TICKETING ANALYSIS

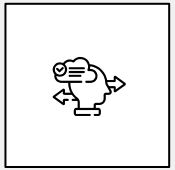
FINDINGS AND INSIGHTS

NBA Team, 2021-22 Season

Goals of Analysis

Maximize Ticket Sales

Identifying KPIs

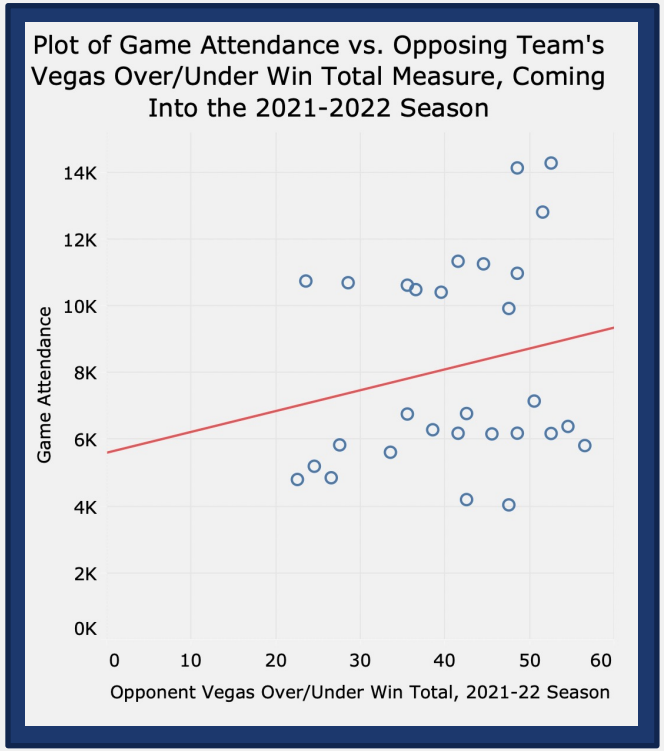


Customer Satisfaction

1

Vegas Over/Under 21/22 Effect on Attendance

Analysis Results



R

- Pearson's Correlation Coefficient = 0.203
- Weak, but positive, relationship between Opposing Team Vegas Over/Under and Game Attendance

R^2

- R-Squared Value = 0.041
- Only 4.1% of the variance in Game Attendance can be explained by the variance in Vegas Over/Under

Takeaways from Results

- While there appears to be a general upward trend between a team's Vegas Over/Under Measure and the attendance for the game, it doesn't seem like a very good indicator for gauging attendance
- Result is somewhat surprising, since one would assume a team with higher odds in winning would draw a larger crowd for a more "exciting" game
- Could be because fans want to see Home teams play other teams with a high chance of winning
- Useful to look at other metrics that evaluates an opposing team's performance and favorability to predict fan turnout

