

Veuger, Stan; Shoag, Daniel

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Taking My Talents to South Beach (and Back): Evidence from a Superstar athlete

Daniel Shoag

*Harvard Kennedy School, Case Western Reserve University Weatherhead School of
Management*

Stan Veuger

American Enterprise Institute

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Taking My Talents to South Beach (and Back): Evidence from a Superstar Athlete

We study the local economic spillovers generated by LeBron James' presence on a team in the National Basketball Association. We find that Mr James has a statistically and economically significant positive effect on both the number of restaurants and other eating and drinking establishments near the stadium where he is based, and on aggregate employment at those establishments. Specifically, his presence increases the number of such establishments within one mile of the stadium by about 13%, and employment by about 23.5%. These effects are very local, in that they decay rapidly as one moves farther from the stadium.

Keywords: superstar, sports economics, local externalities, spillovers

JEL: J2, J44, J61, R1, R5, Z2

Introduction: Spillovers from Superstar Athletes

In 2010, Cleveland Cavaliers basketball player LeBron James, the first pick in the 2003 National Basketball Association (NBA) draft, famously announced that after seven seasons in Cleveland he was ‘going to take [his] talents to South Beach and join the Miami Heat’ (ESPN, 2010). Four years later he returned to Cleveland, in his native Ohio. In this paper, we exploit this natural experiment to study the local economic spillovers generated by the presence of a superstar on an NBA team. Mr James certainly enjoys that status: he has received the league's Most Valuable Player (MVP) award four times, won three NBA championships, and been a part of two victorious US teams at the Olympics. How large these spillovers are, if they exist at all, is a question that brings together two significant lines of research: evaluations of the economic impact of sports events and facilities on the one hand, and the literature on superstars and the differences they can

make on the other.

Evaluations of the economic impact of sports venues are of particular importance to local governments. They often subsidize stadium construction to entice professional sports teams to choose their cities as their home base, citing benefits to the local economy to justify the use of public money for these purposes. This has long been a puzzling line of argument to economists. As Coates and Humphreys (2008) explain, the quasi-consensus among economists at the time was that professional sports franchises and facilities do little to nothing to help local economic development, income growth, or job creation. More recent work, especially work that accounts for a steep geographical gradient in impact size, reaches somewhat more nuanced conclusions. Feng and Humphreys (2018), for example, find that two sports facilities in Columbus, Ohio have a significant and positive effect on property values that decays rapidly with distance, suggesting sizable but very local intangible benefits that are capitalized into property values. And although Harger et al. (2016) find that the arrival of new sports facilities to 12 US cities in the 2000s did not trigger an increase in the number of nearby businesses openings, employment at new businesses near new facilities did exceed that at new businesses area further away from the stadium but still in the same Metropolitan Statistical Area.

To the extent that they can be disentangled, sports events - as opposed to physical infrastructure - do not seem to help local economies much either. Billings and Holladay (2010) find that the Olympics have no long-term impact on host cities' real output per capita or trade openness. Rose and Spiegel (2011) add that it is the information conveyed by bidding for the Olympics, not hosting as such, that bolsters trade. Looking at the 2000

Sydney Olympics specifically, Giesecke and Madden (2011) find no positive impact on tourism and a negative impact on Australian household consumption levels. In addition, Maennig and Richter (2012) find that hosting the Olympics does not lead to higher exports. Baade, Baumann, and Matheson (2008a) find that athletic ‘mega-events’, including World Cup and major-league championship games, do not increase taxable sales in host regions. The same authors (2008b, 2011) find that college football games have no significant impact on host cities' employment or personal income. Similarly, Coates and Depken (2009, 2011) find that the impact of such games on local tax revenue is not clear. Finally Davis and End (2010) find that the winning percentage of a local National Football League (NFL) team, not its presence as such, has a positive and significant impact on real per capita personal income.

