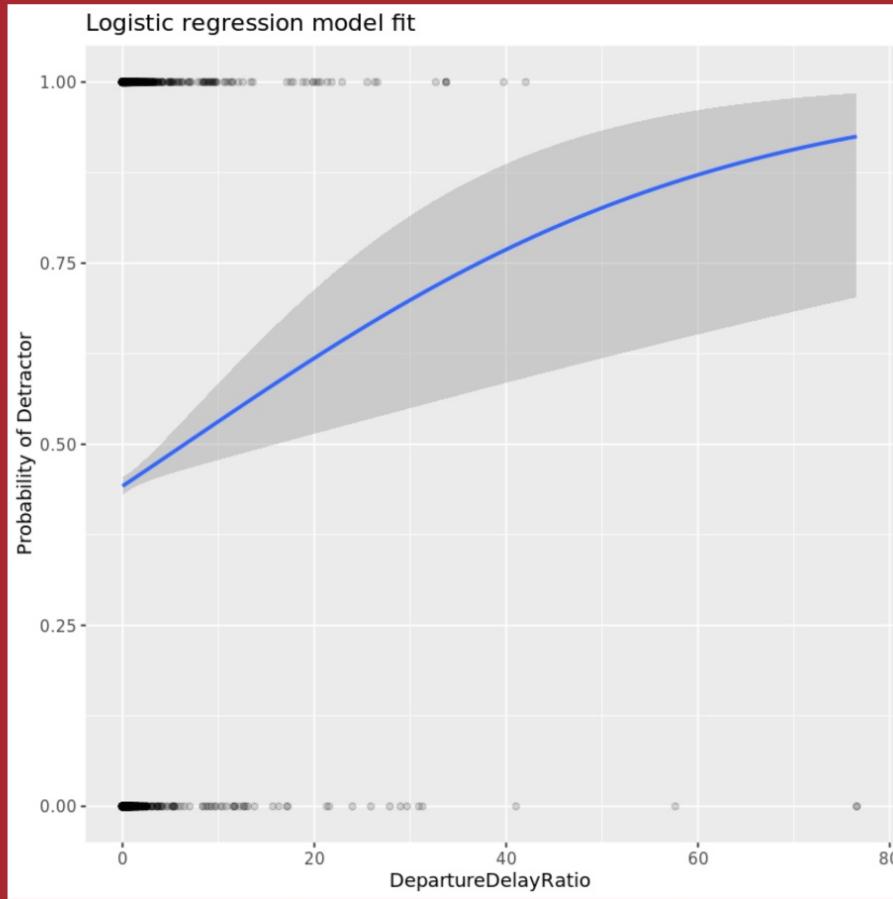
Compare

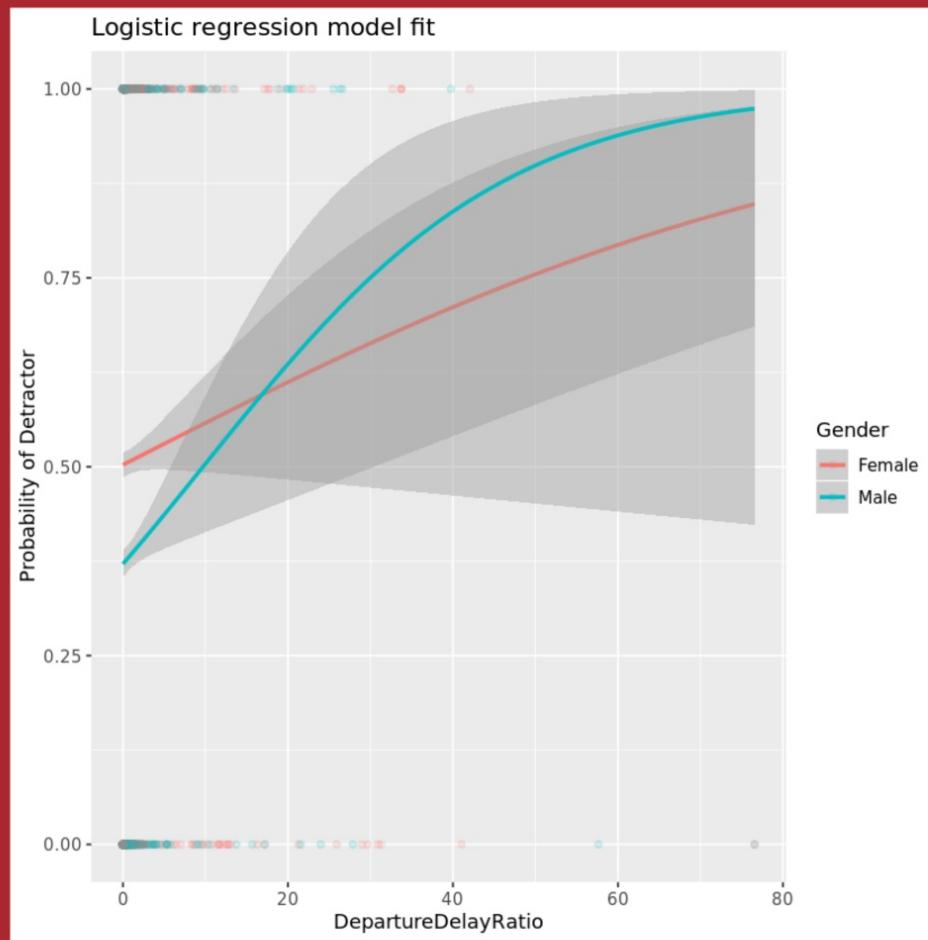


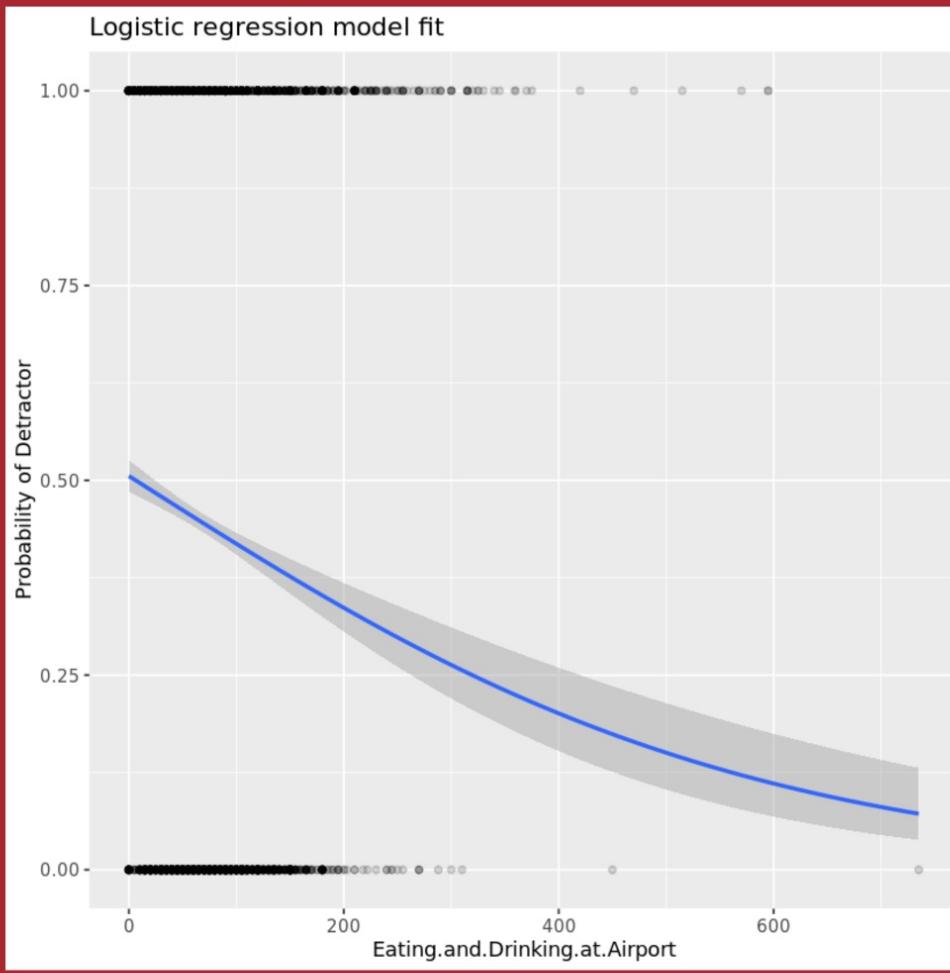


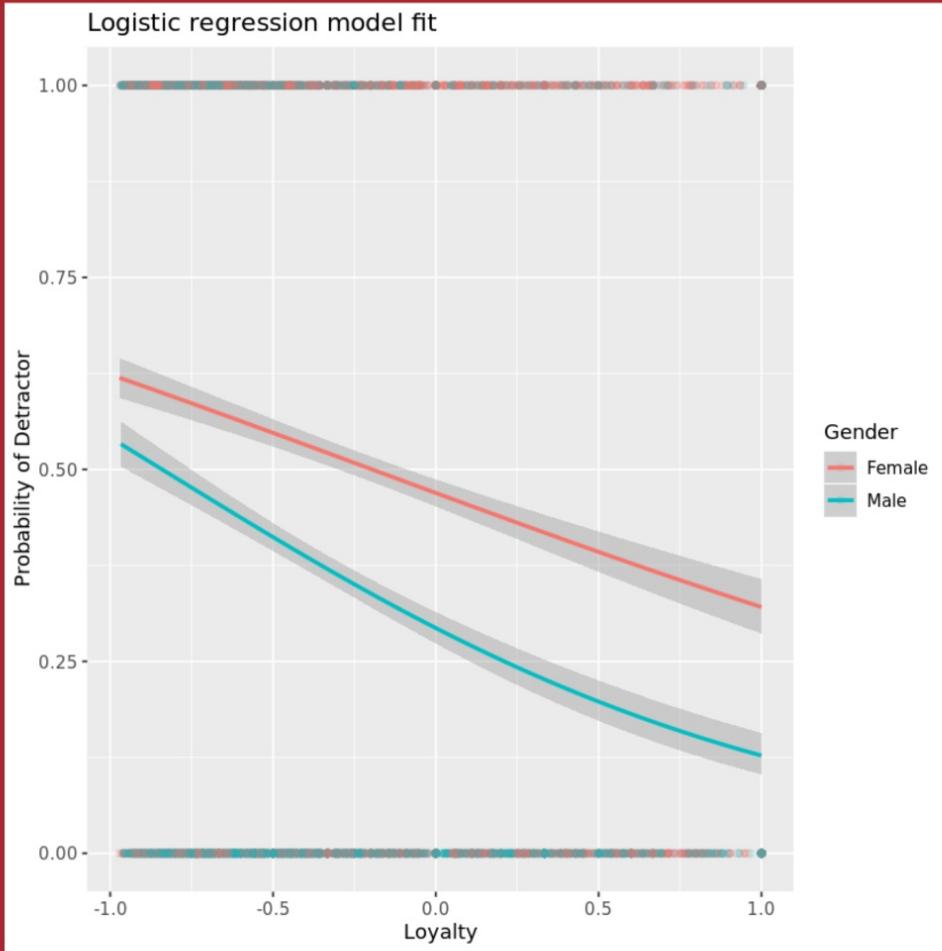


