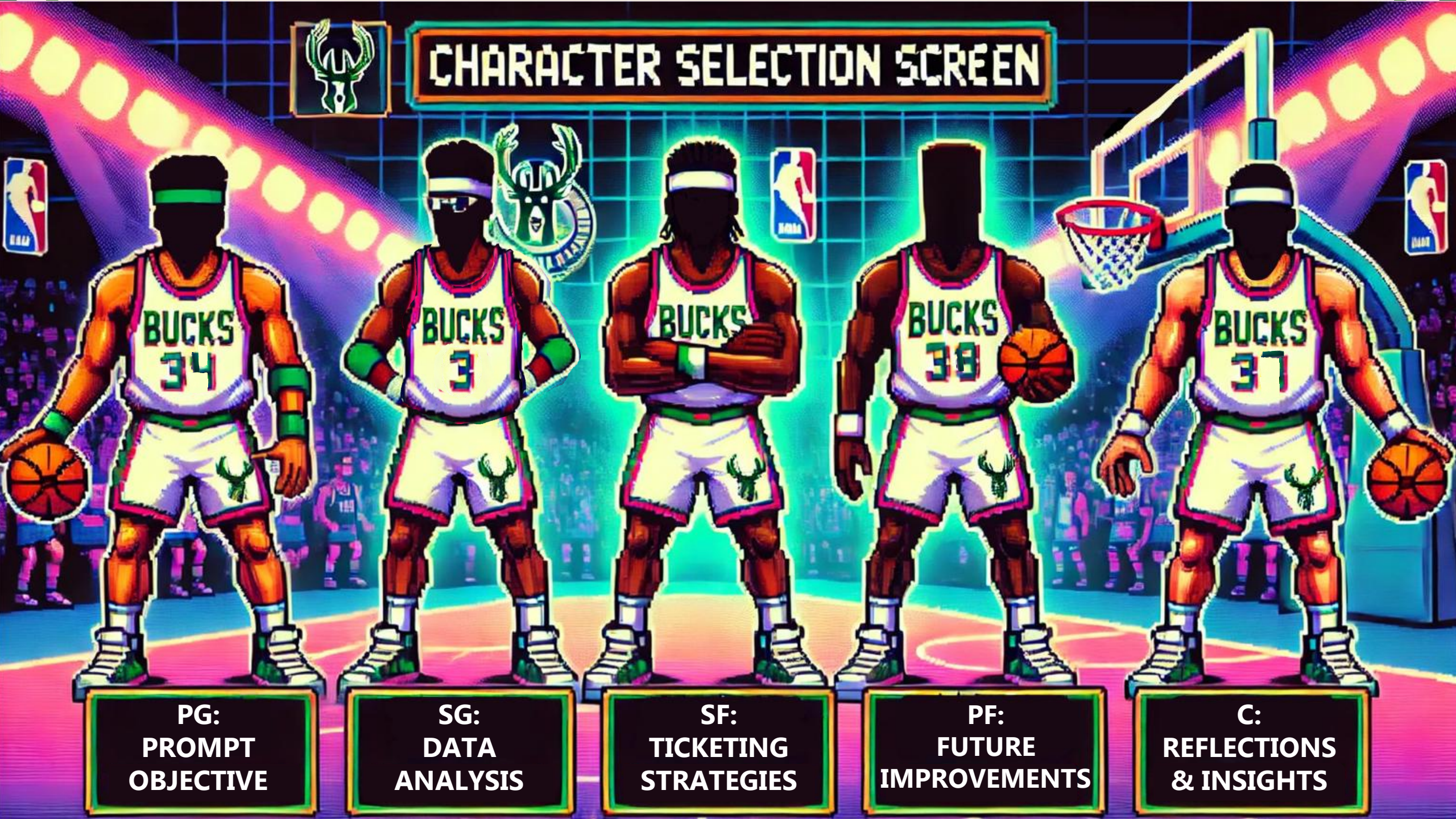
HACKATHON

Raiders of Regression


CHARACTER SELECTION SCREEN
BUCKS 34
BUCKS 3
BUCKS
BUCKS 38
BUCKS 37
PG: PROMPT OBJECTIVE
SG: DATA ANALYSIS
SF: TICKETING STRATEGIES
PF: FUTURE IMPROVEMENTS
C: REFLECTIONS & INSIGHTS

Prompt Objective

Prompt:

Analyze fan behaviors, Segment customers based on their journey stage and build predictive models to determine the likelihood of fans progressing to higher levels of Engagement

Objective:

Map the Customer Journey, and Analyze Key Drivers of Engagement & Retention, using predefined tiers and data imputation, analysis and interpretation to uncover behaviors which lead fans to higher tiers.

