



Objectives and Long-term Goals



- ✓ Identify potential customers in Dallas area for SMU football
- ✓ Gather a comprehensive understanding on existing customers and their purchasing behavior

- Grow SMU fan base in Texas
- Improve attendance rate for single ticket and seasonal ticket buyers



Data Source



Ticketmaster System

- Seasonal ticket buyers data (5 datasets)
- Single ticket buyers data (32 datasets)
- Attendance Data (31 datasets)



American Survey Community

- Census Data



SMU Admission Office

- Student Data



Other Source

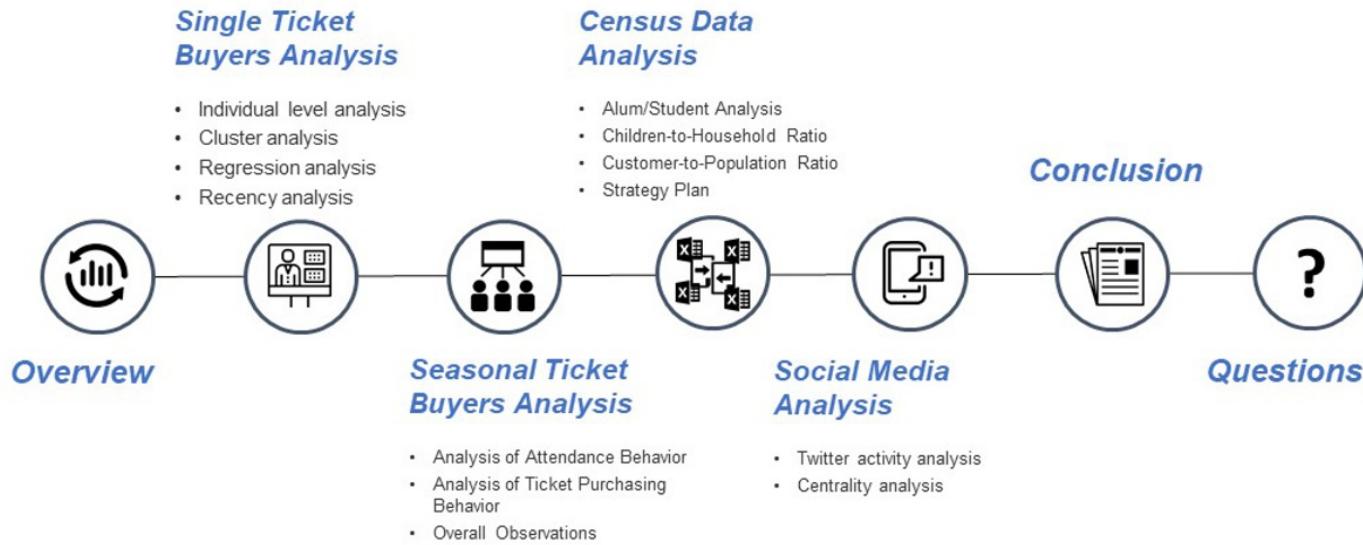
- Alumni Data
- Game Data
- Social Media Data



Key Metrics and Methodology

- Attendance Rate
- Recency: the most recent time that the customer bought tickets
- Frequency: how many games the customer has bought tickets
- Monetary Value
- Income Level
- Centrality: how important one account in the twitter network

Agenda



SMU Overview

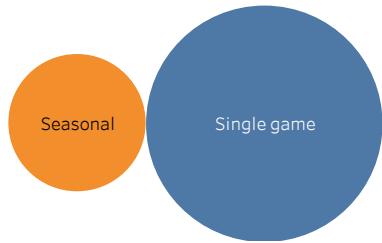
Total Game

Year

31

5

Total Unique Account ID

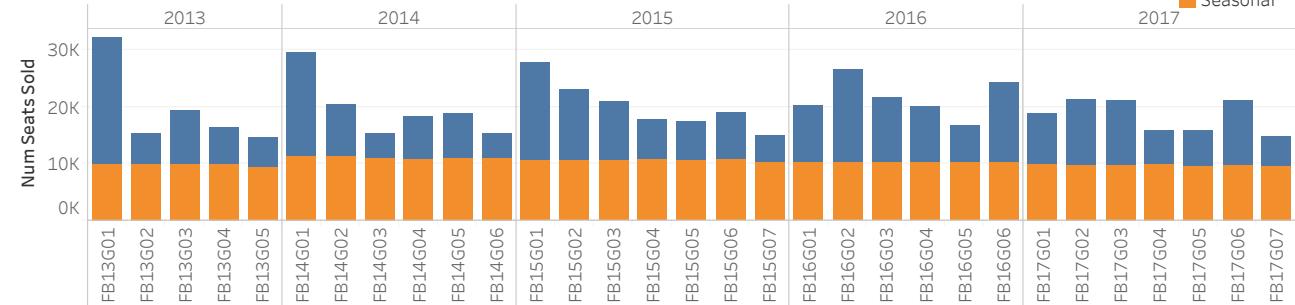


Team

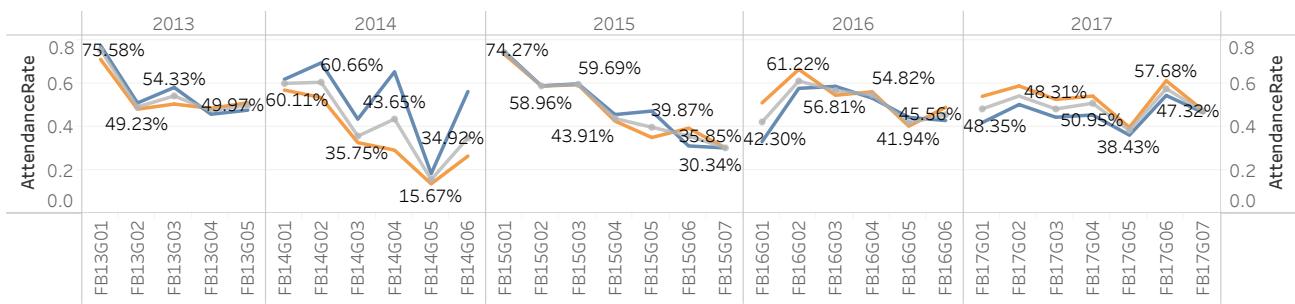


Ticket Type
Single game
Seasonal

Total ticket sold for each game

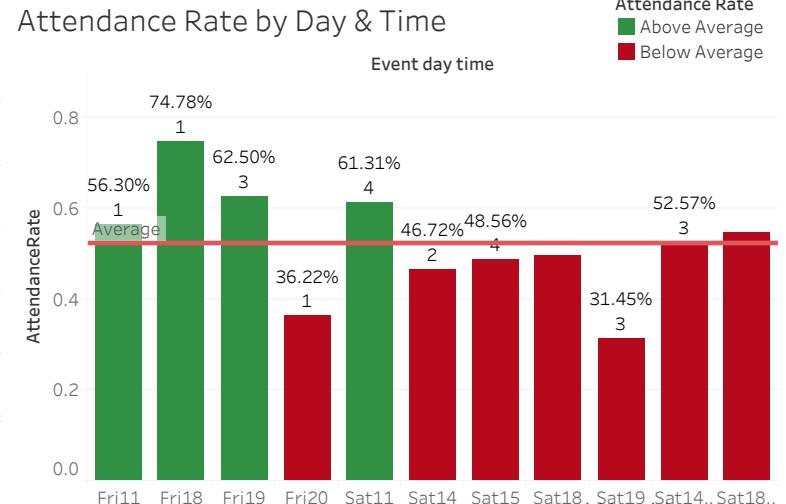
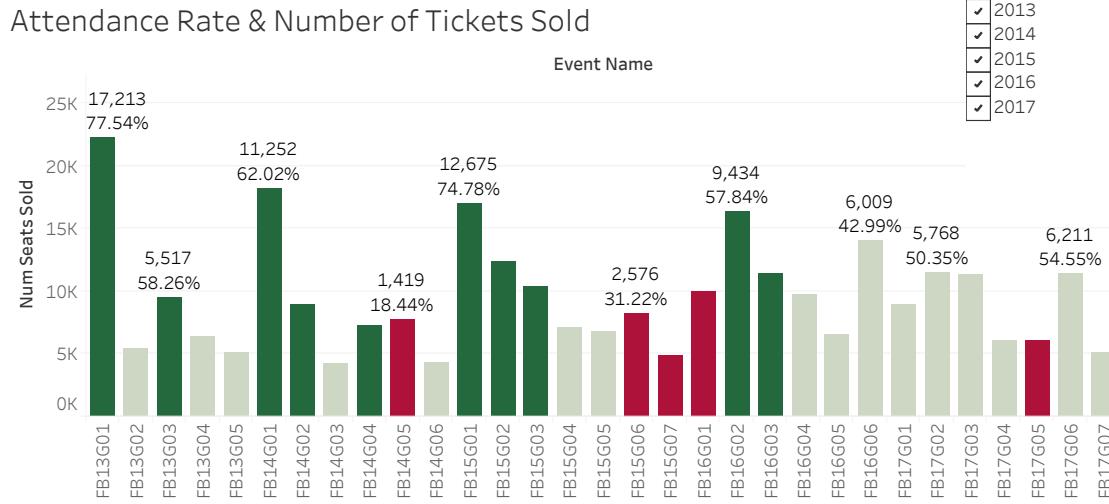


