



Dunking Dollars: Assessing the Economic Impact of Superstars on NBA Game Attendance



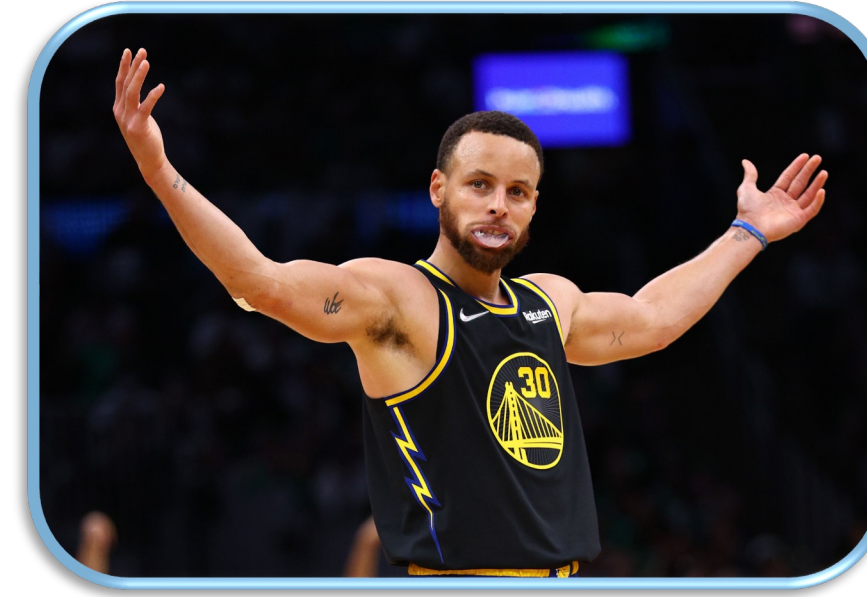
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Introduction

- Superstars serve as the faces of the NBA, promoting attendance and ticket sales across the 30 stadiums
- The six superstars selected in the model make a combined \$270.4B; Owners need to decide if paying these superstars are worth it depending on extra tickets sold
- Superstar classification: Eight NBA All-Star Selections and at least one NBA championship



Kevin Durant



Steph Curry



Anthony Davis



Lebron James



Giannis Antetokounmpo



Kyrie Irving

Previous Literature

- General factors found to increase overall attendance at NBA games include winning percentage, points scored, assists, and rebounds (Davis & Miller, 2019)
- The presence of a superstar on a team increases ticket prices, making them more valuable to spectators (Kaplan, 2022)
- Demand for TV broadcasts is significantly reduced when superstar players sit out of games due to injury, load management, etc. (Reilly & Solow, 2023)

Table 1.
Descriptive Statistics and Correlations

	M	SD	TPA	SAT	MPOP	SP	SH	SA
Team Playoff Appearances	2.67	1.49	1	-.101	-.096*	.162**	.221**	.030
Saturday	13	.34		1	.094*	-.027	.019	-.005
MSAPOP (MIL)	4.17	4.04			1	-.083	-.152**	.020
Superstar Present	.23	.43				1	.616**	.721**
Superstar Home	.11	.31					1	.011
Superstar Away	.14	.36						1

* $p < .05$, ** $p < .01$

Method

- Analyzed 545 games from the 2024 calendar year start to mid-March to investigate how superstars playing in certain games affected attendance, then used other factors such as historical performance, metropolitan statistical average of a city, and day of the week among other variables to see their effect on attendance in relation to superstar presence
- Pulled data from The Athletic and BetMGM to create a data set
- Utilized Excel and SPSS to run a series of liner regression model with the limited variables that didn't have high collinearities to measure the impact on attendance

Final Predictive Model

Table 2.
Linear Regression Analysis Results

Predictor Variables	Model 1	Model 2	Model 3
	Superstar Present	Superstar Home	Superstar Away
(Constant)	17101.628 (118.78)**	17133.530 (118.45)**	17133.530 (119.74)**
TEAM PLAYOFF APP	220.42 (5.422)**	220.049 (5.344)**	238.207 (5.901)**
SATURDAY	354.870 (2.031)*	329.736 (1.878)	346.285 (1.970)*
MSA POP (MILLION)	115.329 (7.765)**	117.036 (7.789)**	111.503 (7.474)**
<i>Superstar Presence</i>			
SSPRESENT	444.776 (3.196)**		
SUPERSTAR HOME		468.548 (2.363)*	
SUPERSTAR AWAY			298.832 (1.797)
<i>F-statistics</i>	25.637	23.597	24.285
R^2	.160	.149	.152
ΔR^2	.153**	.142**	.146**

Note: Standardized coefficients reported (β); t-values in parentheses; * $p < .05$; ** $p < .01$

Results

- Results (Table 2) indicate that a superstar's presence has a significant impact on game attendance
- Examining superstar presence more closely, a superstar playing at home has a significant impact on attendance while a superstar playing away does not have a significant impact on game attendance
- Among the predictors, TEAM PLAYOFF APP and MSA POP have a positive relationship with attendance, and the model indicates that both predictors have a significant impact
- The model suggests that these combined variables explain 15.3% of total variance in game attendance



Spectrum Center - Charlotte, NC

Predictive Analysis

Based on our model, we looked to predict the attendance of an April 9, 2024 game between the Mavericks and Hornets at the Spectrum Center in Charlotte.

$$\text{Attendance} = 17101.628 + 220.42(0 \text{ TPA}) + 354.87(0 \text{ SAT}) + 115.239(2.8 \text{ MSAPOP}) + 444.776 (1 \text{ SSP}) = \mathbf{17869.07}$$

The actual attendance of the game was **17,425**

Implications

- Teams should invest top dollar in superstars as they have a significant impact on home game attendance
- Owners should be aware that a superstar playing in an away game does not have a significant effect on attendance – it could hurt sales to raise ticket prices in anticipation of a superstar coming into town
- Superstar development takes years, but identifying already developed superstars is quick and can make an immediate impact on home game attendance; seek these players via trade or through free agency

Limitations

- Data does not account for ticket prices, holidays, or superstars sitting out of games
- Classifications of superstars can be arbitrary; many other "stars" in the league not considered in this research have become must-watch players that may drive attendance numbers