Data Analysis

Cleaning:

Row Removals
- 24/25 data
- Negative Net values

Changes
- Inferred Marital/Single to Unknown
- Gender to M/F/U
- Children to Y/N/U

Retail
- Removed 24/25 data

Omitted Variables:

Ticketing
- Purchase Date

F&B
- Guest Check ID
- Report Line Quantity

Retail
-Order ID
-Product Title
- Category Name

Data

Analysis

Additional variables:

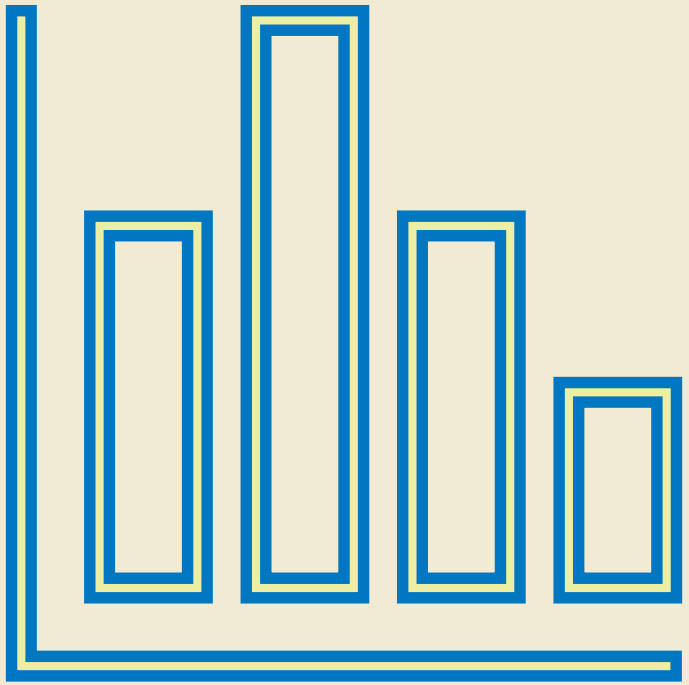
Avg. Game Start Time

Avg. Game Date in Schedule

Party Size

Opponents Seen

St. Dev. Of Date Games Attended

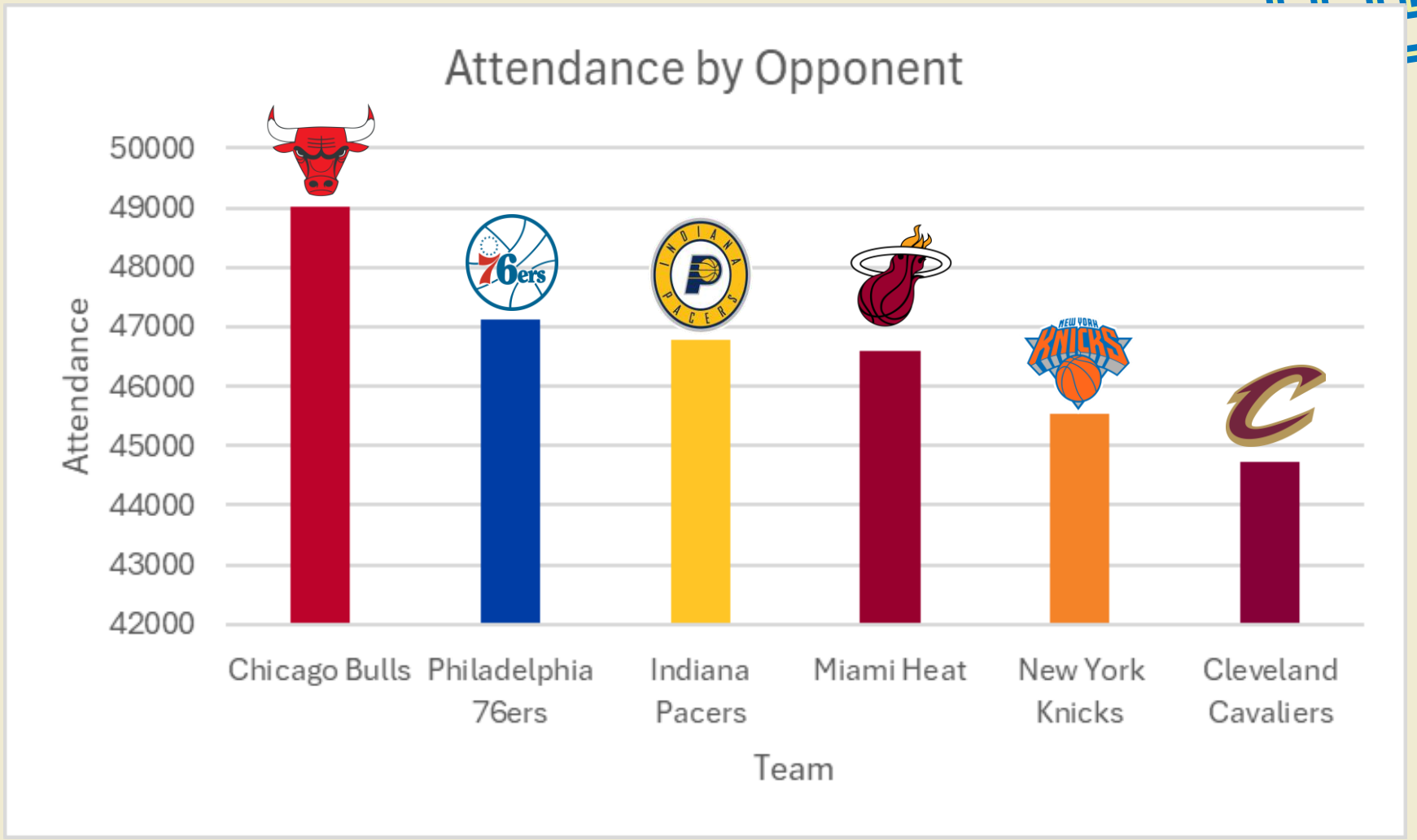


Avg. Opponent Ranking

Weekend/Weekday

Data
Analysis

Excel:

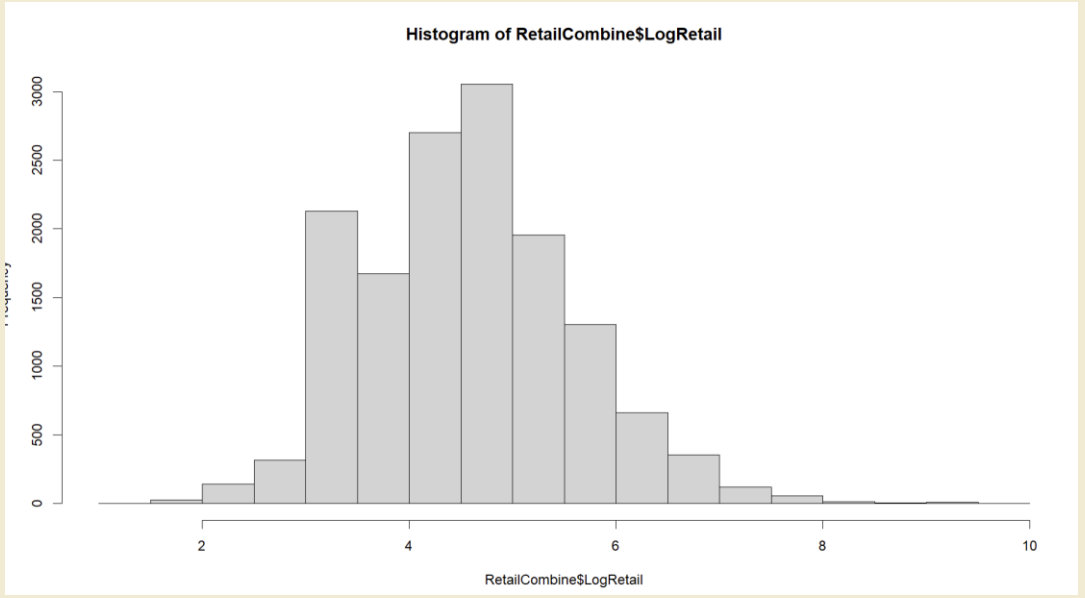


Data
Analysis

Excel: **Food and Beverage Sales by Section**

Data Analysis

GLM:




```
Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     4.430e+00  3.202e-02 138.357  < 2e-16 ***
MaritalSingle   3.015e-02  1.896e-02   1.591   0.1117
MaritalUnknown -6.154e-02  3.330e-02  -1.848   0.0646 .
ChildrenU      -7.750e-02  3.056e-02  -2.536   0.0112 *
ChildrenY      -2.804e-02  1.945e-02  -1.442   0.1494
Finance         1.811e-04  3.784e-05   4.785 1.72e-06 ***
GenderM         1.486e-01  2.149e-02   6.918 4.78e-12 ***