Attendance rate for each game





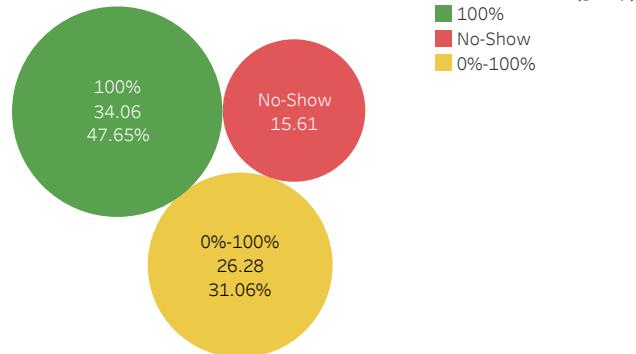
Game-Level Descriptive Analysis





Individual-Level Attendance Analysis

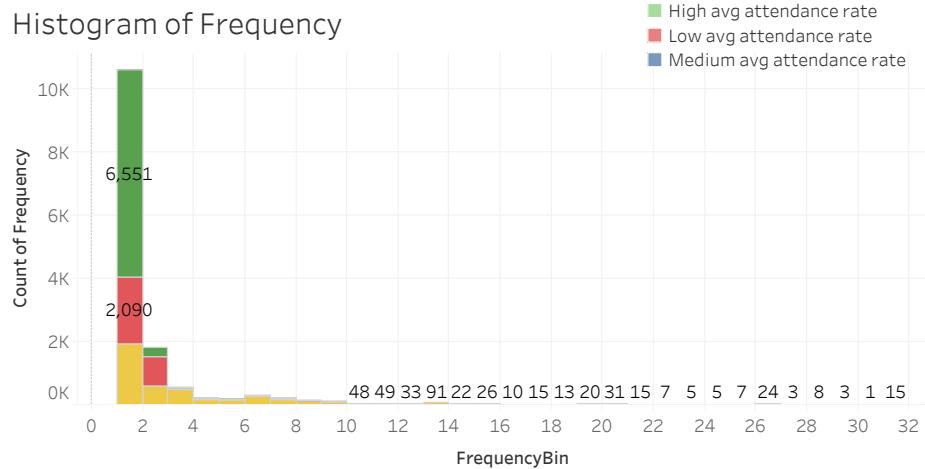
Segments by Attendance Rate



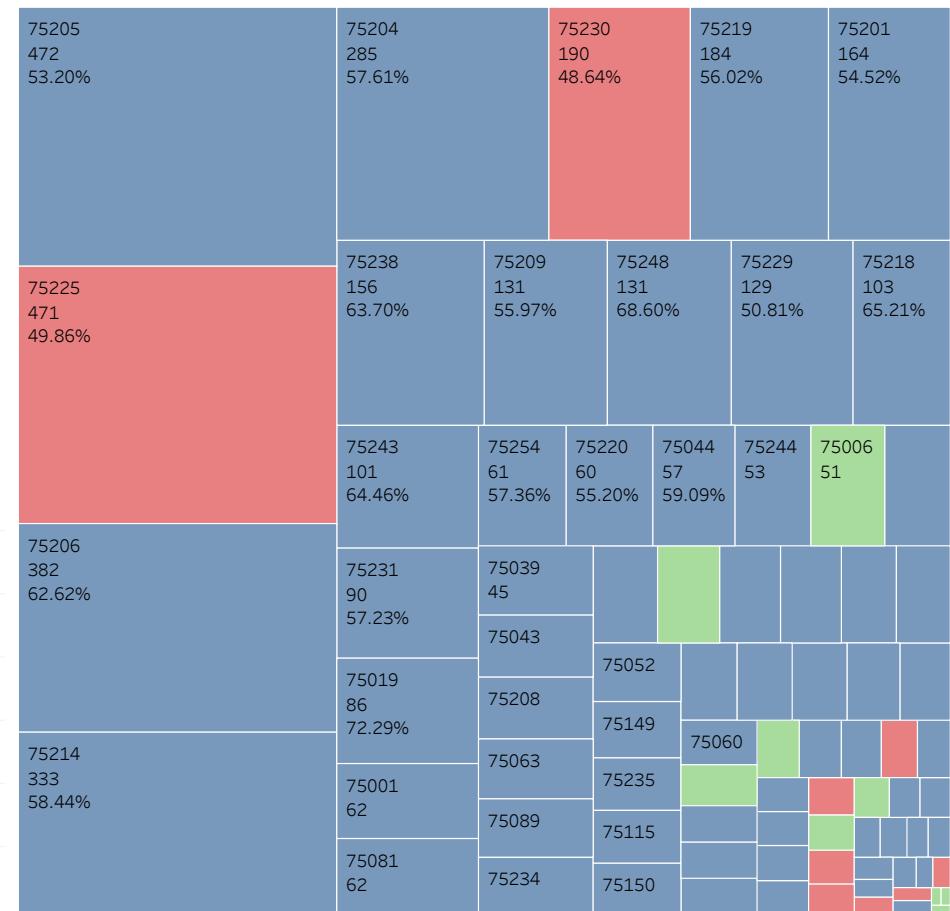
Attendance Rate (group)

- 100%
- No-Show
- 0%-100%

Histogram of Frequency



Attendance Rate by Zipcode





High Monetary Value & No-Show Customers

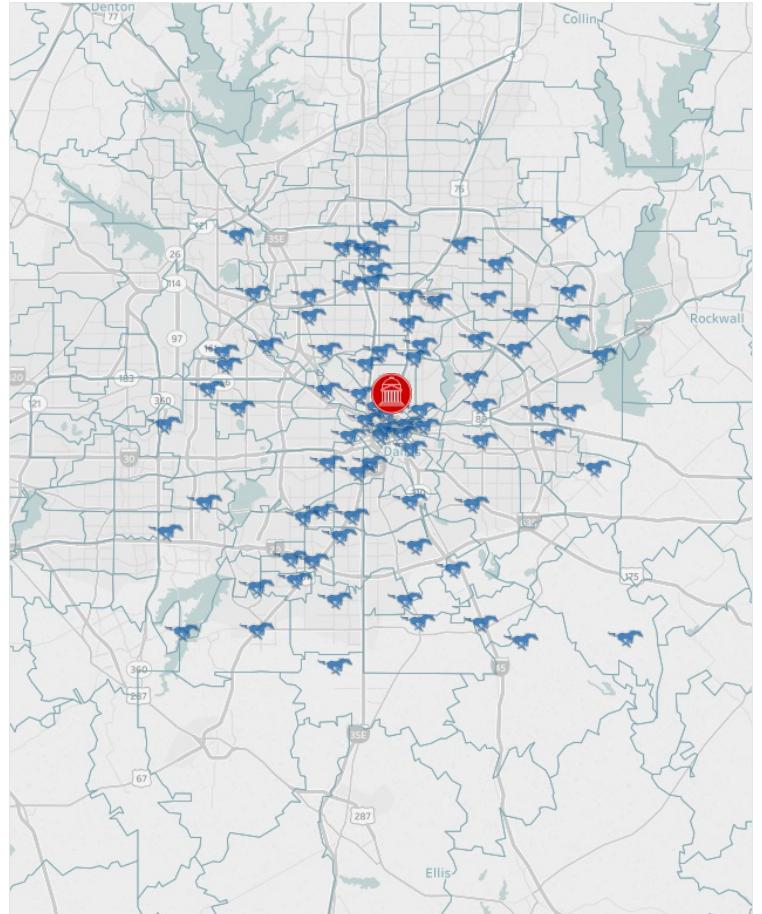
Top N High Monetary Value Customers



Customer Information

Acct Id	Zipcode	Frequency	NumOfPurchase
911	75205	15.0	107.0
517793	75206	31.0	66.0
553163	75206	31.0	65.0
448538	75204	26.0	68.0
282055	75234	31.0	63.0
571395	75225	31.0	59.0
1105635	75254	28.0	51.0
552344	75223	21.0	56.0
1160317	75205	26.0	49.0
531235	75225	27.0	48.0
852020	75238	19.0	54.0
638300	75225	31.0	41.0

Where Our Customers Locate





Low Monetary Value Customers with 100% Attendance Rate

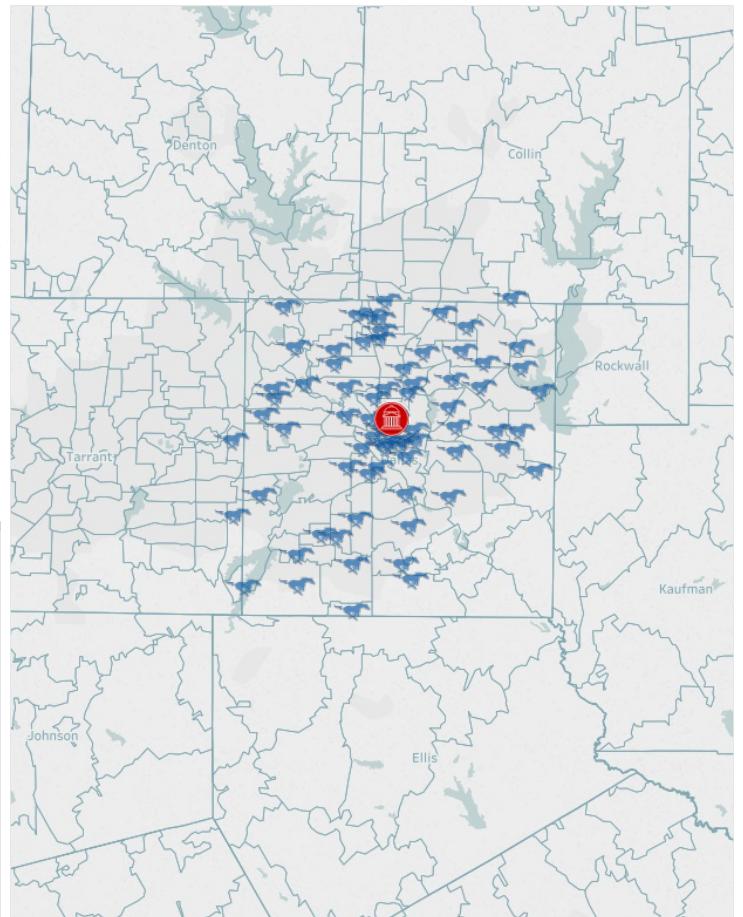
Customers w/ Lowest Monetary Value



Customer Information

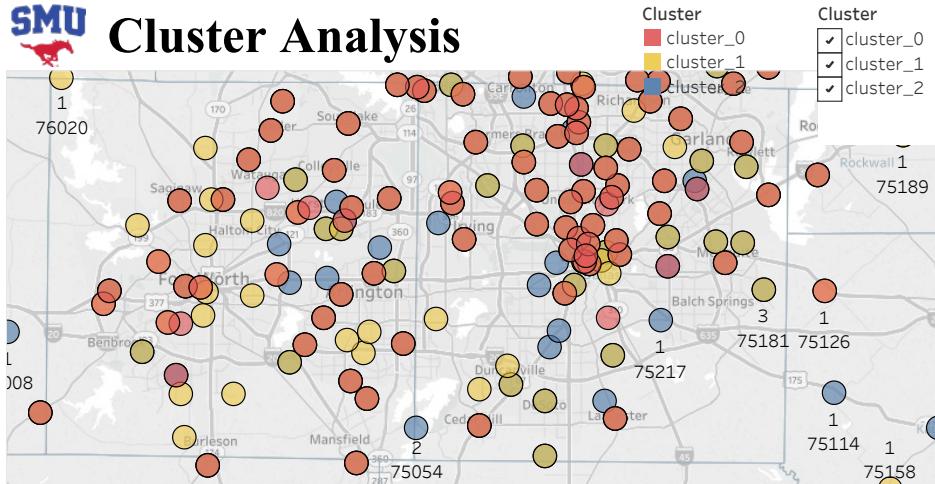
Acct Id	Zipcode	Frequency	NumOfPurchase
56	75252	6	9
133	75225	14	31
139	75246	13	13
911	75205	15	107
120329	75206	3	3
123489	75205	4	4
128510	75230	3	3
133264	75225	7	8
136749	75219	7	14
138413	75225	4	4
140953	75254	9	17
146807	75219	1	1
148972	75214	11	12
152593	75229	8	8
152642	75243	3	3
180780	75238	13	27