2

Account Total Sales, Total Tickets, Attendance

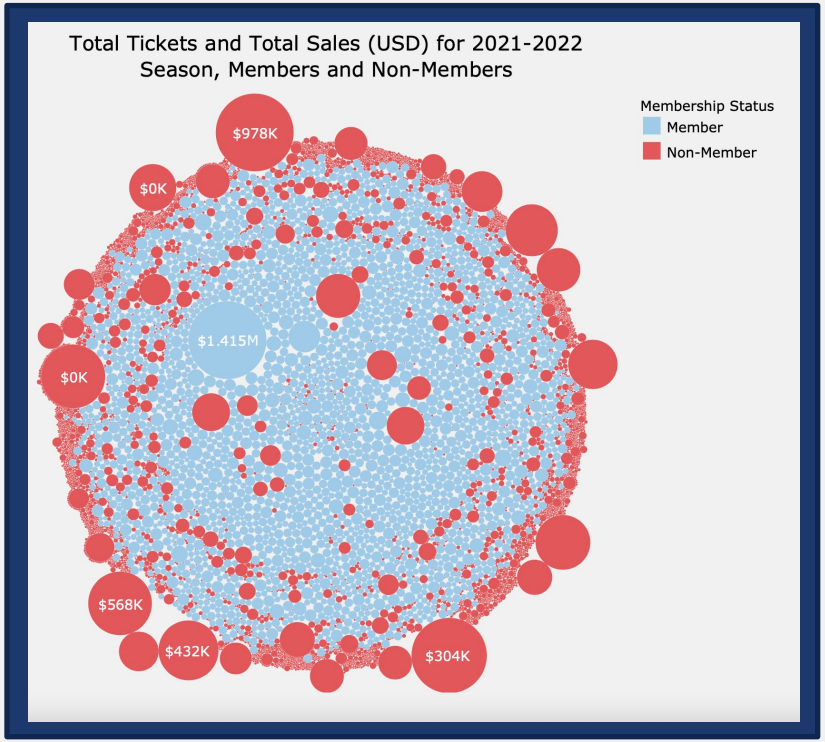
Analysis Results

Total Tickets

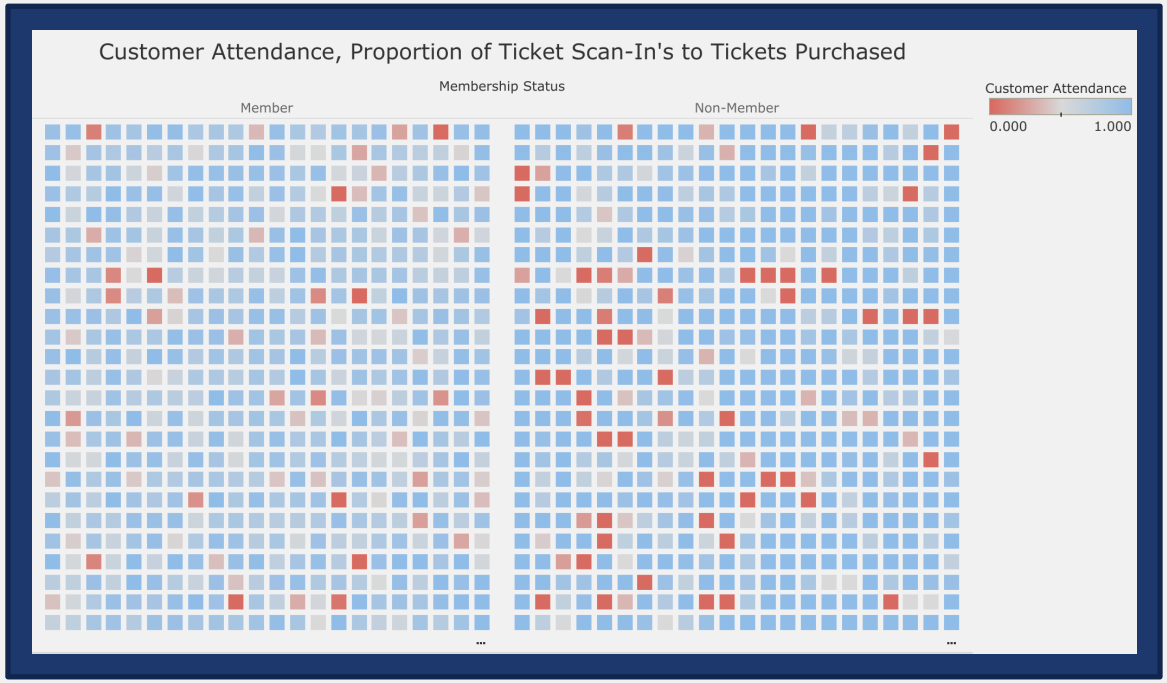
- Non-Members tend to acquire more tickets
- Greater proportion of Members

Total Sales (USD)

- Total Sales typically higher for Non-Members
- Many Non-Members with high quantity of tickets tend to have comped tickets (Total Sales = $0)



Analysis Results (cont.)