GenderU        -3.531e-02  2.289e-02  -1.543   0.1229
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Data Analysis

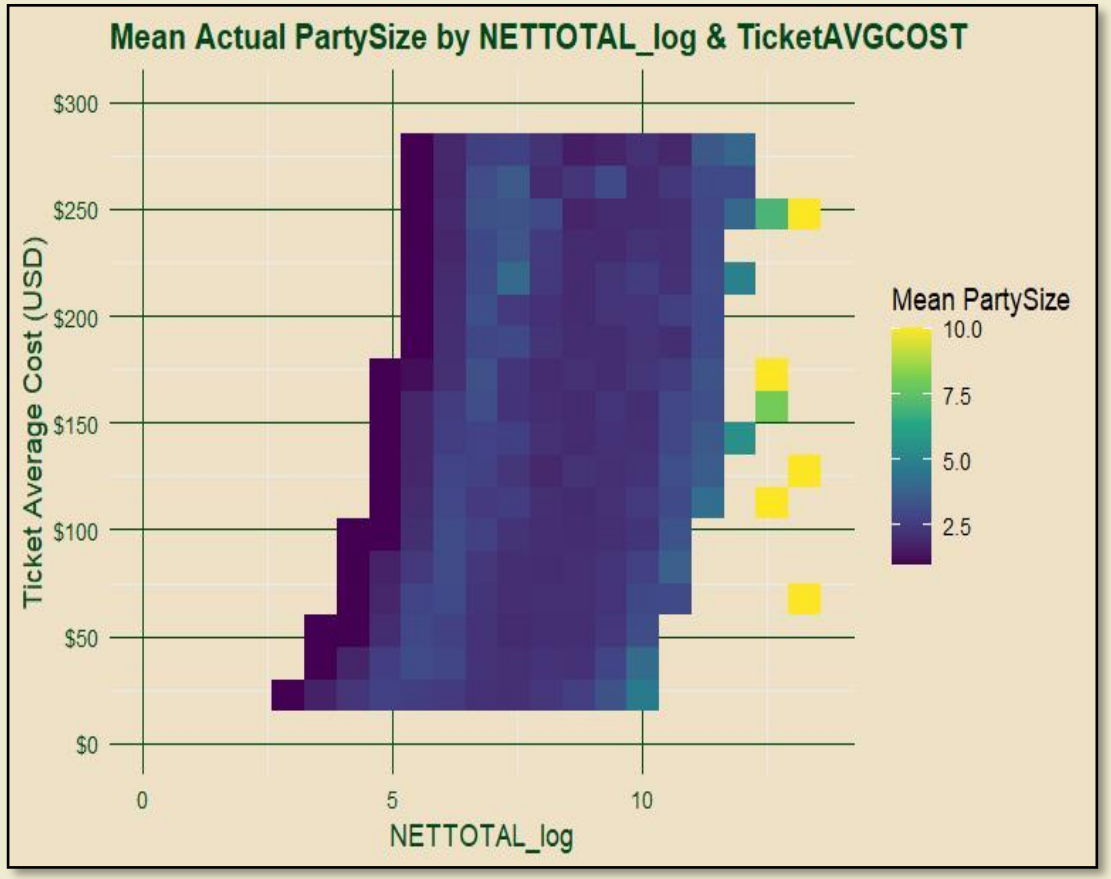
Random Forest:

- Log-transformed Net Spending
- Average Price per Ticket
- Games Attended
- Most Recent Year Spending
- Finance Score
- Distance
- Retail Average Spending per Game
- FB Average Spending per Game
- Average Opponent Rank

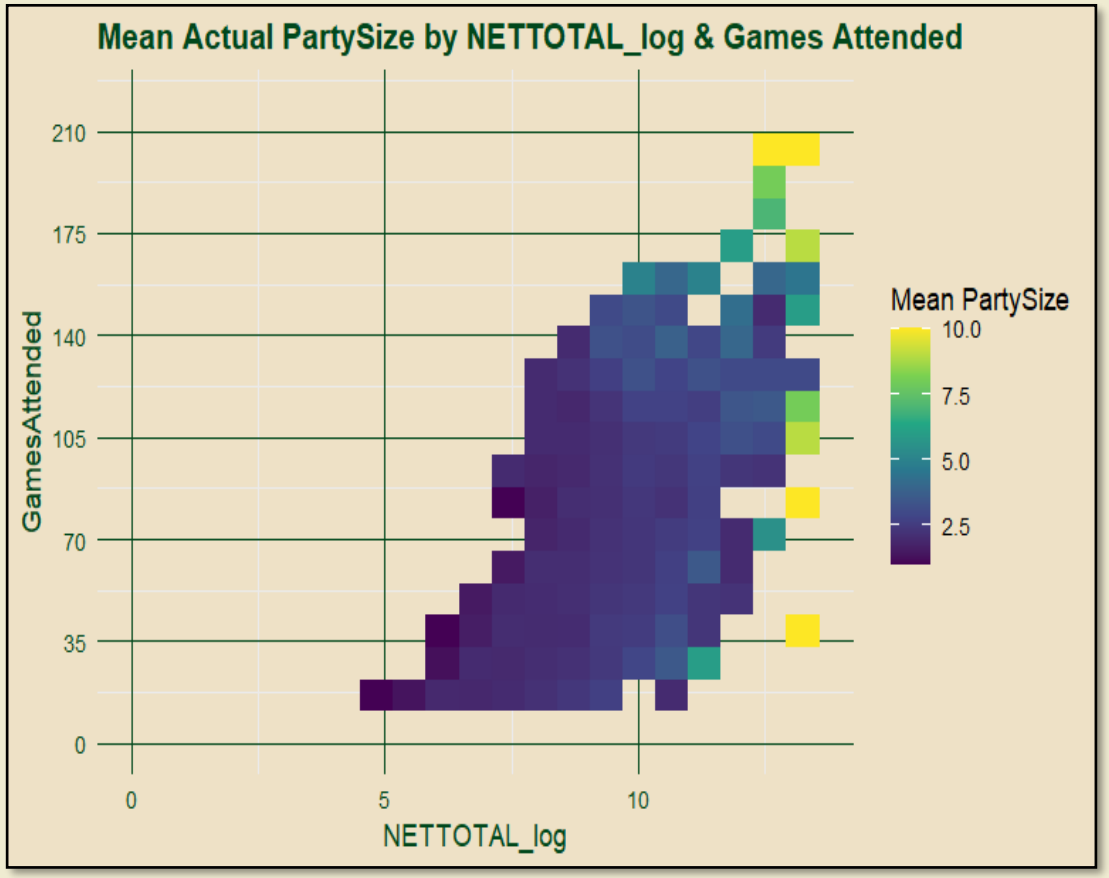
Data Analysis

Random Forest:

Party Size vs. Ticket Price