Where Our Customers Locate

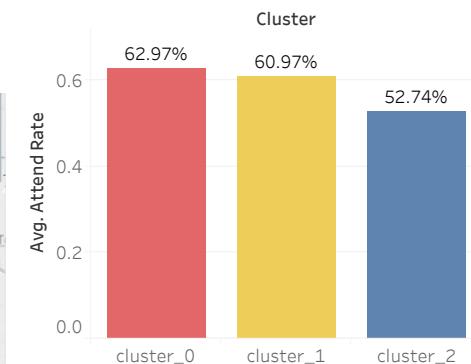




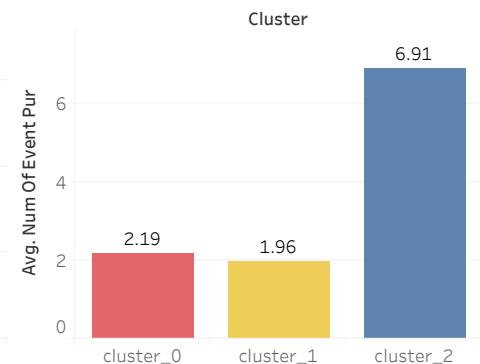
Cluster Analysis



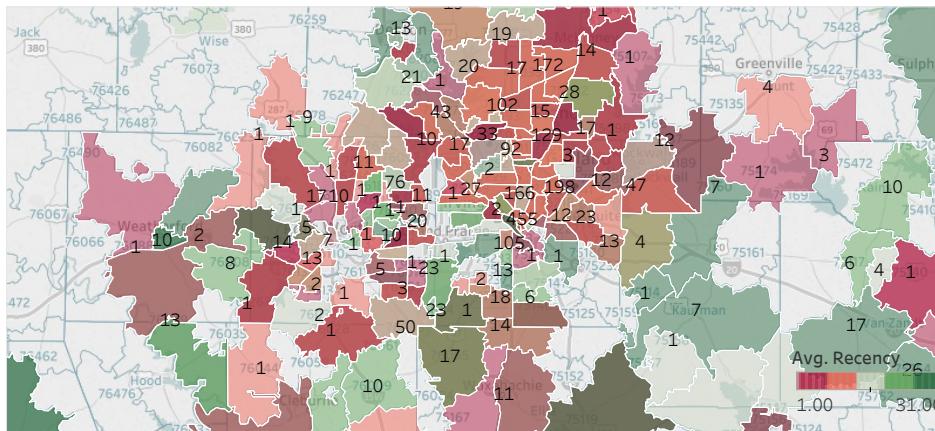
Attendance Rate



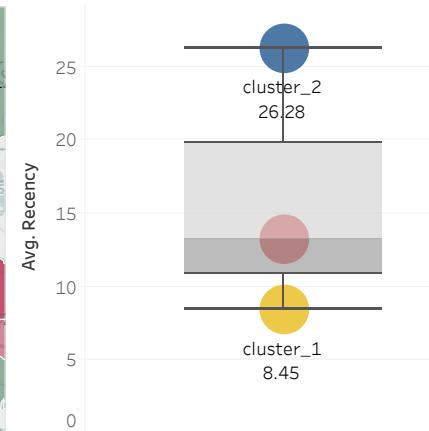
Frequency



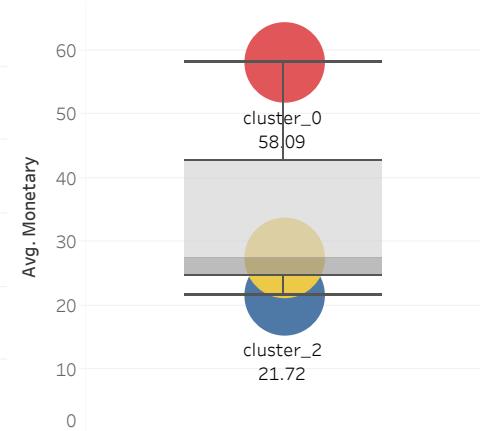
Recency Map



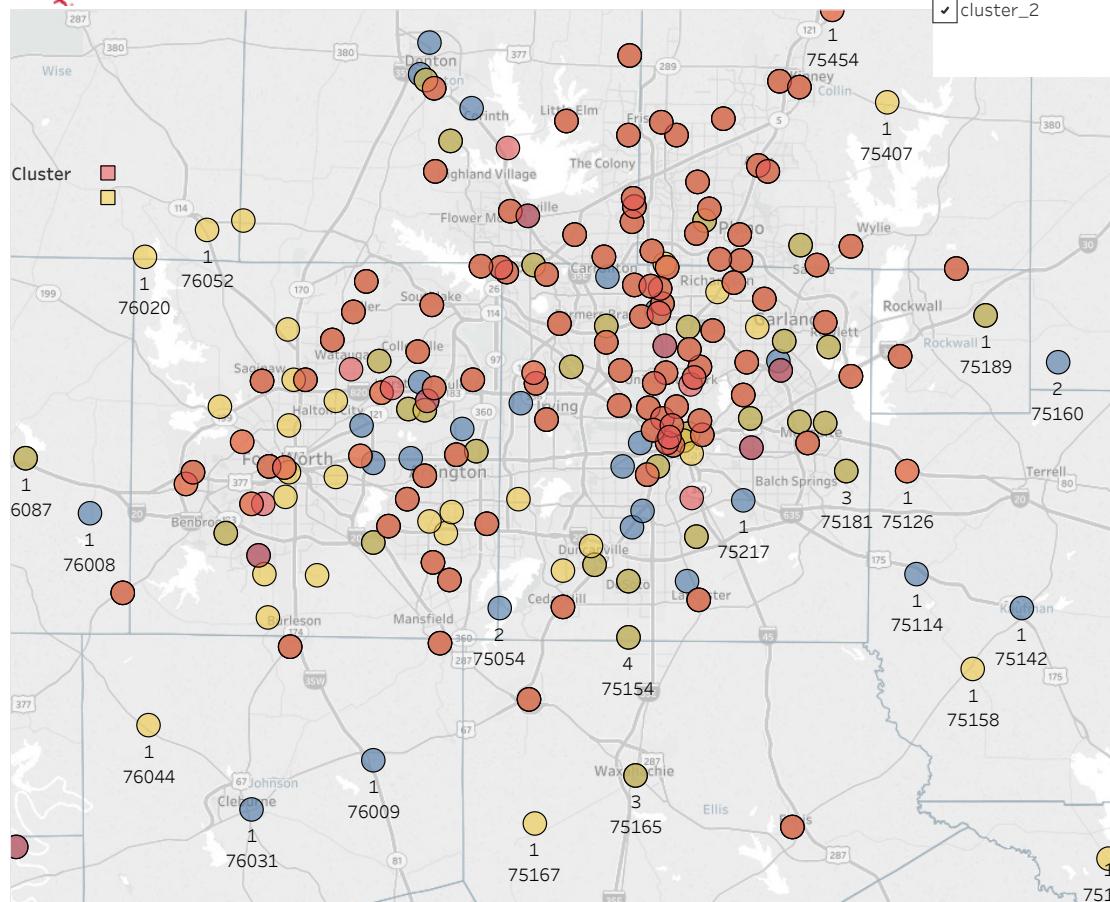
Recency



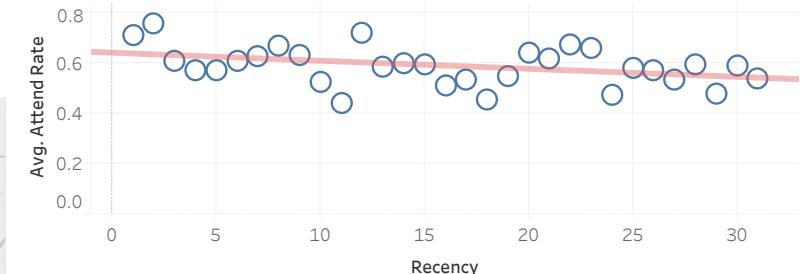
Monetary Value



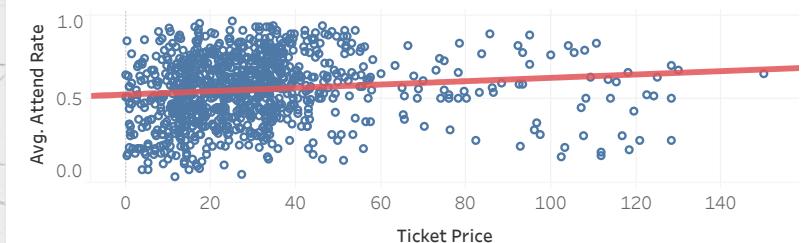
SMU Cluster Analysis



Attendance Rate vs. Recency



Attendance Rate vs. Price

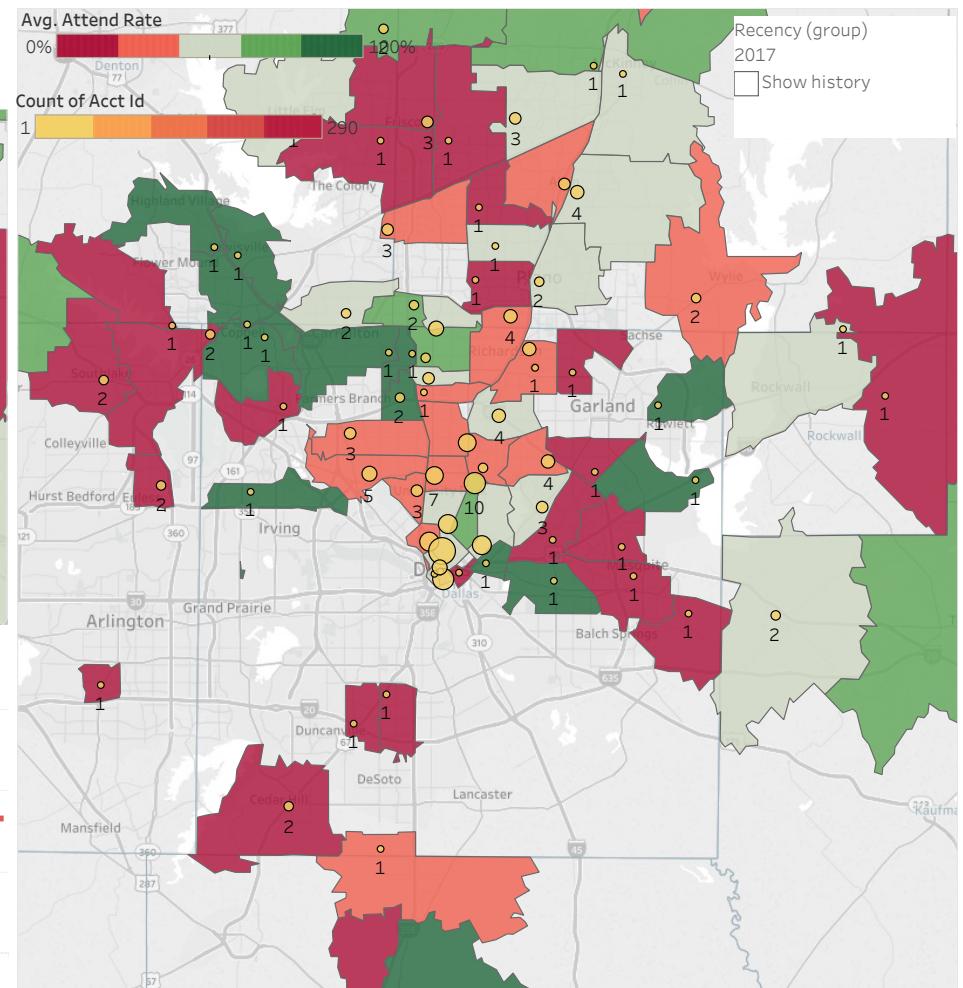
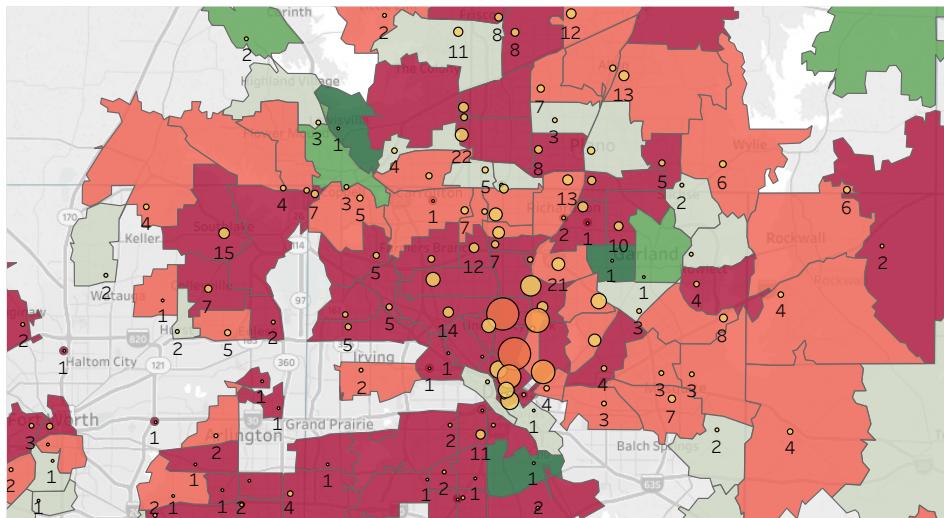