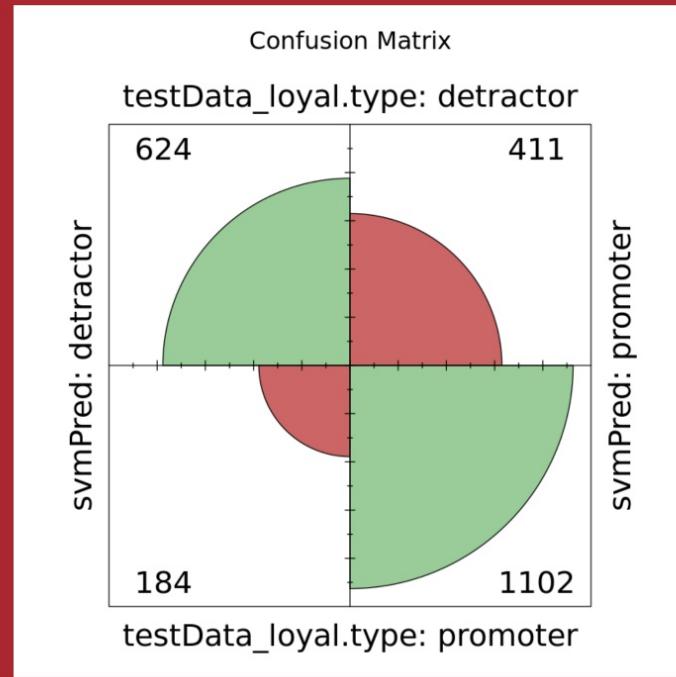




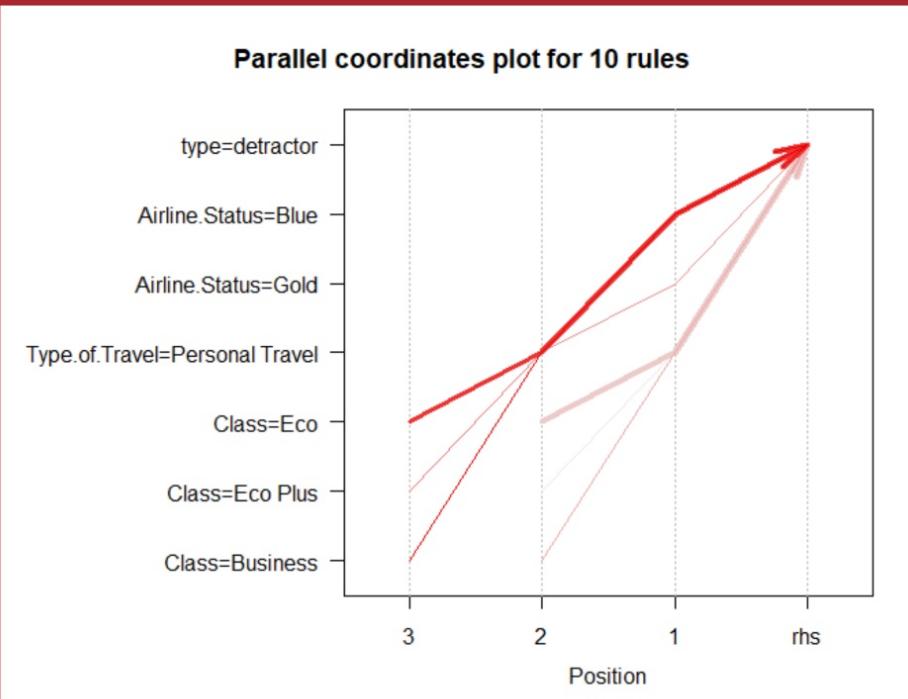




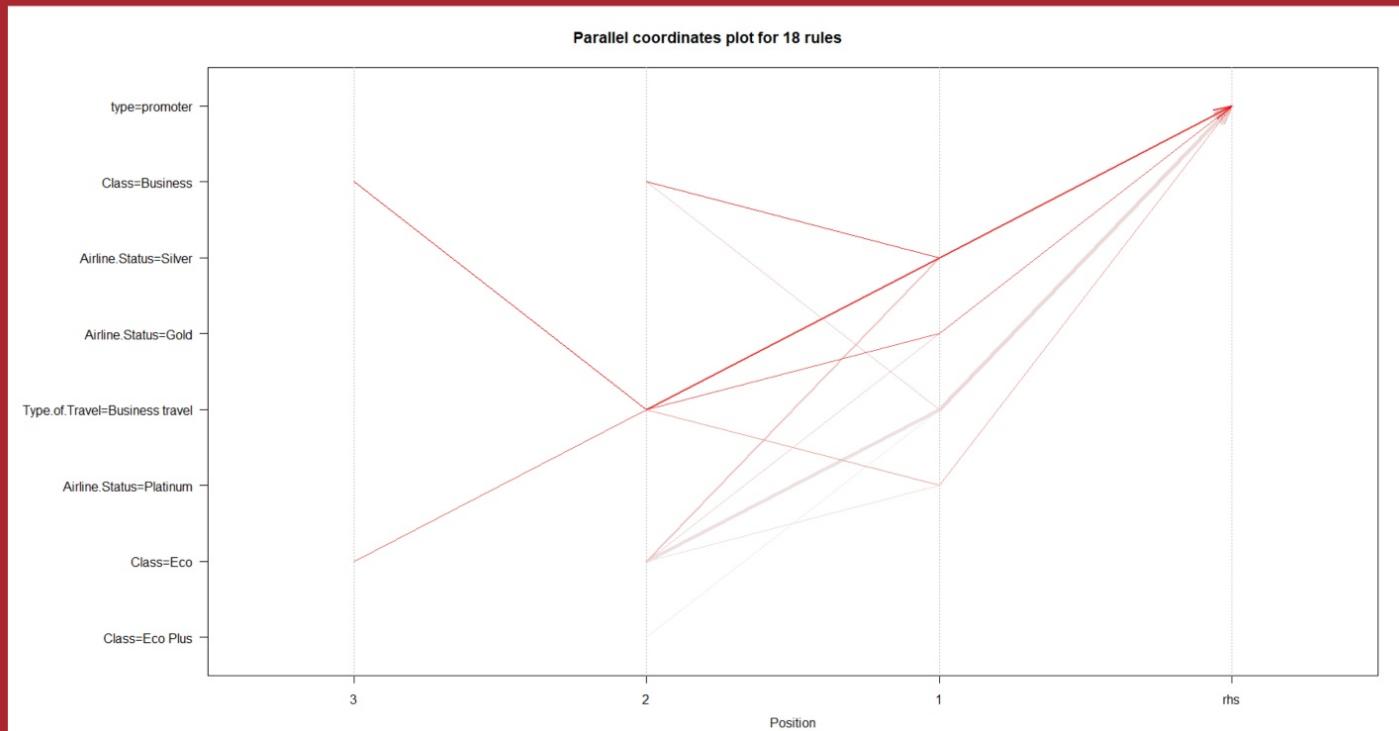