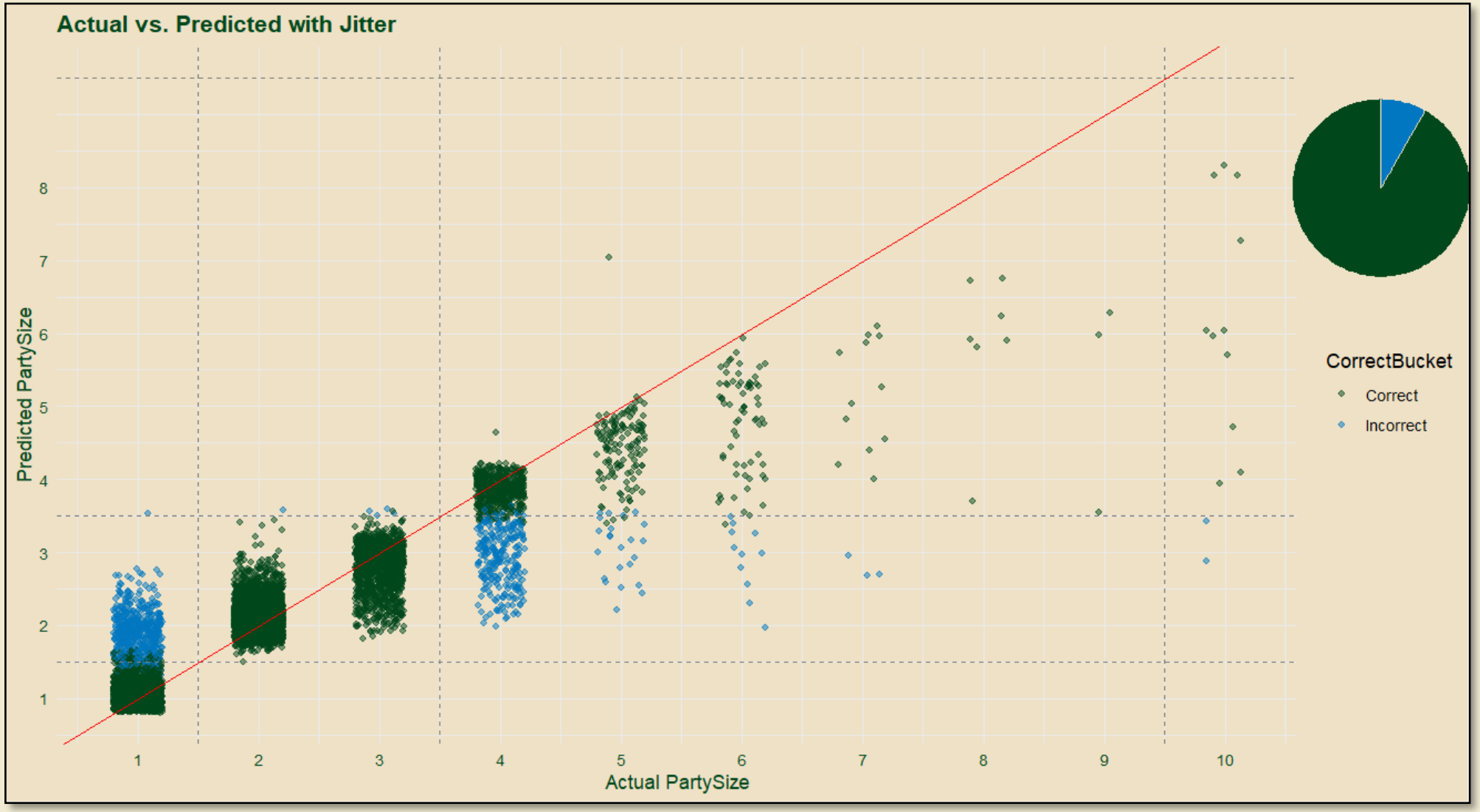
Party Size vs. Total Games Attended



Data Analysis

Random Forest:

Correct	91.75%
Incorrect	08.25%



Data

Analysis

Random Forest:

Correct	91.75%
Incorrect	08.25%

Three distinct fan buckets:

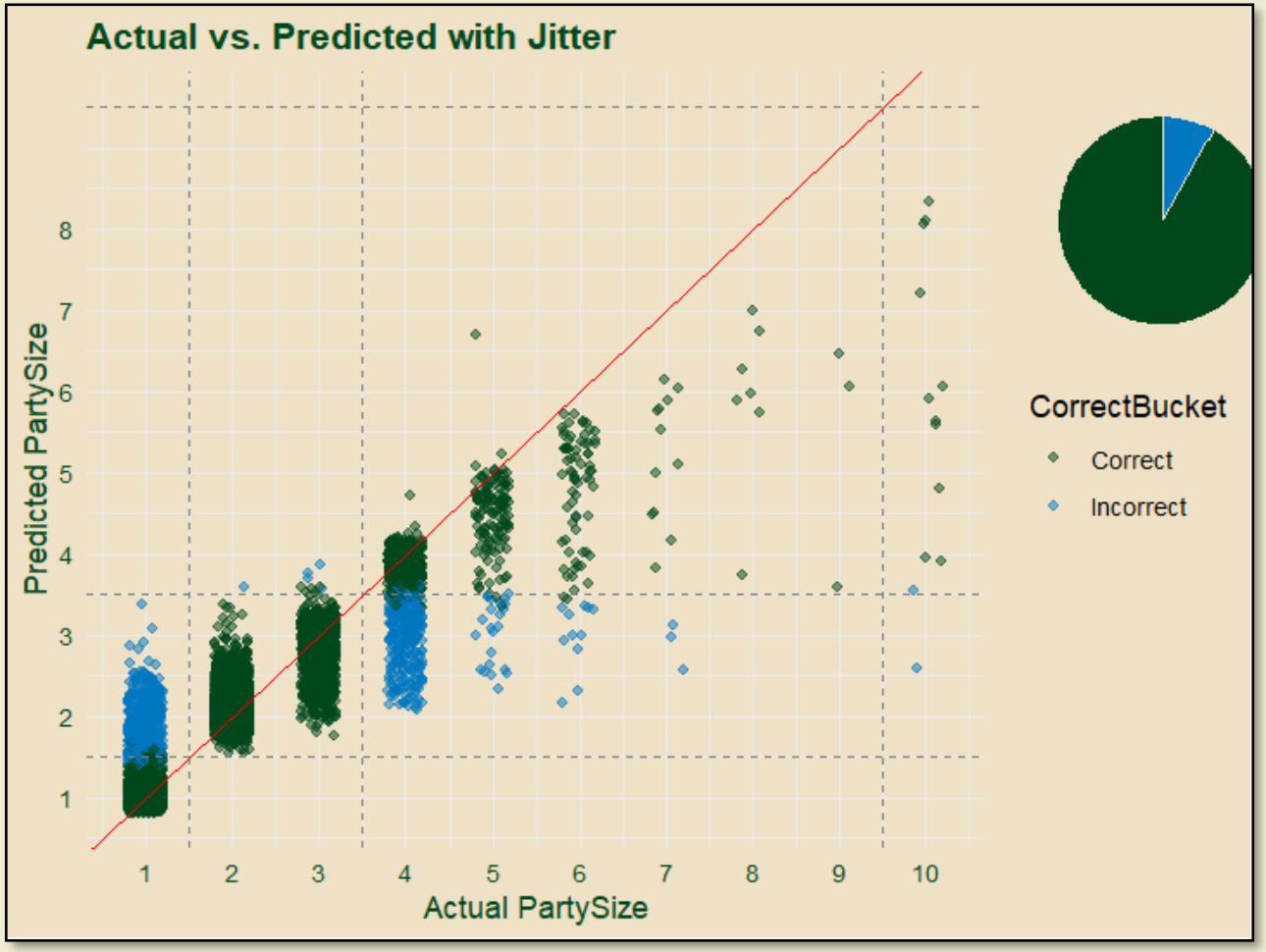
#		freq.
1	Solos and meet-ups	20%
2-3	Squads	70%
4+	Parties	10%

Model Strengths:

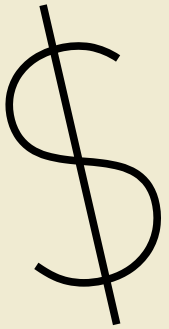
Excellent at identifying Squads (99%)

Applicable to brand new fans

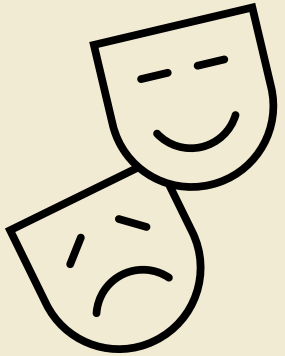
Few false-positives when identifying Parties