Members

- More likely to make an appearance at game overall

Non-Members

- More likely to not attend games of which they purchased tickets for, however also more likely to all games of which they purchased tickets for

Relevance of Results

- Invitation of high-paying customers who are not already members to purchase season tickets, increasing customer and fan retention
- Members are probably more likely to go to less popular games, make members-only benefits during these games to sustain customer satisfaction

3

Prediction Model, 2022-23 Season Attendance

Model Characteristics

Model Type

Ridge Regression

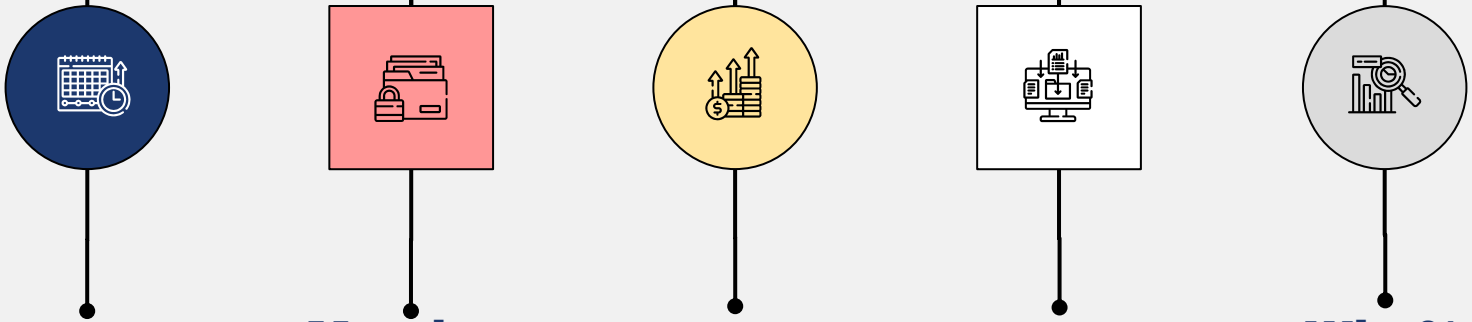
Target Data

Arena Capacity per Game
Attendance / Total Arena Capacity

Why Ridge Regression?

How will the model be constructed?

Model Features



Attendance

How many recorded ticket scans vs. total tickets purchased for game

Member Presence

Percent of attendees that are members

Avg Ticket Price

Average Price of Tickets for game (USD)

Following*

Popularity of opponent based on total social media following

Win %

Ongoing team win percentage

* Data acquired using scraping techniques and packages provided in Python

Model Results

Feature	Coefficient
attendance	0.975
percent_mems	-0.436
avg_ticket_price	-5.853e-5
following	2.867e-10
win_pct	0.013

$$\text{arena\_capacity} = 0.184 + 0.975*\text{attendance} - 0.436*\text{percent\_mems} - 5.853e\text{-}5*\text{avg\_ticket\_price} + 2.867e\text{-}10*\text{following} + 0.013*\text{win\_pct}$$

Interpretation of Results

Feature	Interpretation
attendance	Attendance is closely related to how full the arena is; more ticket scans relative to ticket sales will increase seats filled
percent_mems	As the proportion of attendees that are members increases, the arena is expected to be less full
avg_ticket_price	An event where the average ticket price is high likely means the arena will not be as full
following	A more popular team (likely to have a greater social media following) will results in a higher attendance;
win_pct	Ongoing win-percentage has an approximately one-to-one relationship with how full the arena is

By closely examining the impact of each of these features on customer attendance and filling seats in the arena, the specific KPI's that increase attendance and customer satisfaction can be determined, ultimately resulting in ticket sales and profit maximization.

Resources

- NBA Team Social Media Followings used for Ridge Regression

  (https://wegrynenterprises.com/2022/07/14/ranking-the-most-loved-nba-teams/)

- Slides: Provided by SlidesGo
- Visuals: Data Visualizations created in Tableau
- Packages used in Python: sklearn, BeautifulSoup