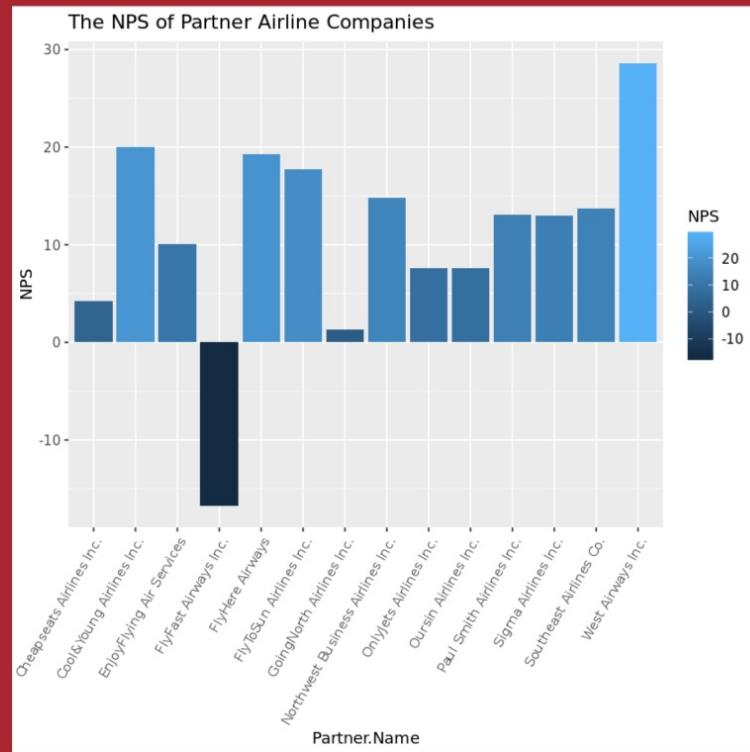
Potential Detractor Portrait



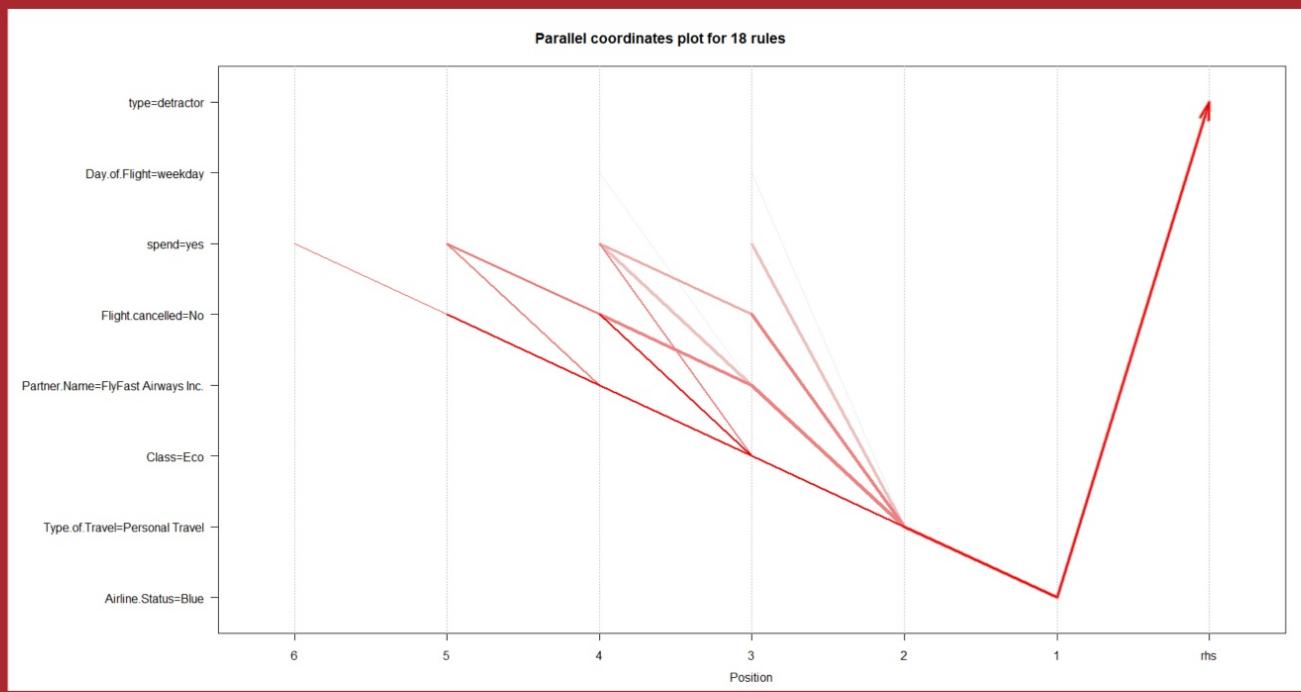
Potential Promotor Portrait