Papers that conclude that certain sports events do help the local economy have often narrowed down the variables of interest or focused on the very short term. As Baade and Matheson (2016, p. 202) put it for the Olympics: ‘the overwhelming conclusion is that in most cases the Olympics are a money-losing proposition for host cities; they result in positive net benefits only under very specific and unusual circumstances’. Feddersen and Maennig (2013) find that the 1996 Olympic Games in Atlanta increased local employment, but only in certain industries, and only for the duration of the games. Baade, Baumann, and Matheson (2010) find that while the 2002 Salt Lake City Winter Games hurt aggregate sales, they helped hospitality industry sales. Jasmand and Maennig (2008) conclude that even though the 1972 Munich Olympic Summer Games had no effect on local employment, they did coincide with higher long-term income growth. The 1996 Games appear to have increased local employment, but not wages (Hotchkiss et al.

(2003). Porter and Fletcher (2008) find that the 1996 Games and 2002 Games did not influence local taxable sales, hotel occupancy, or airport usage, but did increase hotel prices.

Are superstars different? Since the publication of Rosen (1981)'s canonical model suggests that superstars can generate disproportionate returns, there have been numerous studies analyzing the impact superstars have on various performance indicators (e.g. attendance of sports games and the performance of a firm). In the sports context that is of interest here, Jane (2014) shows that NBA superstars help increase attendance at both home and away games. The superstar effect is also apparent in the Major League Baseball (Ormiston (2014) and Lewis and Yoon (2016)), golf (Gooding and Stephenson (2016)), the Major League Soccer (Jewell (2017)), and the Bundesliga (Brandes et al. (2008) and Feddersen and Rott (2011)). In this paper we study whether this effect extends to economic outcomes. The measure of economic outcomes that we choose to focus on, the number of restaurants and other eating and drinking establishments close to the stadiums Mr James played in, is a measure of the narrow type used by Baade et al. (2010) and Feddersen and Maennig (2013) discussed before, that is, a measure for which there may actually be a credibly measured, economically significant impact. This is in particular the case because we also allow for the type of steep gradient in effect size that Harger et al. (2016) and Humphreys (2018) find in their work. We see our estimates above all as a “possibility” exercise: we test whether the approach that is most likely to identify an impact identifies an impact, and what that impact looks like. Note that we focus here on professional sports: our results have very limited implications for the role community

sports facilities may have on urban growth and regeneration, as explored by Davies (2016) and Pye et al. (2015).

What we do then is the following: we trace the impact a star of Mr James' caliber can have on economic activity by analyzing the impact his departures and arrivals had on business activity close to the Cleveland Cavaliers and Miami Heat stadiums. We find that Mr James has a statistically and economically significant positive effect on both the number of restaurants and other eating and drinking establishments near the stadium where he is based, and on aggregate employment at those establishments. Specifically, his presence increases the number of such establishments within one mile of the stadium by about 13%, and employment by about 23.5%. These effects are very local, in that they decay rapidly as one moves farther from the stadium; in addition, they are concentrated in Cleveland. Had we found no impact using this estimation technique, we could have confidently argued that it is hard to imagine any variation in sport team performance with an impact on economic outcomes. Based on the very local effects that we do find, we will argue instead that the direct economic effects seem quite limited. We detail the empirical analysis that leads us to this conclusion in the next section.

Materials and Methods: Estimating LeBron James' Impact

The empirical approach we follow to identify the impact LeBron James' presence has on local economic activity, specifically in the eating and drinking industry, is similar to that used in Shoag and Veuger (forthcoming). There, we calculate store counts and employment for neighbourhoods of varying size around big-box retailers to study the effect of bankruptcies of national big-box chains. Here, we draw concentric rings around sports facilities to analyse changes in economic activity in the inner circle as well as

changes in economic activity in outer-more annuli around them. To measure establishment and employment counts within a certain radius of the Quicken Loans Arena in Cleveland and the American Airlines Arena in Miami, we use geocoded information from the Esri Business Analyst Dataset made available by Harvard's Center for Geographic Analysis. These data originate with InfoUSA, a business partner of Esri, which collects lists of establishments for the entire country from a wide range of sources and surveys them by phone. The precise geographic information available in this annual data set, which includes address data for establishments, allows us to calculate the number of stores and employment counts in the eating and drinking industry, and in the restaurant subindustry more specifically, at a specified mile radius. We focus on this particular industry and subindustry as they stand to gain most from increased attendance (itself shown in Figure 1 for Cleveland) and fan enthusiasm, and include all establishments in those industries that are within 10 miles of either stadium in our analysis.