Attendance Rate vs. Frequency

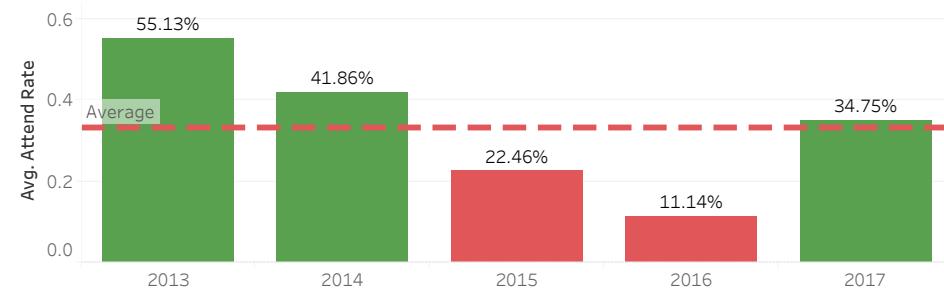




Free Tickets Analysis



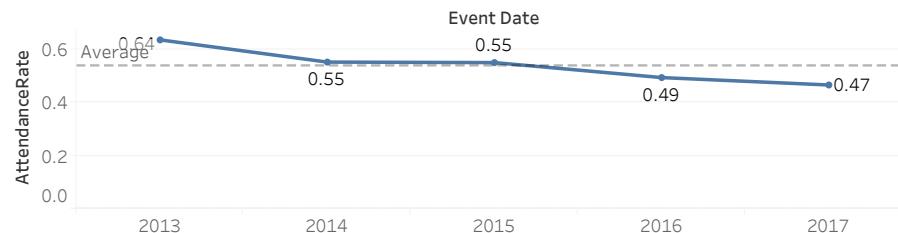
Attendance Rate by Year





Attendance Rate Analysis

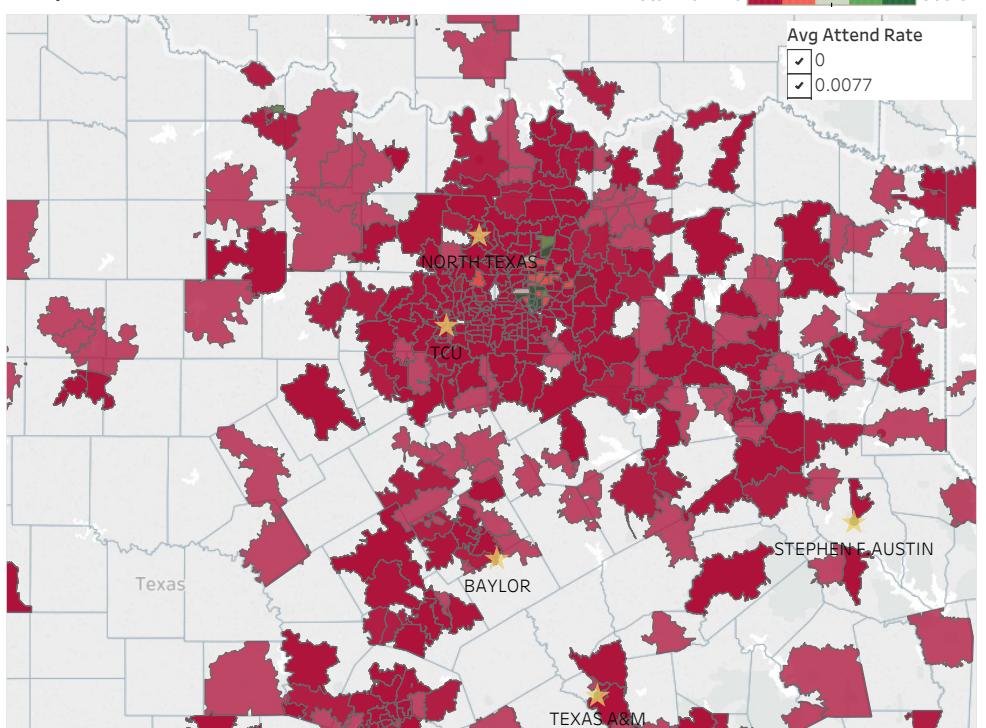
Average Attendance Rate for Each Year



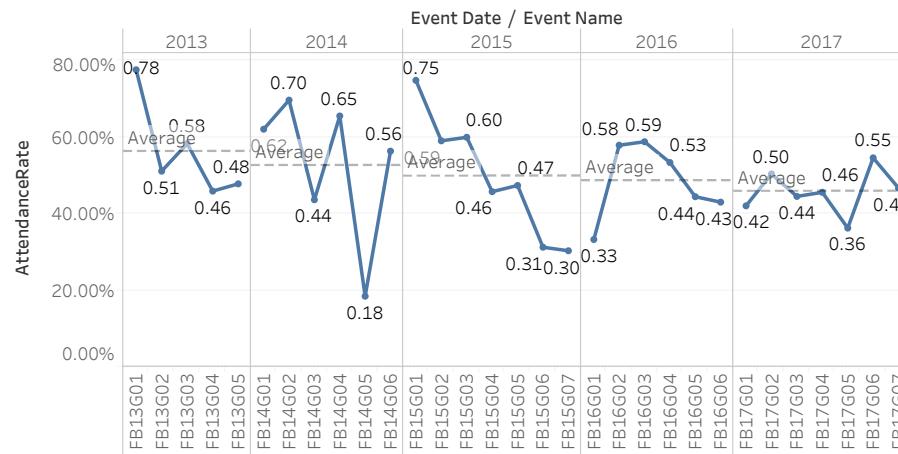
Ticket information

Game information

Map for total ticket sold



Average Attendance Rate for Each Game

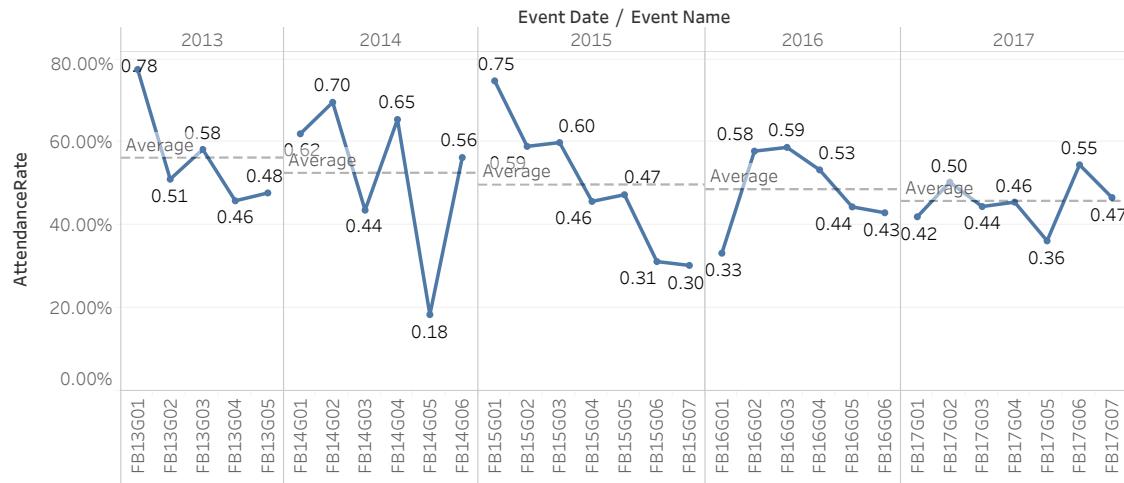


The trend of AttendanceRate for Event Name broken down by Event Date Year. The marks are labeled by AttendanceRate. The data is filtered on Action (Team1,Team zip,Zip), which keeps 8,576 members. The view is filtered on Action (YEAR(Event Date)), which keeps 5 members.



Regression Analysis for Attendance Rate

Average Attendance Rate for Each Game



```

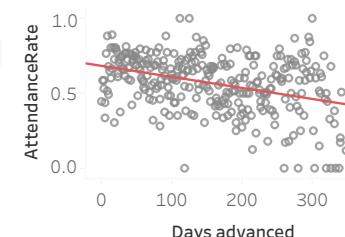
## Call:
## lm(formula = Attend ~ Total_Ticket_Sold + Ave_ticket_price +
##     Family_weekend + Homecoming + Weather + Repeat_buyer + Days_advanced,
##     data = reg)
##
## Deviance Residuals:
##    Min      1Q   Median      3Q     Max
## -2.190 -0.457  0.163  0.351  0.742
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.89e-01 1.57e-02 12.09 <2e-16 ***
## Total_Ticket_Sold 3.94e-04 3.67e-05 10.73 <2e-16 ***
## Ave_ticket_price 5.35e-03 1.24e-04 43.12 <2e-16 ***
## Family_weekend 2.88e-02 7.11e-03 4.05 5e-05 ***
## Homecoming 9.84e-02 7.72e-03 12.75 <2e-16 ***
## Weather 5.06e-03 1.75e-04 28.87 <2e-16 ***
## Repeat_buyer -1.69e-01 6.03e-03 -28.04 <2e-16 ***
## Days_advanced 1.80e-04 2.95e-05 6.11 1e-09 ***
## ...
```

```

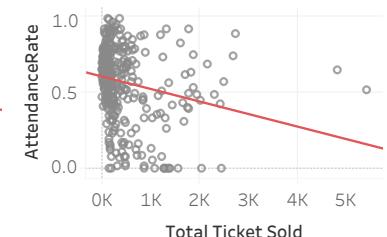
## Call:
## lm(formula = Avg_Attend_Rate/100 ~ Total_Ticket_Sold + Ave_ticket_price +
##     Family_weekend + Homecoming + Weather + Repeat_buyer + Days_advanced,
##     data = reg1)
##
## Residuals:
##    Min      1Q   Median      3Q     Max
## -0.8743 -0.0947  0.0796  0.1468 1.3399
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 7.47e-01 1.01e-02 74.28 < 2e-16 ***
## Total_Ticket_Sold -3.28e-04 1.94e-05 -16.96 < 2e-16 ***
## Ave_ticket_price 8.67e-04 7.68e-05 11.29 < 2e-16 ***
## Family_weekend 1.78e-02 4.16e-03 4.29 1.8e-05 ***
## Homecoming 1.18e-02 4.48e-03 2.64 0.0083 **
## Weather 1.62e-03 1.12e-04 14.47 < 2e-16 ***
## Repeat_buyer -7.99e-02 3.47e-03 -22.98 < 2e-16 ***
## Days_advanced 7.56e-05 1.82e-05 4.16 3.1e-05 ***
## ...
```