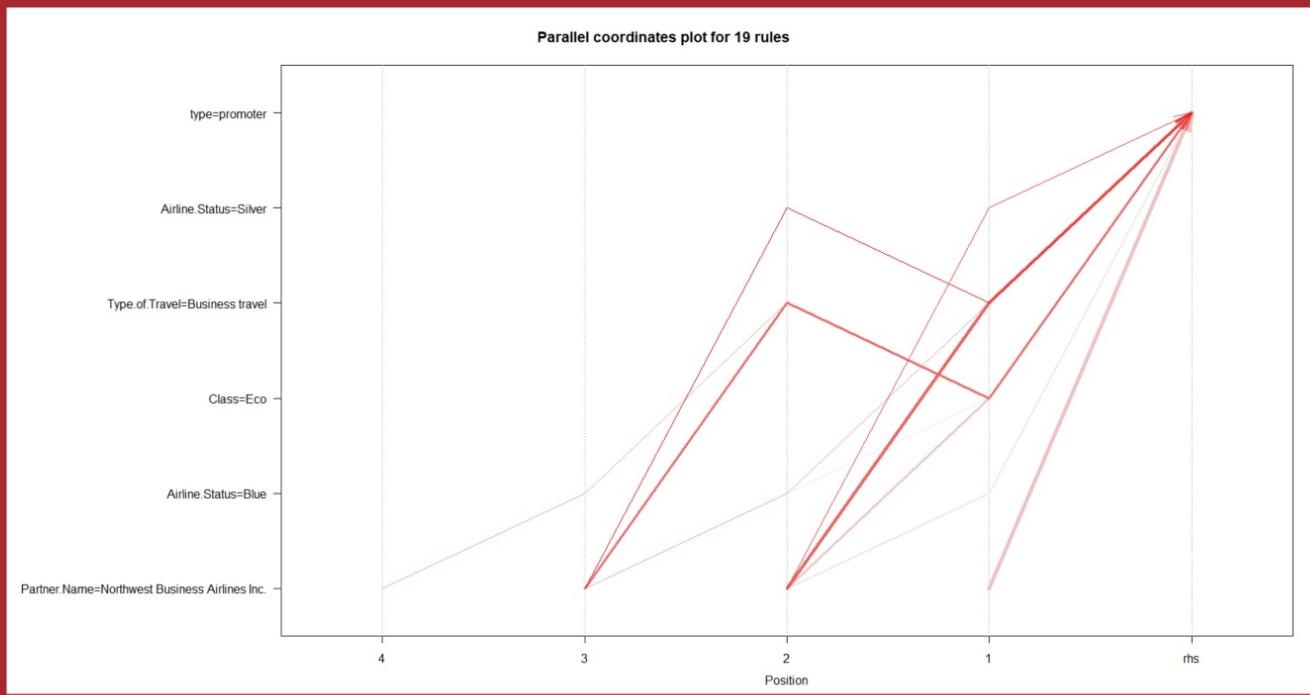
Good and Bad Partner Airlines



Flyfast



Northwest

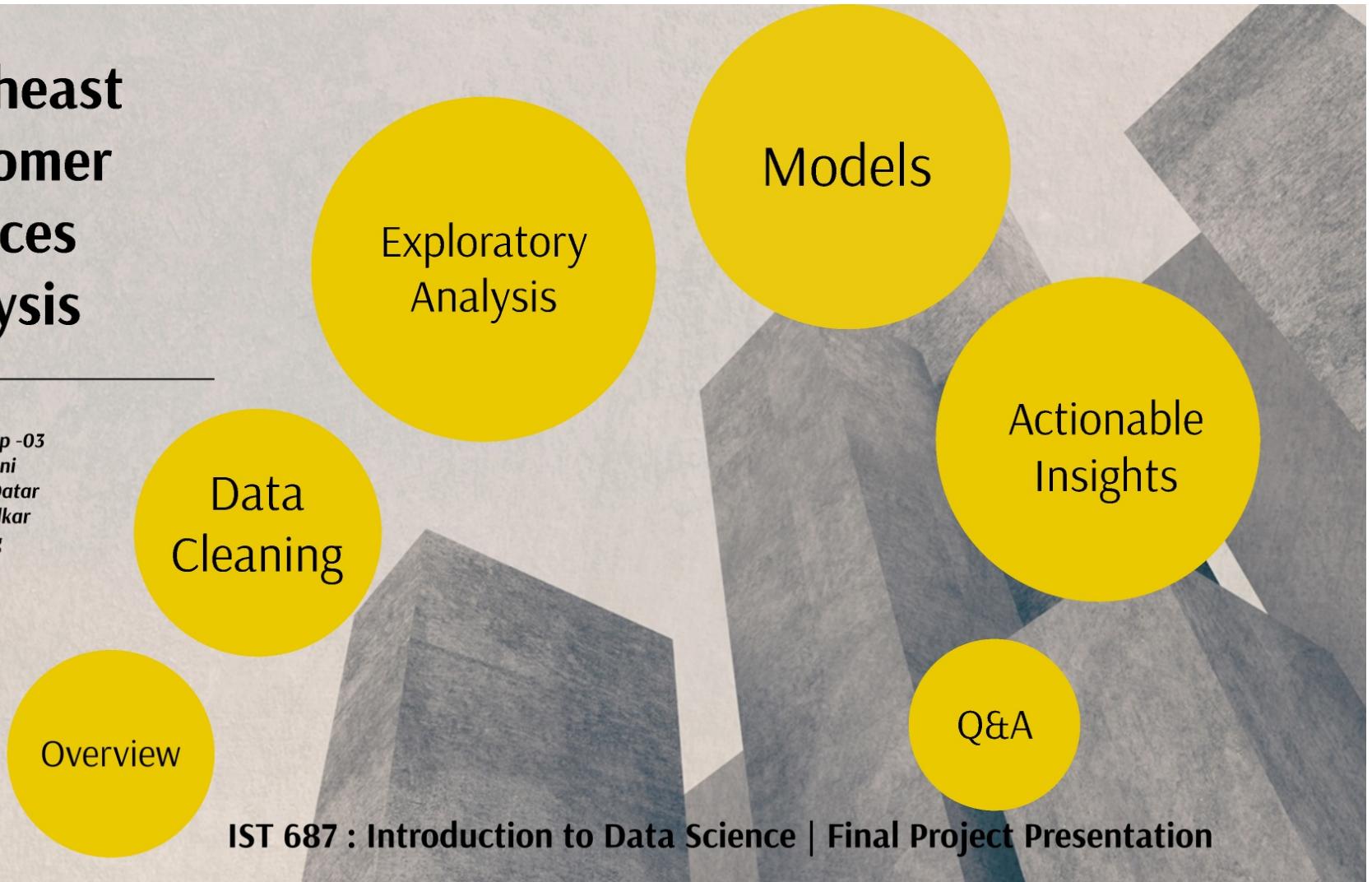


Model Performance Compare

Models	Performance
Linear Regression	R Square: 0.09
Logistic Regression	Accuracy rate: 0.83
SVM	Accuracy rate: 0.74
Association Rule Mining	Good for interpretation