A preliminary look at the data gives us Figures 2a and 2b, which show how the number of restaurants within one mile of Mr James' home stadiums in Cleveland and Miami changed over the past ten years. The figures strongly suggest that Mr James positively affected the number of restaurants near his home stadium. As discussed, he joined the Cleveland Cavaliers in 2003, left for the Miami Heat in 2010, and returned to Cleveland in 2014. Figure 2a and 2b show a downward trend in the number of restaurants in Cleveland between 2010 and 2014 that coincides with an upward trend in Miami. After Mr James returned to the Cavaliers, the number of restaurants near the Quicken Loans Arena in Cleveland spiked, while the number of restaurants within a mile of the American

Airlines Arena started to slide. Figure 3 shows some suggestive evidence on the mechanism underlying these patterns: there is a positive correlation between the number of regular-season wins won by the Cavaliers and the Heat and the number of restaurants located within one mile of the corresponding stadium.

We use a difference-in-differences approach in order to test whether Mr James' presence had a positive effect on the number of restaurants, and on the number of eating and drinking establishments overall near the stadiums in Miami and Cleveland. Specifically, we run regressions with the following specification:

$$\ln(Establishment_{it}^h) = \alpha + \beta(LeBron)_{it} + \delta_i + \gamma_t + \varepsilon_{it} \quad (1)$$

where $Establishment_{it}^h$ is the number of establishments of type h in city i in year t within the indicated distance away from the stadium in each city. We look at two types of establishments, restaurants and eating and drinking establishments. $LeBron_{it}$ is a dummy variable that equals 1 when LeBron James plays on city i 's team during year t and 0 otherwise. δ_i represents city fixed effects, γ_t represents year fixed effects and ε_{it} is an error term. Latent differences between Cleveland and Miami will be absorbed in the city fixed effects and time-variant factors that affect both cities, like the Great Recession, will be accounted for by the year fixed effects. We carry out a similar exercise for the number of employees at eating and drinking establishments, where the various fixed effects play the same role.

Next we run regressions that examine one city at a time to help identify if there is heterogeneity in Mr James' economic impact. This allows us to compare the variation in numbers of restaurants located in areas that are nearby (defined as within one mile)

and to those that are far away between Cleveland and Miami. Specifically, we run regressions with the following specification:

$$\ln(Restaurants_t) = \alpha + \beta(LeBron)_t + \phi(Near)_t + \rho(LeBron * Near)_t + \varepsilon_t \quad (2)$$

where $Restaurants_t$ is the number of restaurants in year t within one mile from the stadium in each city or outside of that radius. $LeBron_{it}$ is a dummy variable that equals 1 when LeBron James is on the city's team during year t and 0 otherwise. $Near_t$ is a dummy variable that equals 1 when the observation refers to the number of restaurants within 1 mile of a stadium and 0 otherwise. $LeBron * Near_t$ is the interaction variable between LeBron and Near. ε_{it} is an error term.

Results: LeBron in Cleveland and Miami

Table 1 presents the results of the regressions specified in equation (1) above. These test whether Mr James' presence has a positive effect on the number of restaurants, and on the number of eating and drinking establishments overall, near basketball stadiums in Cleveland and Miami. Mr James' impact is strongest in the area immediately surrounding the stadiums, as expected. Specifically, his presence increased the number of restaurants within 1 mile of a stadium by about 12.8% and the number of eating and drinking establishments by about 13.7%. Between 1 and 7 miles, those increases are smaller - 8.7% and 10.7% - and when we go beyond 7 miles, the superstar effect is no longer statistically distinct from nil. This confirms our suspicion: that superstars can make a difference that has a noticeable economic impact, and that the impact is very local.

Table 2 shows the results from regressions similar to Table 1, but where the dependent variable is now employment instead of the number of establishments. Within 1 mile, Mr James' presence raises the number of workers employed by eating and

drinking establishments by 23.5%, but the effect disappears once again beyond the 7 mile radius.