Regression Results

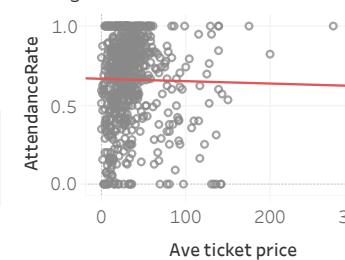
Purchased Days Advance



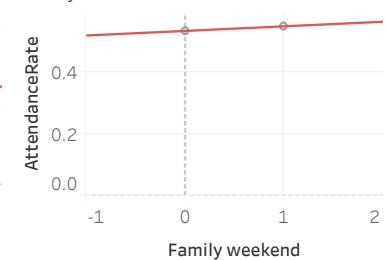
Total Ticket Purchased



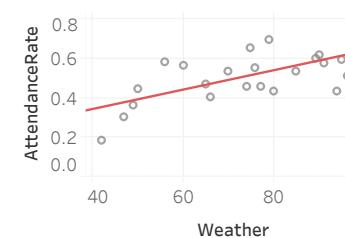
Average Ticket Price



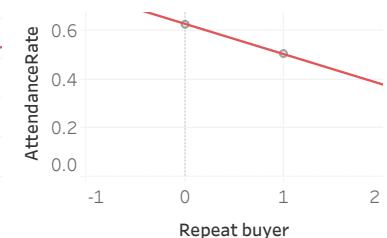
Family Weekend



Weather

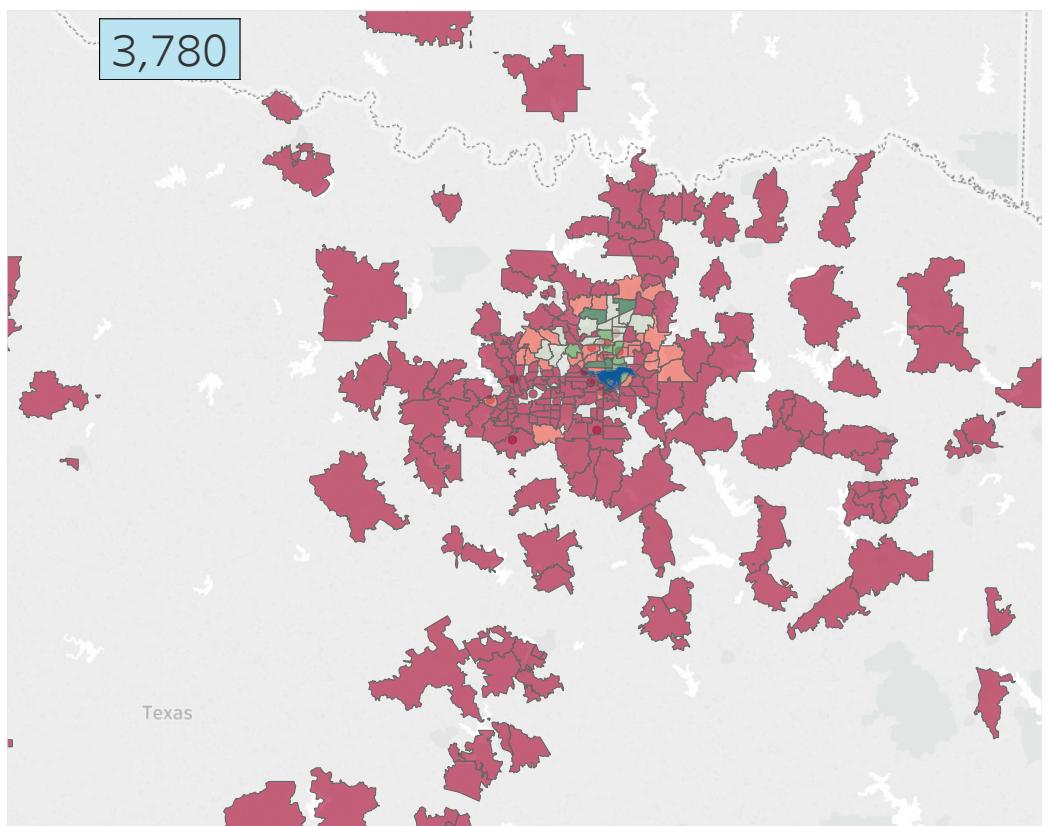


Repeat Buyers



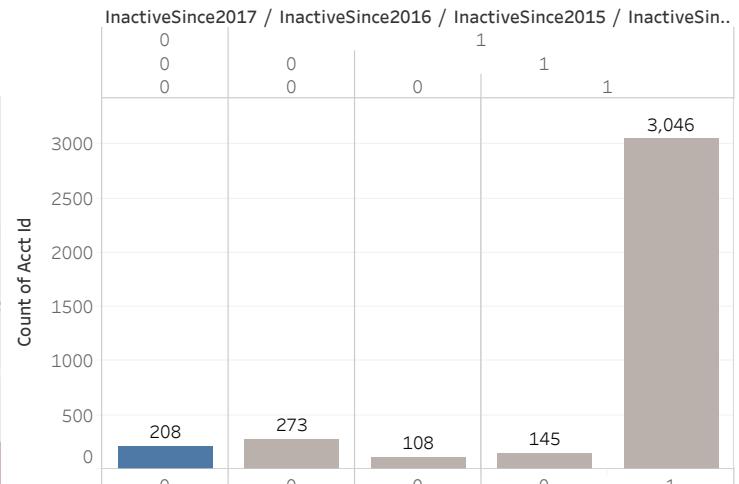
SMU Recency Analysis

Number of People in Each Zipcode



AcquireAt2017, AcquireAt..
0, 0, 0, 0, 1
 Show history

Number of people inactive



FB2013
 0
 1
 2
 3
 4
 5

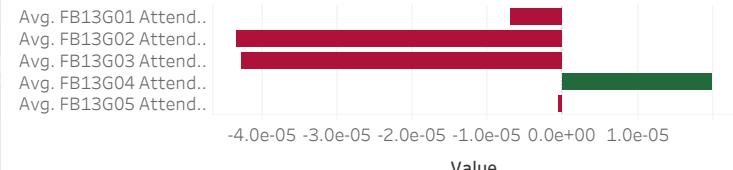
AcquireAt20..
 0
 1

In/Out of Hi..
 In
 Out

Summary for 2013 acquired people

Number of People	Total Ticket Sold	Average Price per Ticket
3,780	48,512	\$30.36

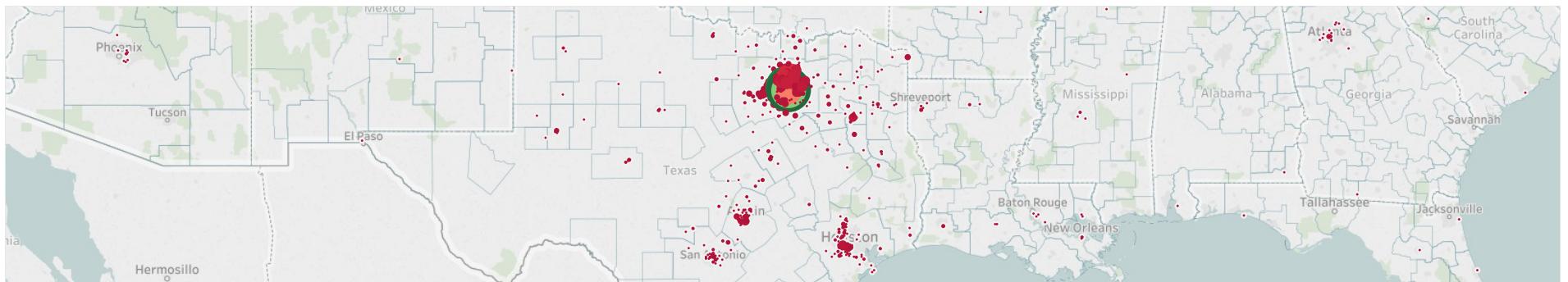
Attendance Rate Difference for 2013



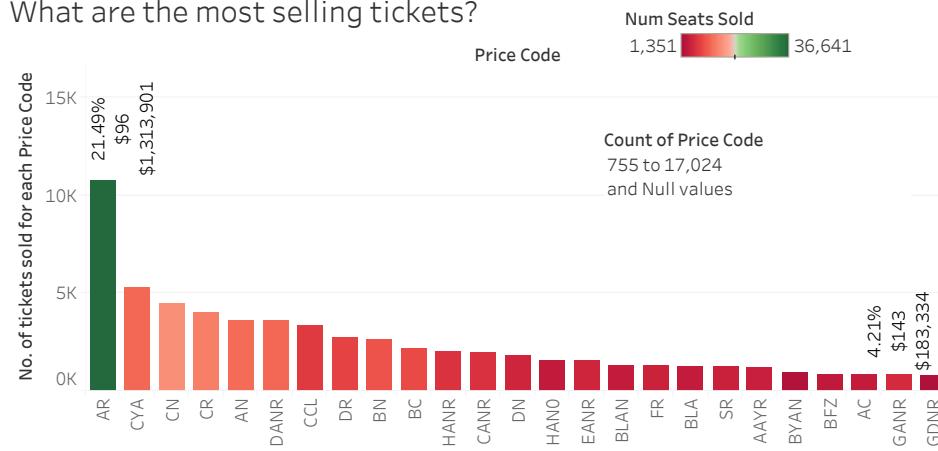


Where do fans come from?

Where do fans come from?



What are the most selling tickets?

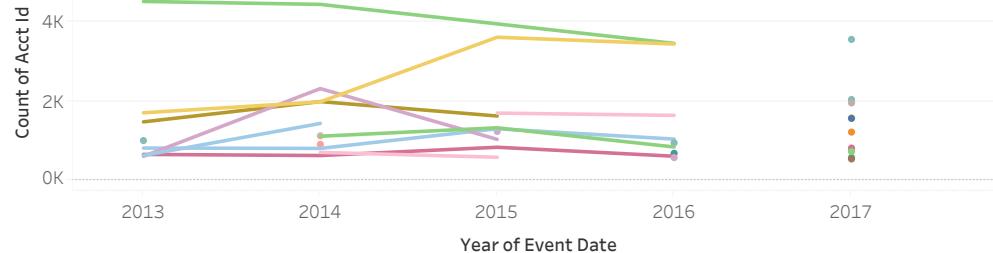


What kind of ticket types are most sold?