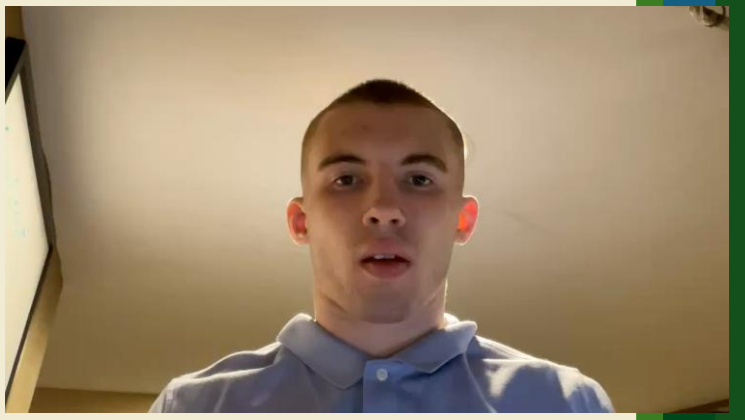
Ticketing Strategies



* Group Discounts
* Themed Sections
* Early Entry/Stay Late
* Family & Friends Ticket Packs
* BOGO or BOG(%)



Future Improvements



Survey Demographics Annually

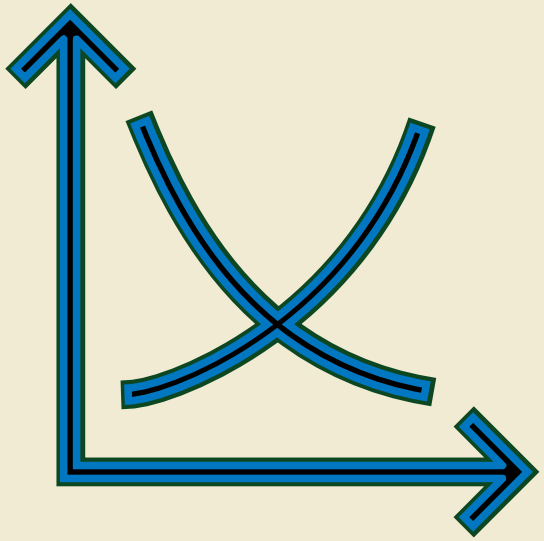
Discount Promotion

Create an Account Number Database w/ Aggregate totals and key features

Current Season Ticket Member	Prospective Season Ticket Member
2461	128
Partial Plan Holder	Engaged Single Game Ticket Buyer
1152	213
Casual Single Game Ticket Buyer	Lapsed Fan