Note that this decay in effect size allows us to exclude any explanations for the effects we find that are unrelated to the basketball stadium and the games that took place there. As Tables 1 and 2 both show, the effects are limited to the immediate vicinity of the stadium. The fact that we do not find an impact of Mr James' presence in the rest of the city shows that it is indeed his presence, not contemporaneous macroeconomic trends, that drive the effect. It is these wider annuli, especially the one that covers areas more than 7 miles from the stadium, that effectively serve as our controls.

Finally, the results of regressions that examine Mr James' effect on each city individually are presented in table 3. The coefficients for Cleveland are reported in column 1 and the coefficients for Miami in column 2. The results show that Mr James' superstar effect is positive and significant on the number of restaurants near the stadium in Cleveland, but not in Miami, an interestingly heterogeneous response.

Discussion: Limitations and Implications

Our findings in this paper show that a superstar athlete's presence on a professional sports team can affect the team's success not just on the field, but also as a driver of economic development. We see this as a "possibility result" more than anything else: what we have shown is that the right athlete, with a high level of success, can have a significant impact on a narrowly defined but well-identified set of outcomes. What this certainly does not mean is that any moderately successful athlete or team will necessarily have a measurable effect on broader notions of economic and social activity; if anything, the fortuitous

combination of Mr James' Ohio origins and local glory may suggest that his impact represents an upper bound on such effects. But even without taking that position, what is clear is that there is a range of potential sources of heterogeneity in the effect size.

We saw an example of such heterogeneity at the end of the previous section, when we found that it was in Ohio, not Miami, where Mr James' impact was notable. Two potential explanations come to mind. Perhaps Mr James is particularly beloved in his native Ohio. Or maybe 'superstar amenities' are substitutes, not complements, and Miami has plenty of them even without Mr James, generating fiercer competition and an attenuated impact of any specific superstar. The latter question, in particular, calls for further exploration and documentation. The most obvious way to address these questions is by moving from the study of what is ultimately a single case to large numbers of similar natural experiments along the lines of what Shoag and Veuger (forthcoming) do for big-box store bankruptcies using the methodology adopted here.

Different, perhaps less statistically focused avenues of research could try to disentangle further what drives the effects we observe. Taken at face value, they suggest that what we observe is a narrow impact on economic outcomes driven by increased attendance at basketball games that is, in turn, caused by a desire to watch the more successful Cleveland Cavaliers and their star player perform. What they do not suggest is that the presence of a superstar athlete immediately transforms the aesthetic meaning of the city in a fundamental manner (Silver and Nichols Clark, 2015); instead, a relatively small chunk of urban space is spectacularized (Bélanger, 2000) and turned into a "tourist bubble" (Judd, 1999). Understanding better which of these qualitatively different narratives dominates under which conditions is perhaps the most important challenge

here, as we attempt to gauge the long-term impact of phenomena like the one studied here. For now, our conclusion is that even LeBron James is indeed no “panacea to urban ills” (Silk and Amis, 2006), but our estimation method is of limited value – because of the outcomes measures used, the time horizons necessarily studied, and the nature of the evidence deployed – when it comes to assessing the intangible, non-monetary impacts of Mr James’ presence (Mules and Dwyer, 2005; Pye et al., 2015).

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Declaration of Interest

We declare no financial or organizational conflicts of interest. Shoag supports the Cleveland Cavaliers.

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Tables

Table 1. The LeBron James Effect on Number of Establishments

	1 Mile		Between 1 and 7 Miles		More than 7 Miles	
	(1)	(2)	(3)	(4)	(5)	(6)
	Restaurants	Eating and Drinking Establishments	Restaurants	Eating and Drinking Establishments	Restaurants	Eating and Drinking Establishments
LeBron	0.1277** (0.0523)	0.1370* (0.0729)	0.0871* (0.0399)	0.1073* (0.0515)	0.0547 (0.0363)	0.0726 (0.0442)
City Fixed Effects	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
R^2	0.648	0.551	0.967	0.915	0.953	0.905
Observations	20	20	20	20	20	20