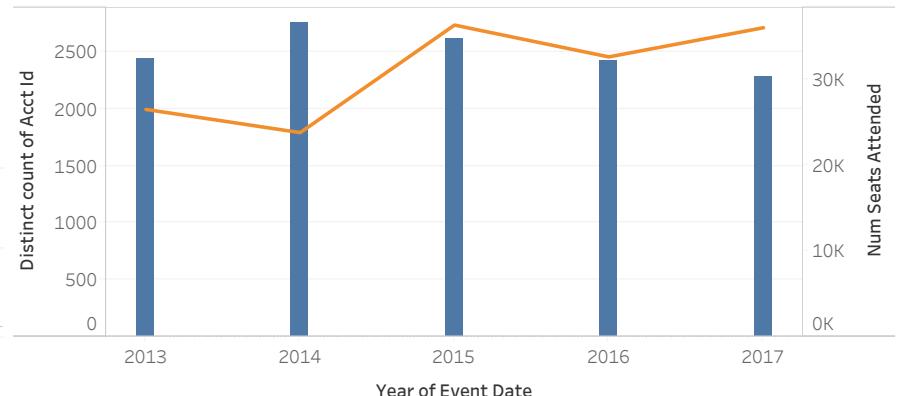


SMU Attendance Analysis

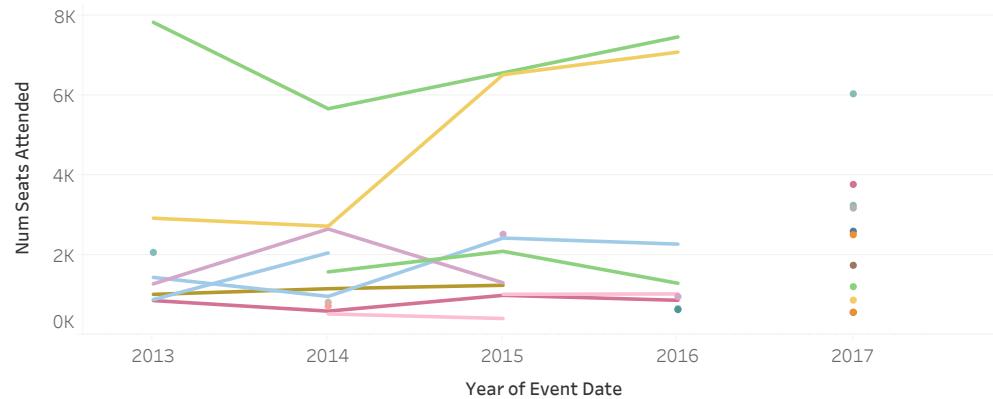
Trend of sales for the different tickets colored by price codes



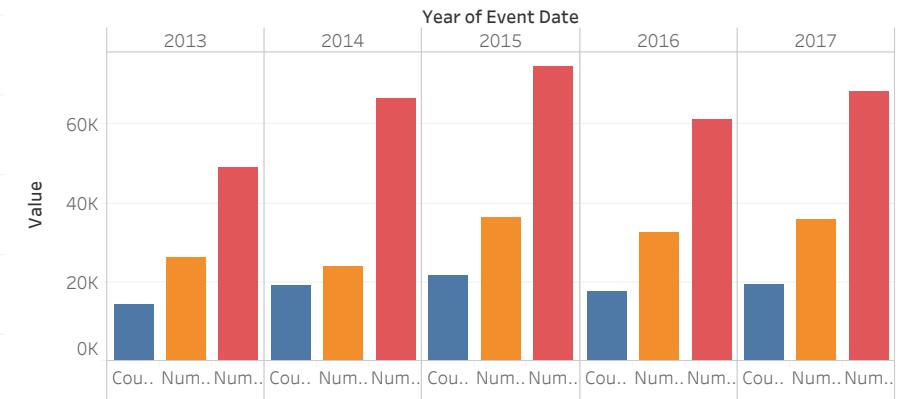
Trend of tickets sold and attendance



Trend of attendance for the different tickets colored by price codes

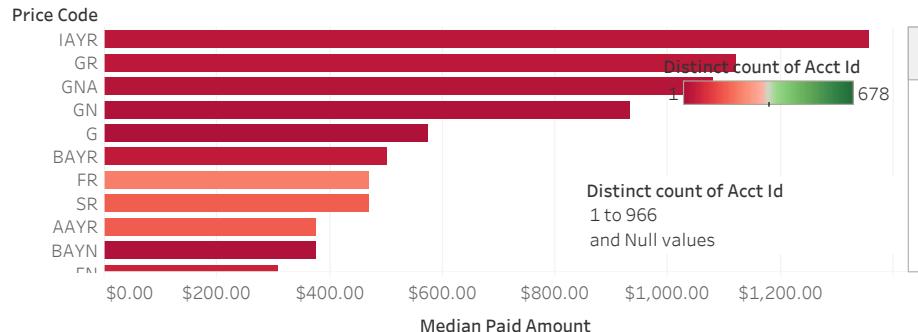


What fraction of seats filled every year?