5056	71297

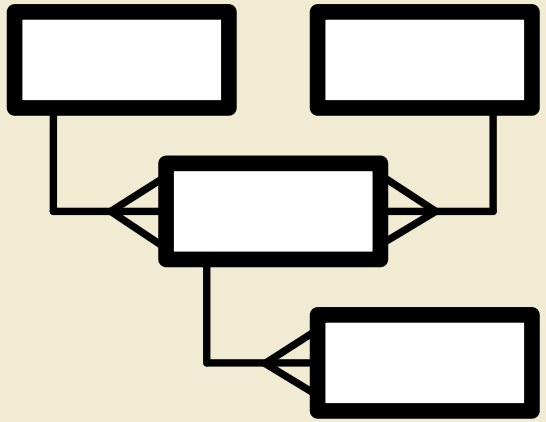
REFLECTIONS & INSIGHTS

Understanding Fan Behavior & Pricing Effects



Simulating Pricing Strategies in R

Expanding Data Sources & Market Insights



References

https://www.basketball-reference.com/

https://www.eventbrite.com/blog/increase-attendance-sport-events-sell-tickets-ds00/#:~:text=Theme%20nights%20are%20a%20fun,outfits%20with%20friends%20to%20events.

External Data(i.e. Average Game in Schedule, Average Opponent Ranking, Average Game Time, ...)

Themed Sections Statistics