Southeast Customer Services Analysis

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Insights

1

2

3

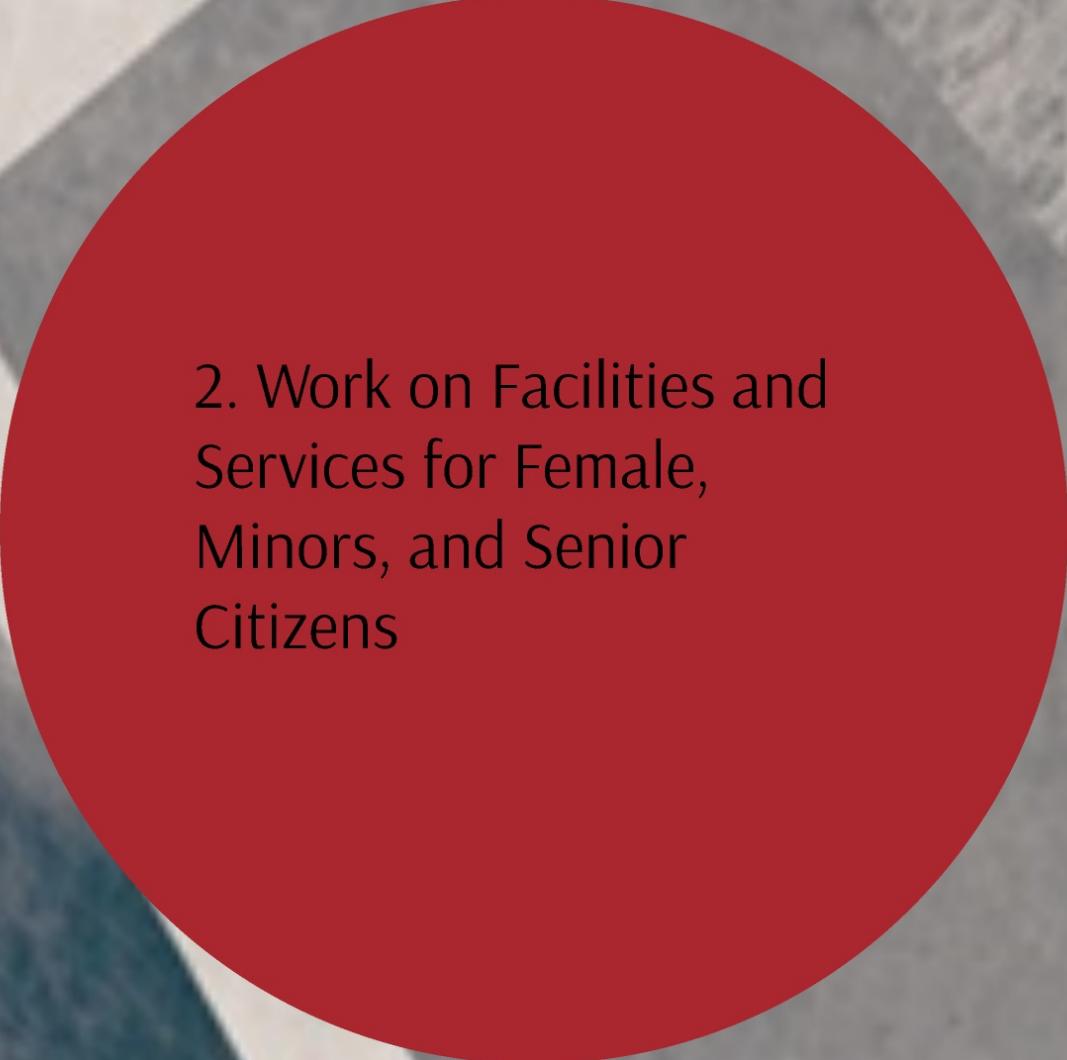
4

5

Overall



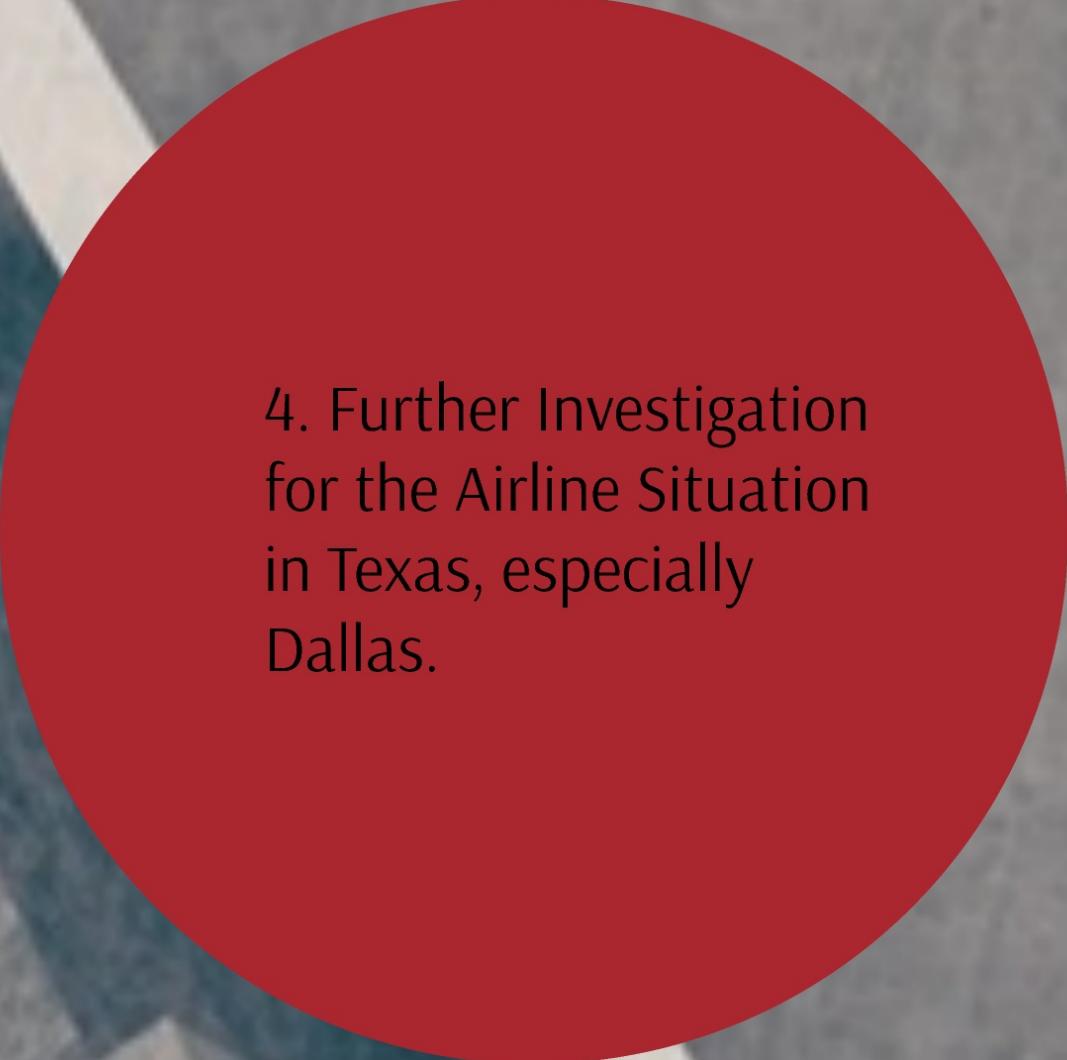
1. Improve Customer Service, such as luggage handling and leg room