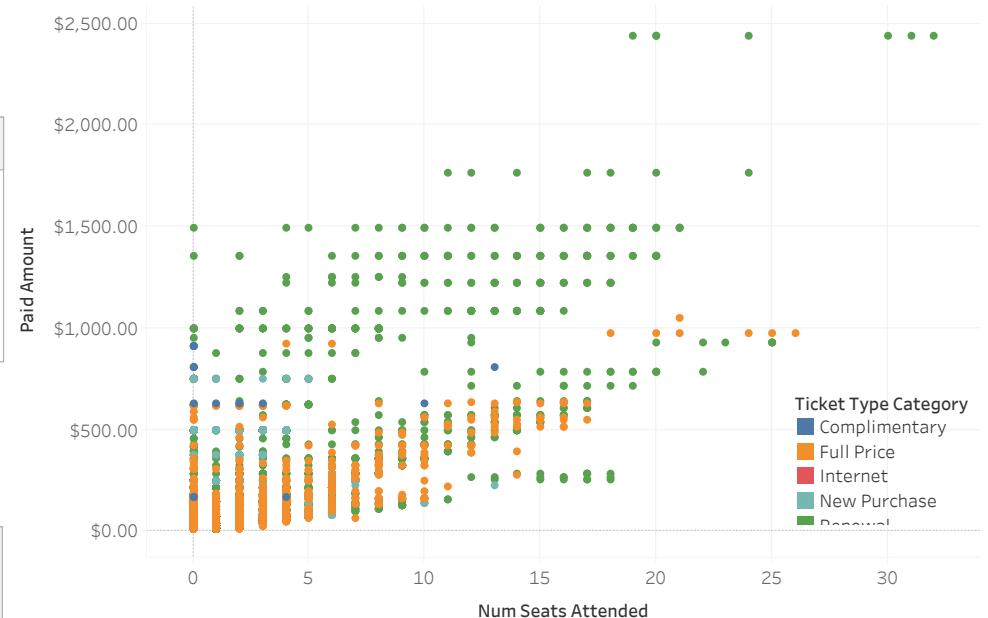


SMU Price Analysis

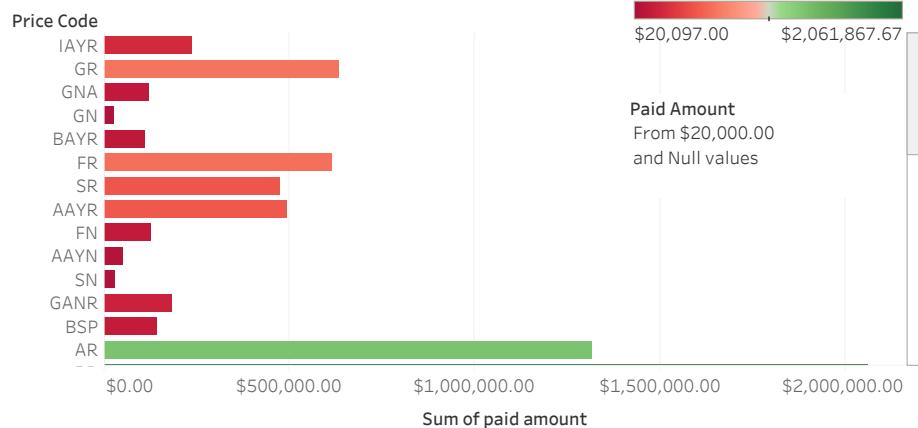
Median price of tickets



Ticket type on attendance vs. paid amount



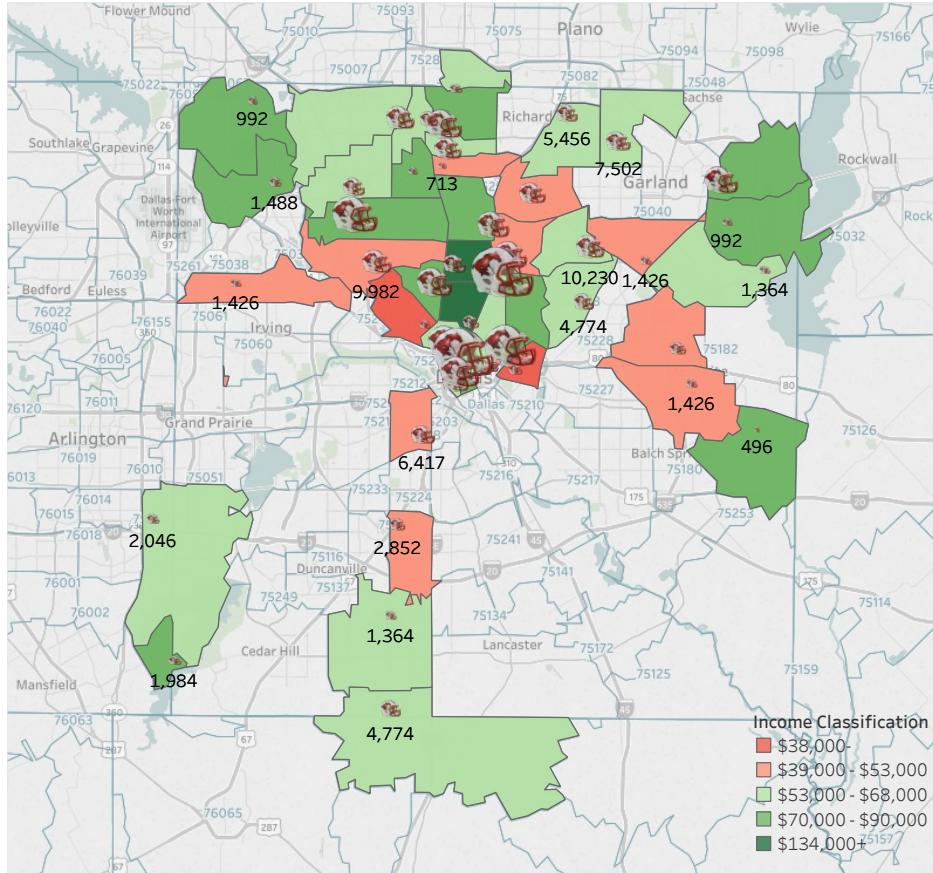
Total earning by price code



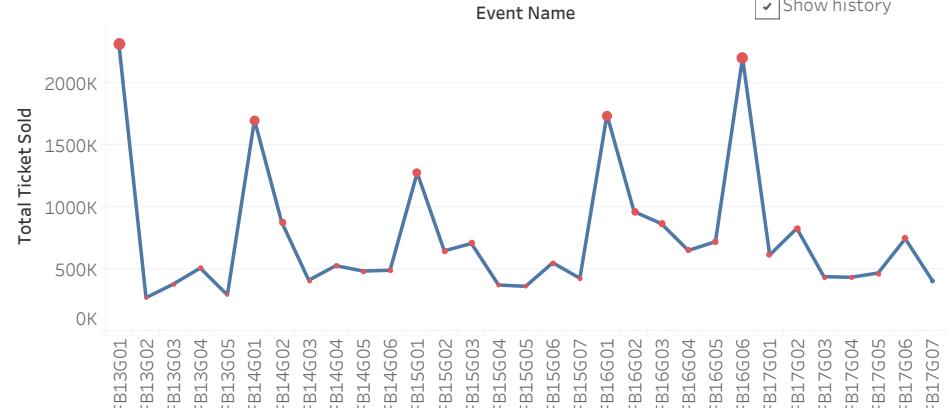
Customer details



SMU (Dallas County) Tickets Sold/Game

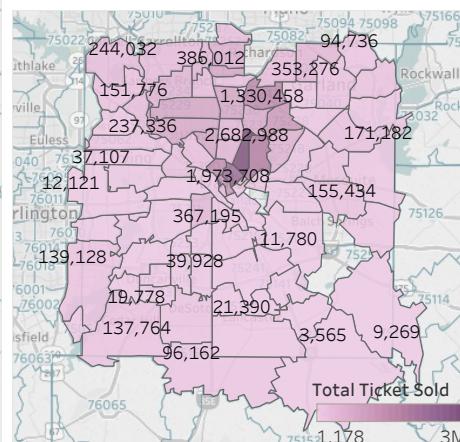


Total Ticket Sold/Game - FB17G07

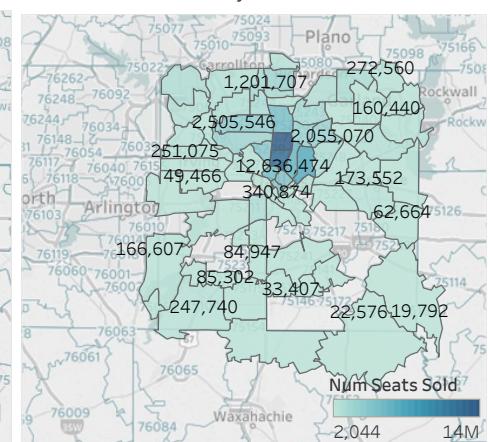


Event Name
FB17G07
 Show history

Total Tickets Sold - Single Ticket Buyers

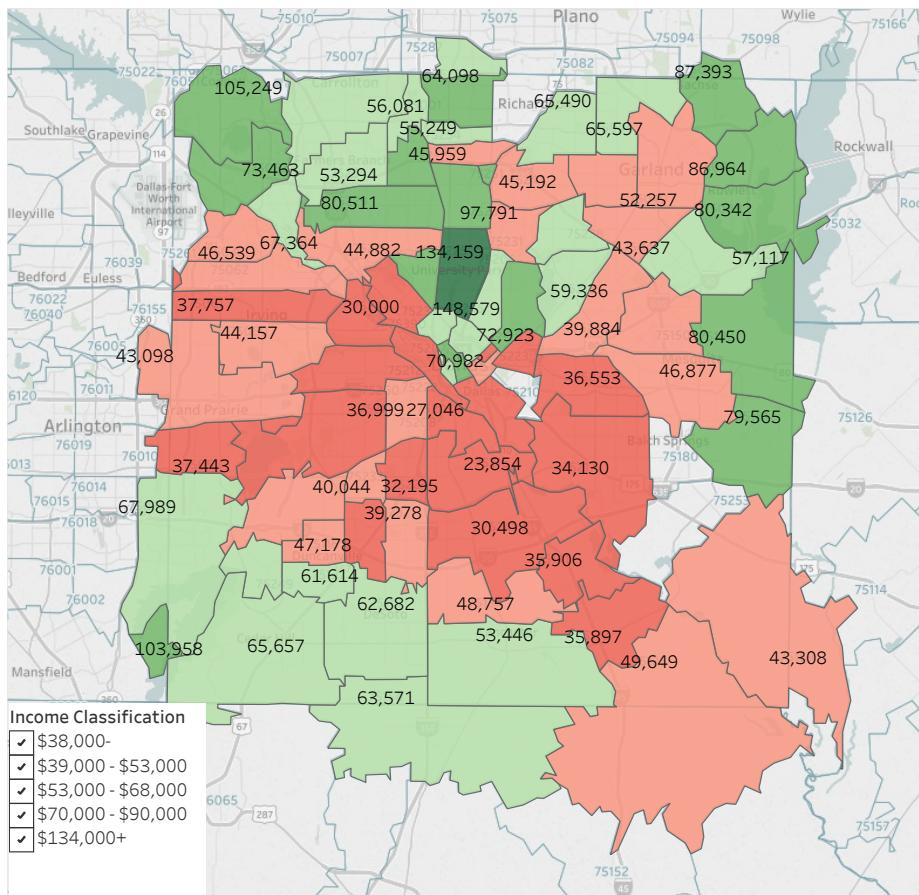


Seasonal-Ticket Buyers

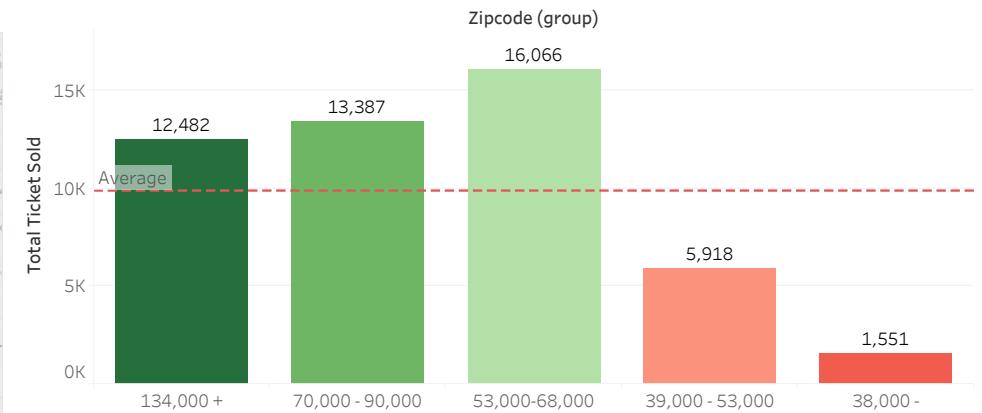




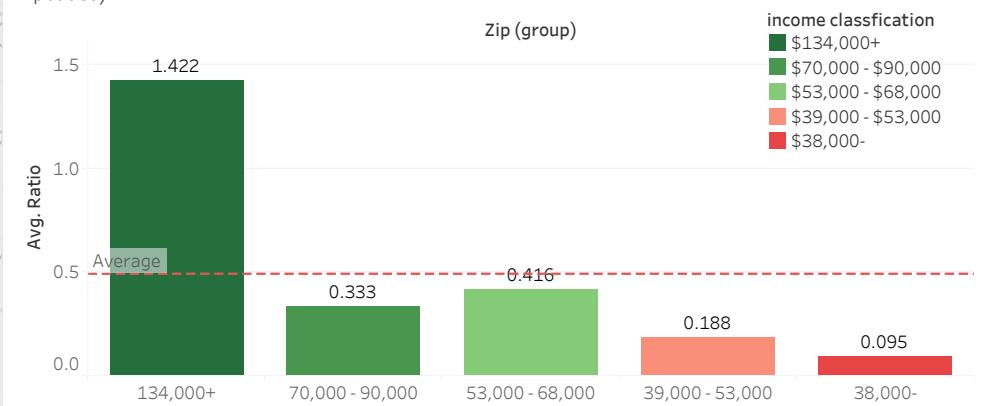
Income Distribution in 5 Groups



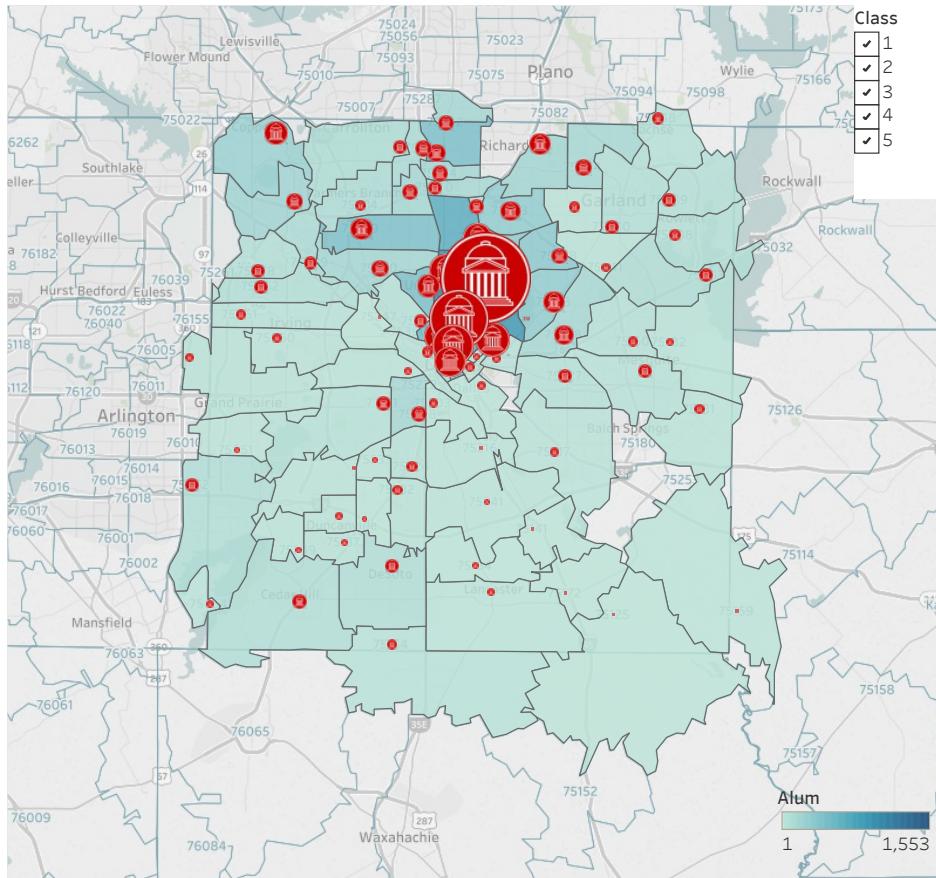
Total Tickets Sold in 5 Income Groups



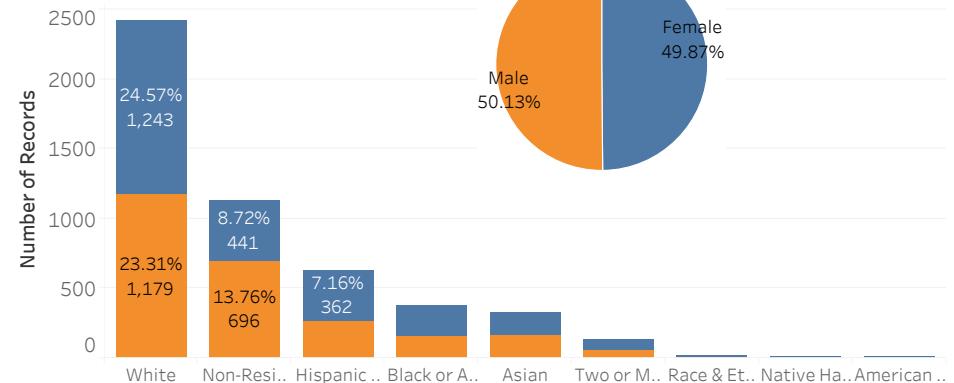
Avg. Cust./Population Ratio in 5 Income Groups (greater = stronger interest from those zipcodes)