Note: This table reports estimates of the following form:

$$\ln(\text{Establishment}_{it}^h) = \alpha + \beta(\text{LeBron})_{it} + \delta_i + \gamma_t + \varepsilon_{it}$$

where $\text{Establishment}_{it}^h$ is the number of establishments of category h in city i in year t within the indicated distance from the relevant stadium. There are two categories of establishments: restaurants, and eating and drinking establishments. LeBron_{it} is a dummy variable that equals 1 when LeBron James plays in city i 's team during year t and 0 otherwise. δ_i represents city fixed effects and γ_t represents year fixed effects. Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2. The LeBron James Effect on Number of Employees

	1 Mile	Between 1 and 7 Miles	More than 7 Miles
	(1)	(2)	(3)
LeBron	0.235** (0.086)	0.230 (0.159)	0.067 (0.184)
City Fixed Effects	X	X	X
Year Fixed Effects	X	X	X
R^2	0.949	0.884	0.495
Observations	20	20	20

Note: This table reports estimates of the following form:

$$\ln(\text{Employees}_{it}^h) = \alpha + \beta(\text{LeBron})_{it} + \delta_i + \gamma_t + \varepsilon_{it}$$

where Employees_{it}^h is the number of employees working at eating and drinking establishments in city i in year t within the indicated distance away from the stadium in each city. LeBron_{it} is a dummy variable that equals 1 when LeBron James plays in city i 's team during year t and 0 otherwise. δ_i represents city fixed effects and γ_t represents year fixed effects. Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3. The LeBron James Effect by City

	Restaurants	
	<u>Cleveland</u>	<u>Miami</u>
	(1)	(2)
LeBron	-0.003	0.152
	(0.040)	(0.126)
Near	-2.153***	-2.584***
	(0.041)	(0.107)
LeBron*Near	0.137**	-0.031
	(0.056)	(0.179)
Constant	7.282***	7.763**
	(0.029)	(0.076)
R^2	0.998	0.985
Observations	20	20

Note: This table reports estimates of the following form:

$$\begin{aligned} \ln(\text{Restaurants}_t) &= \alpha + \beta(\text{LeBron})_t + \phi(\text{Near})_t \\ &+ \rho(\text{LeBron} * \text{Near})_t + \varepsilon_t \end{aligned}$$

where Restaurants_t is the number of restaurants in year t within or outside a one mile radius from the stadium. LeBron_t is a dummy variable that equals 1 when LeBron James plays on the city's team during year t and 0 otherwise. Near_t is a dummy variable that equals 1 when the observation refers to the number of restaurants within 1 mile of a stadium and 0 otherwise. $\text{LeBron} * \text{Near}_t$ is an interaction variable between LeBron and Near . Results in **column 1** come from a regression in which only observations from Cleveland are included; results in **column 2** apply to Miami. Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figures