2. Work on Facilities and
Services for Female,
Minors, and Senior
Citizens



3. Improve Facilities
and Services for
Customers who are on
Personal Travel, in Blue
Airline Status, or in Eco-
Class.



4. Further Investigation
for the Airline Situation
in Texas, especially
Dallas.

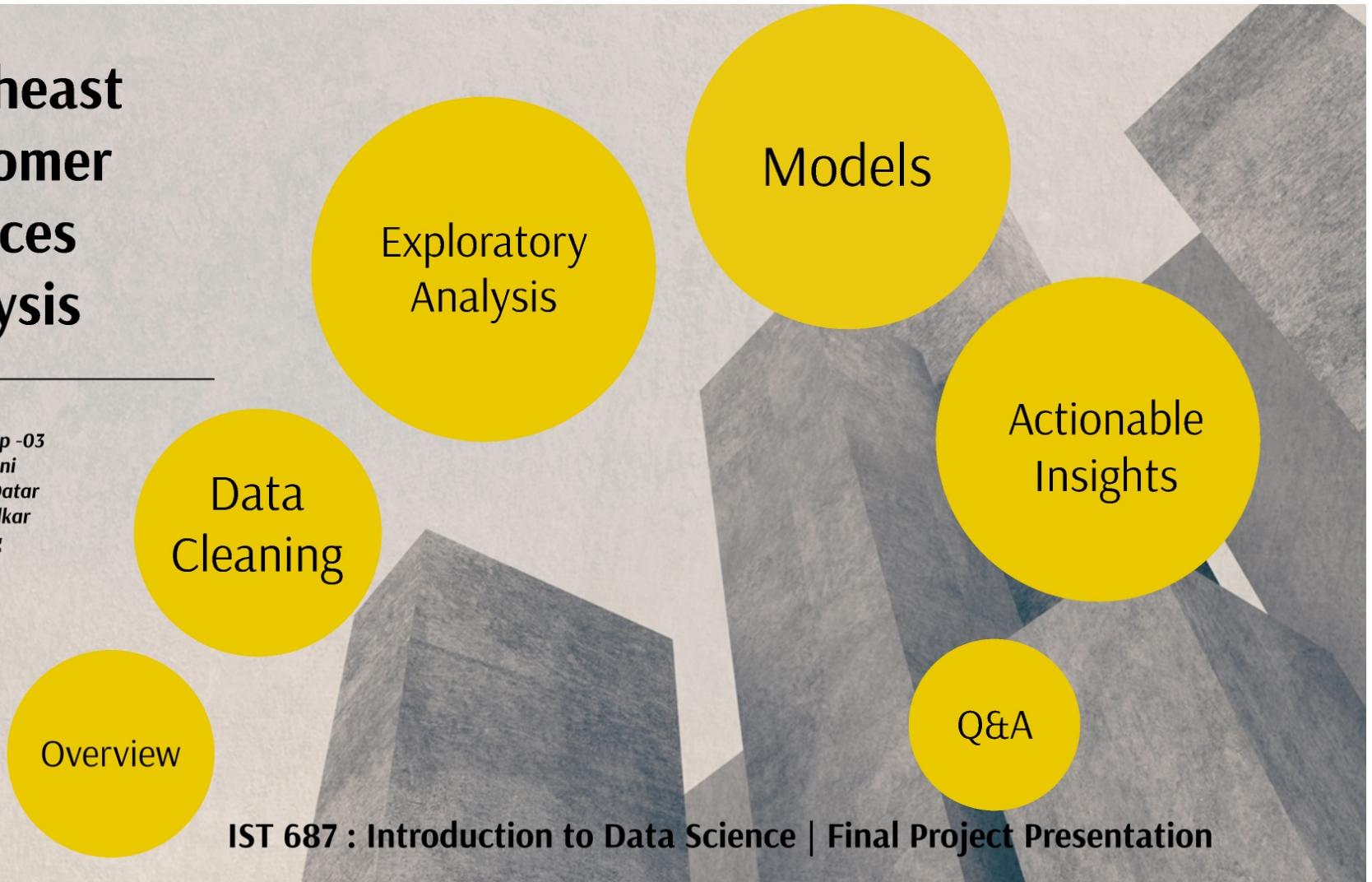


5. Investigate the air routes with FlyFast as the Partner Airlines

Detractor	Promoter
Customer Service in terms of leg room, luggage handling and overall experience	Customer Service in the way they handle Business Class
Work on facilities and Services for Female, Minors and Senior Citizen	Retain the similar customer service for Male Adults