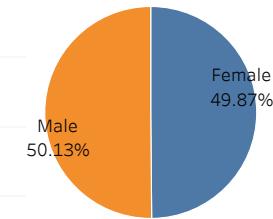
SMU Student & Alum in Dallas



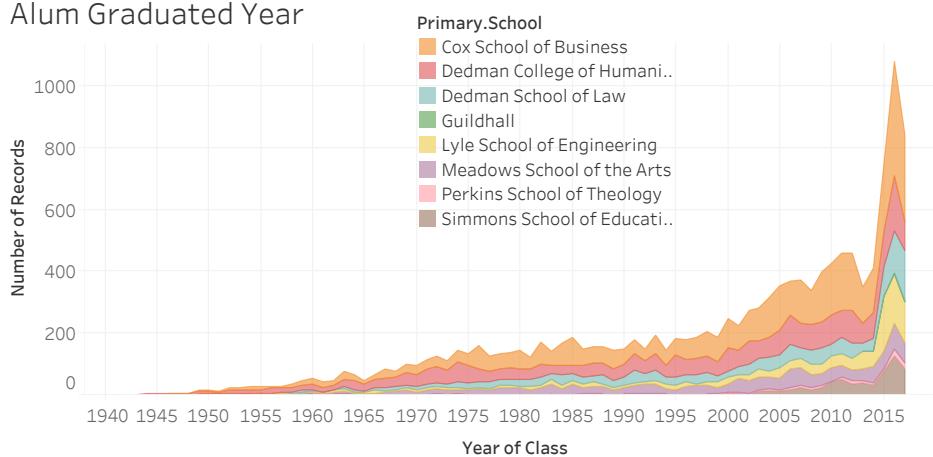
Student Race Distribution



Gender
Female
Male



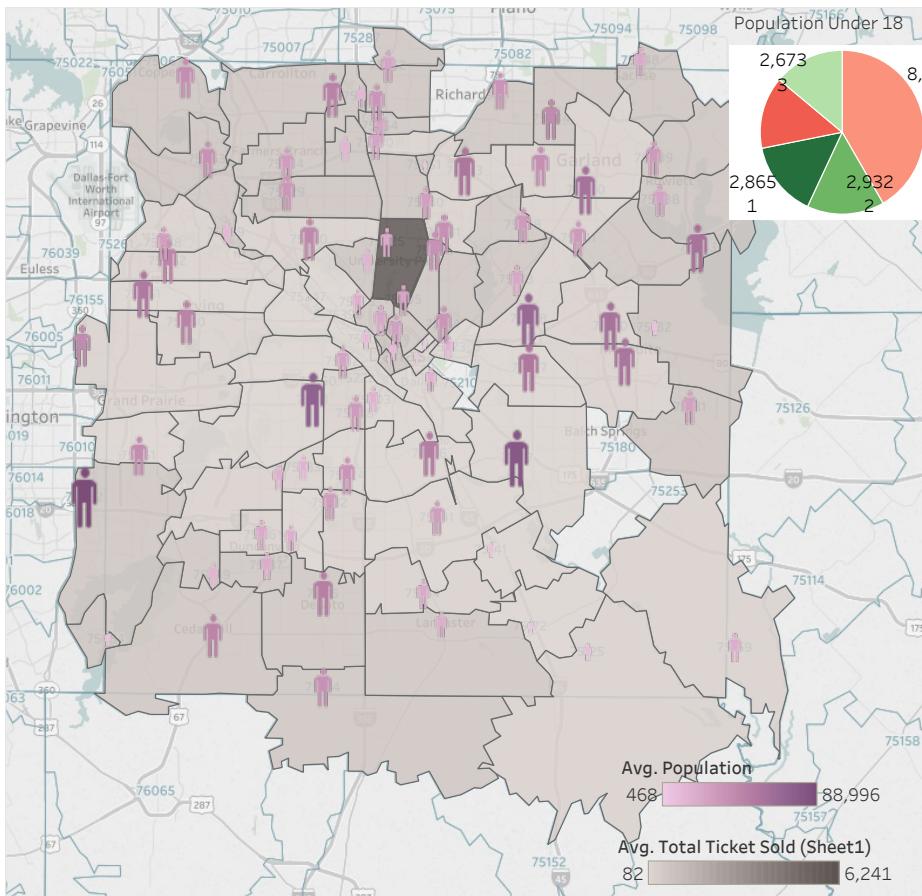
Alum Graduated Year



Primary.School
Cox School of Business
Dedman College of Humani..
Dedman School of Law
Guildhall
Lyle School of Engineering
Meadows School of the Arts
Perkins School of Theology
Simmons School of Educati..



Ticket Sold vs. Population Density



Dallas Demographics

Class	Zipcode	Avg Income	Population	Ratio	Avg. HH size	Households	Pop 1
1	75205	148,579.00	23,061.00	1.45	2.00	8,835.00	2,166
	75225	134,159.00	20,892.00	1.39	2.00	8,348.00	2,000
	Total	140,772.80	21,886.82	1.42	2.00	8,571.36	2,166
	75214	72,923.00	32,950.00	1.40	2.00	15,410.00	3,756
	75201	70,982.00	9,409.00	1.01	2.00	5,145.00	1,114
	75229	80,511.00	31,571.00	0.59	2.99	10,928.00	4,000
	75209	86,304.00	13,653.00	0.50	2.00	6,158.00	1,466
	75230	97,791.00	26,934.00	0.48	2.13	12,510.00	2,626
	75248	84,241.00	33,395.00	0.40	2.21	15,644.00	3,224
	75244	76,203.00	13,266.00	0.23	2.37	5,570.00	1,224
	75019	105,249.00	38,666.00	0.15	2.84	13,641.00	6,000
	75063	73,463.00	35,090.00	0.13	2.31	15,477.00	5,224
	75089	86,964.00	30,251.00	0.12	3.24	8,860.00	4,224
	75048	87,393.00	20,328.00	0.07	3.02	6,386.00	2,224
	75251	82,288.00	2,331.00	0.06	1.66	1,563.00	0.37
	75088	80,342.00	24,712.00	0.05	2.01	8,224.00	2,224

- Income Classification
- \$38,000-
 - \$39,000 - \$53,000
 - \$53,000 - \$68,000
 - \$70,000 - \$90,000
 - \$134,000+

- Households w/ Kids
- Few Kids(2000-4000)
 - Lots of Kids(6000+)
 - More Kids(4000-6000)
 - Very Few Kids(2000-)

- Avg. Ticket Price
- High Price
 - Low Price
 - Medium Price

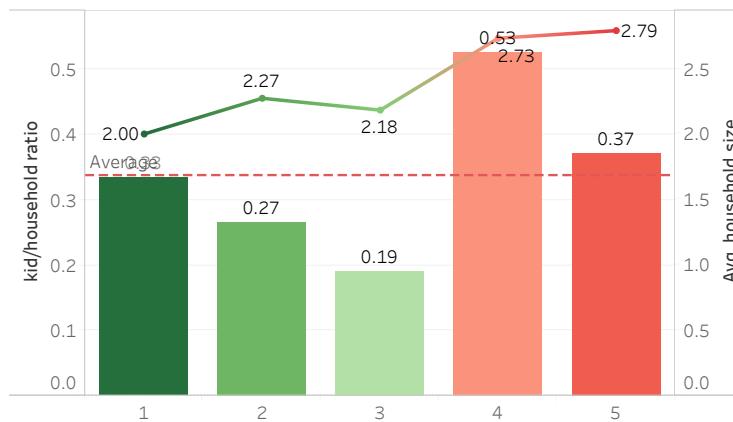
- Attendance Rate
- Average Attendance
 - High Attendance
 - Low Attendance

Households w/ Kids
0 to 78,709
and Null values

Total Ticket Attended
1,178 to 1,475,166
and Null values

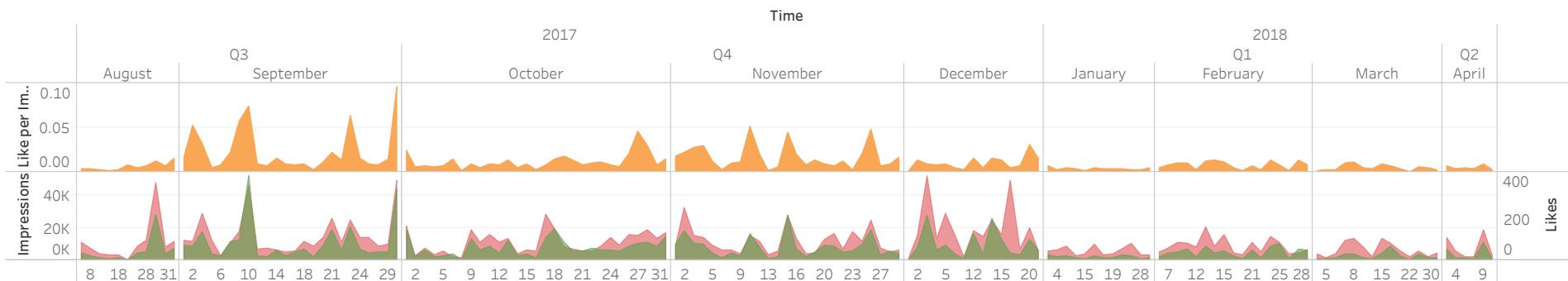
- Income Classification
- \$134,000+
 - \$70,000 - \$90,000
 - \$53,000 - \$68,000
 - \$39,000 - \$53,000
 - \$38,000-

Children-Household Ratio (higher = more kids in the house) vs. Household Size (Line Graph)

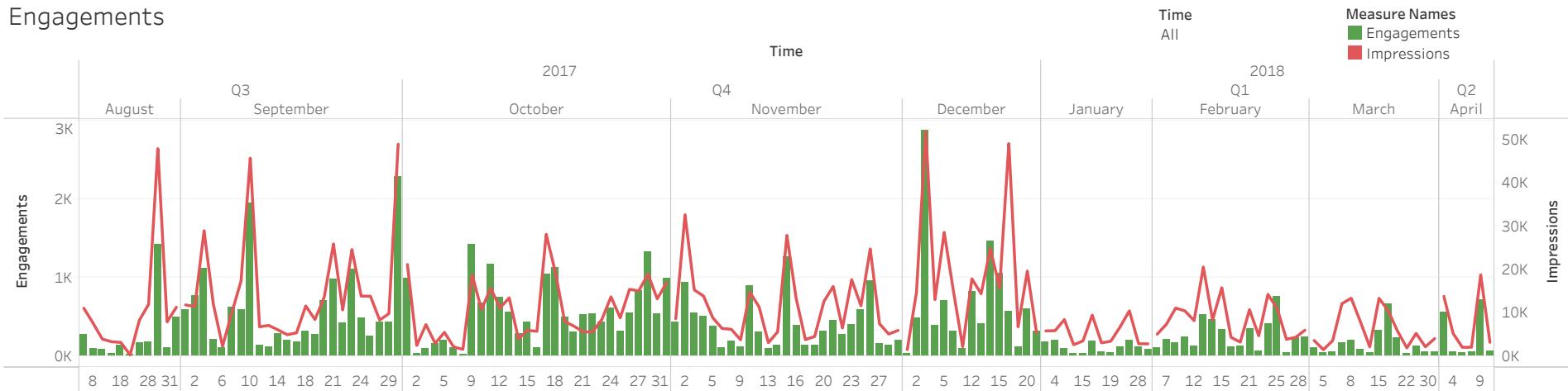


SMU Engagement

Impressions/Likes



Engagements





Conclusion

Single Ticket Buyers

- Special cases (high ticket sales, low attendance rate)
- Target customers from North Dallas like Plano, Richardson (low recency and high attendance rate)
- Low attendance rate for free tickets, not because of corporate company
- Provide transportation assistance to customers who live outside of Dallas
- Run survey analysis on all customers for their experience (most of them are inactive since the first time came)
- Identified most loyal customer and build the profile and you can try to turn them into seasonal ticket buyers

Seasonal Ticket Buyers

- Send reminders to: high-paying but low attendance customers
- Increase internet marketing because of low sales of internet market
- Standardize price codes and use them in future analysis for revenue management



Conclusion (Cont.)

Census Analysis

- Focus on mid-to-lower income zip code groups (higher children to household ratio)
- Tickets sold and income is not evenly distributed in Dallas, so we need to segment customers and apply different marketing strategies
- Focus on alumni population and their occupations, potentially turn them into season ticket buyers or potential donors
- Select groups based on client's requirement adjusting to ticket sales performance and business objectives
- Update your all your data in tableau and excel for updated analysis

Social Media Analysis

- Obtain small community leaders to twit about SMU and #PONYUP and SMU Mustangs because for lower cost and more audience engagement
- Organize twitter activity accordingly to activities for more engagement