



Buying tickets: Capturing the dynamic factors that drive consumer purchase decisions for sporting events

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OBJECTIVE

- To model and forecast the dynamics of ticket sales for future games in a team's remaining home schedule across the season.
- To examine the consumer decision process when considering and purchasing individual game tickets.
- To capture the interplay among the effects of each game's attractiveness, the seating tier, and price in driving a customer's ticket decision.

THEORETICAL ASSUMPTIONS:

- Ticket buyers engage in a **two-stage decision process**: (1) consideration of relevant games (and seats) and (2) choice from this set.
- Consideration stage**: Tickets are screened on the basis of game attractiveness, seating tier, time until game, and price,
- Purchase choice stage**: Tickets in consideration set are fully evaluated. Individuals choose one option from the consideration set. A no-choice option is always in the consideration set.
- Pricing** influences the perceived value of the seat.
- The **performance of the teams** playing affects the attractiveness of the game (which varies over time).

THE MODEL

Modeling the consideration stage:

- Game-seat combination must be available for purchase (i.e., it is not sold out)
- Game attractiveness is greater than a minimum threshold (i.e., $A_{gt} > A^*$)
- Seating tier value must be greater than a minimum while not exceeding a maximum threshold (i.e., $\delta_1^* < d_s < \delta_2^*$)
- The game day is within a certain future time period to allow for adequate planning (i.e., $T_1^* < T_{gt} < T_2^*$)

The effect of price:

Price can influence the value of the seating tier:

$$\delta_s = C + \gamma * RFV_s + \varepsilon_s$$

where RFV is the *relative face value* for each seating tier compared to a chosen baseline:

$$RFV_s = \frac{FV_s}{FV_0} - 1.$$

In **variable pricing** and **dynamic pricing** situations, price paid (instead of relative face value price) can be modeled to influence the attractiveness of games. Similarly, the consideration set can be screened by maximum price.

Choosing among alternatives in the consideration set:

$$P_{gst}^{LOGIT} = \frac{(I_{gst} \cdot \exp\{V_{gst}\})^{-D} (\exp\{\phi_t\})^D}{\sum_{g=1}^G \sum_{s=1}^S (\exp\{\phi_t\} + I_{gst} \cdot \exp\{V_{gst}\})}$$

Value of any ticket at any time is a function of:

- Attractiveness of the game at a given time (A_{gt})
- Value of the seating tier (δ_s)
- Time until game (T_{gt})

$$V_{gst} = A_{gt} + \delta_s + \beta \cdot \ln(T_{gt})$$

Attractiveness of game is a function of team records

- Home team records** will affect sales for all games

$$\phi_t = b_0 + b_1 \cdot HomeWin\%_t$$

- Visitor team records** will affect sales for specific games

$$A_{gt} = a_{g0} + a_1 \cdot VisitorWin\%_{gt}$$

RESULTS