Improve facilities and services for Customers who fly with Blue Airline Status, Eco Class and Personal Travel	Try to maintain the same quality of service such as for Silver Airline Status, Business Class and Business Travel Customers
Investigate the situation with Flights in Texas especially Dallas and Houston.	Airline can look at Virginia or Chicago and then try to replicate similar customer service throughout other cities and states
Investigate FlyFast Airways and if the situation does not improve discontinue their association with SouthEast Airlines	Increase Association with Airlines like Northwest Business Airlines Inc. which have a good customer reputation

Southeast Customer Services Analysis

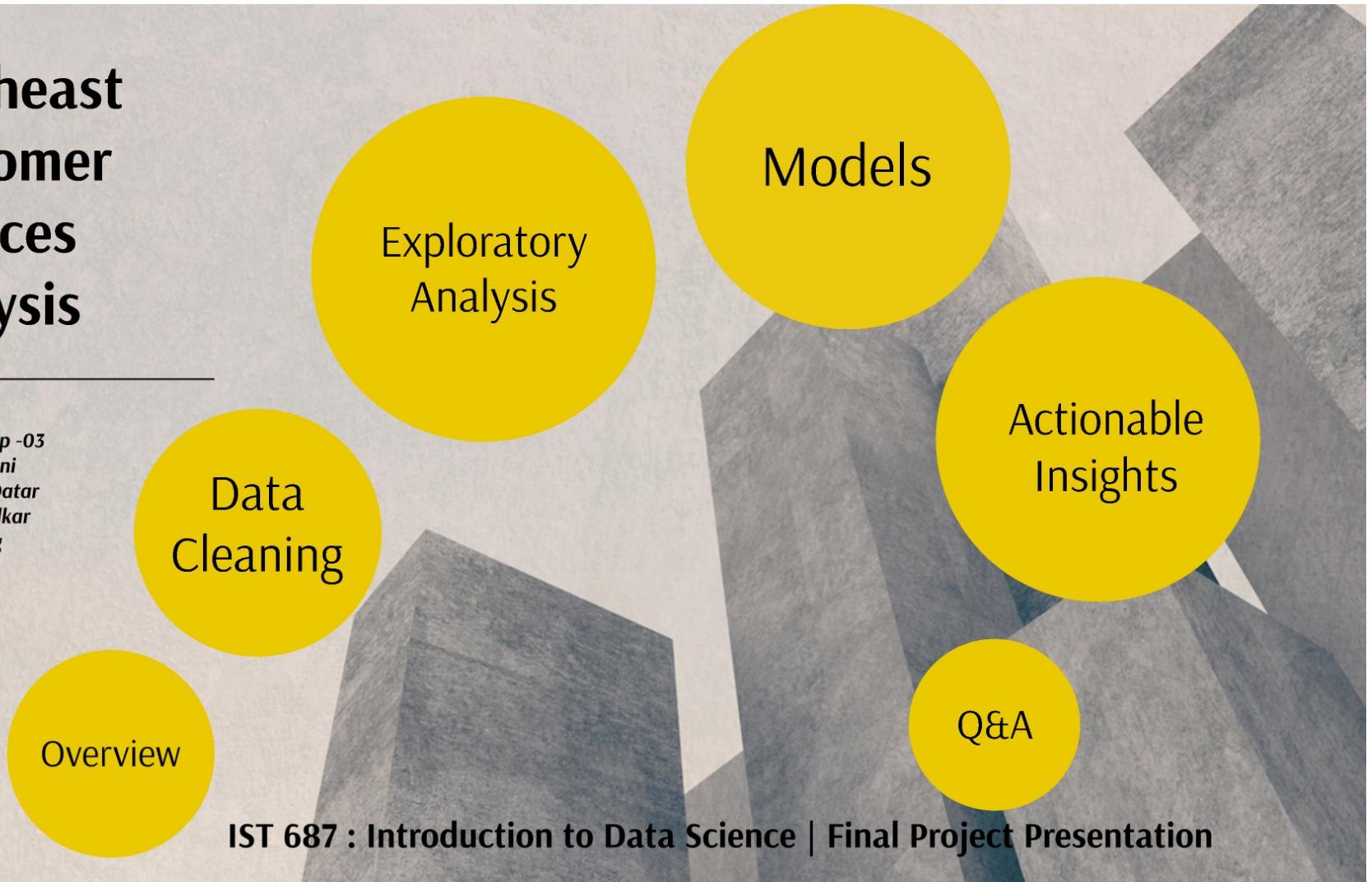
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