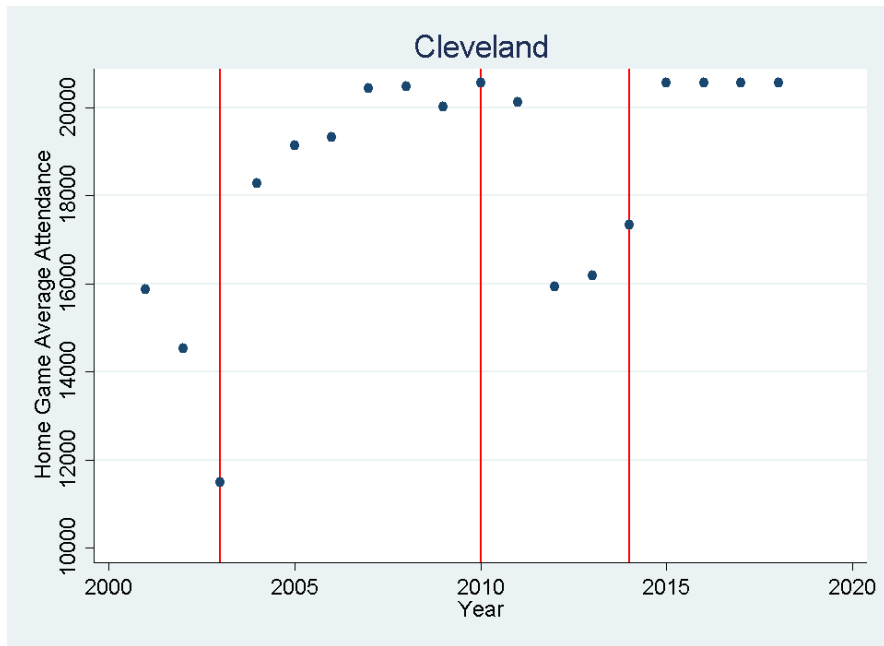


Figure 1. Average Attendance at Cleveland Cavaliers Games

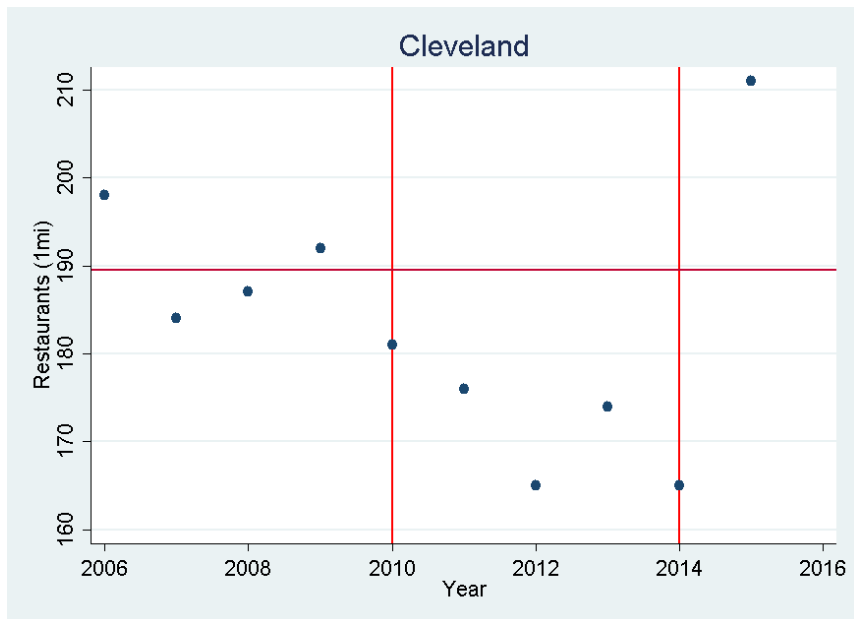


Figure 2a. City Timeline: Cleveland

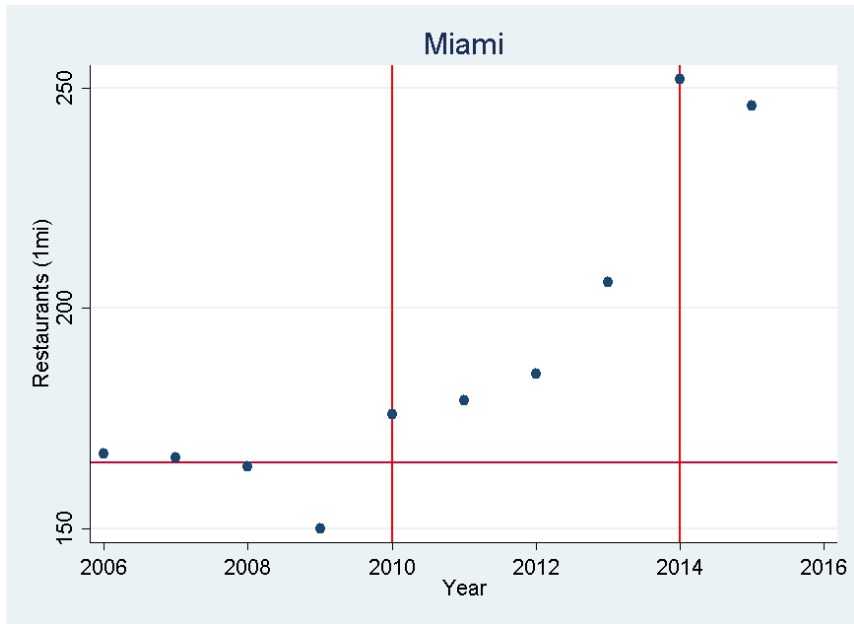


Figure 2b. City Timeline: Miami

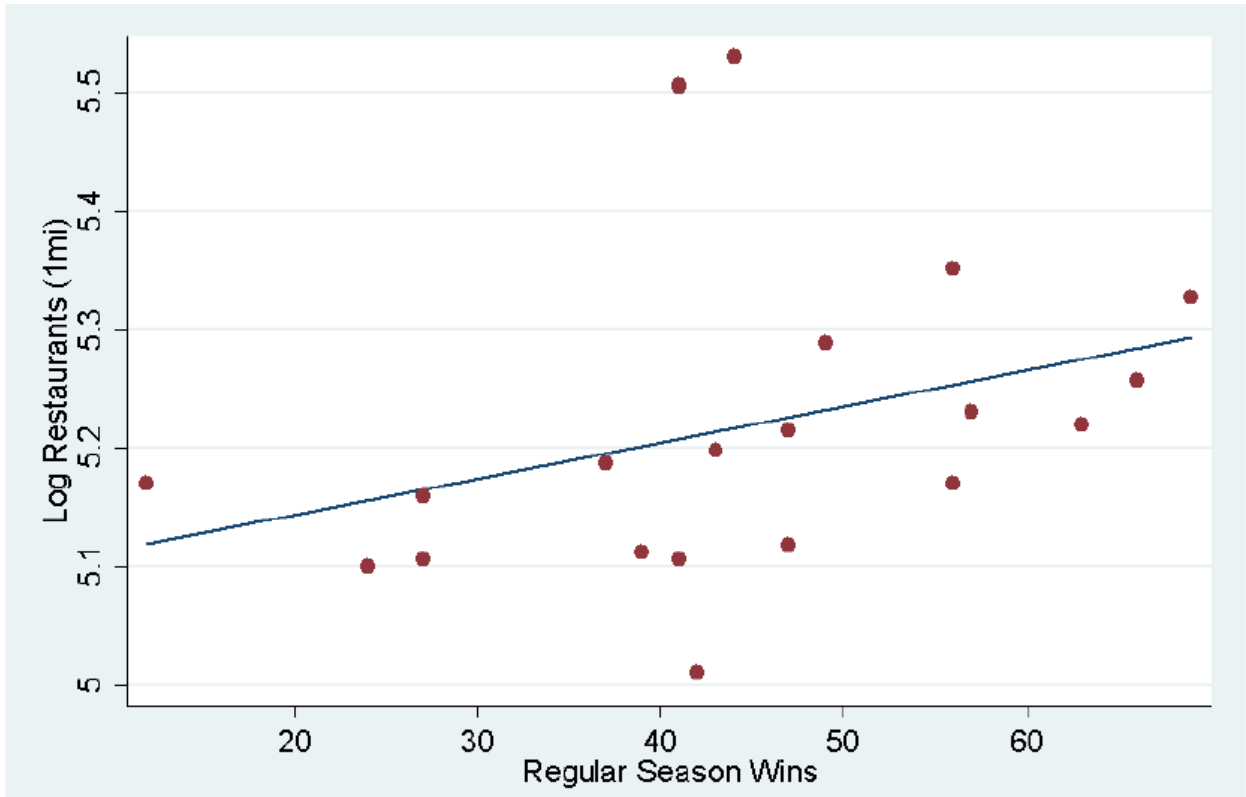


Figure 3. Number of Victories to Number of Restaurants

Figure Captions

Figure 1: The figure shows the average number of attendees at regular-season home games played by the Cleveland Cavaliers for each season from 2001 through 2018. LeBron James joined the Cleveland Cavaliers in 2003, left in 2010, and rejoined in 2014. Attendance numbers come from ESPN.com NBA Attendance Reports.

Figure 2a: The figure shows the number of restaurants within 1 mile of the Quicken Loans Arena in Cleveland for each year between 2006 and 2016. LeBron James left the Cleveland Cavaliers in 2010 and rejoined in 2014. The horizontal line represents the average number of restaurants within 1 mile of the stadium before 2010.

Figure 2b: The figure shows the number of restaurants within 1 mile of the American Airlines Arena in Miami for each year between 2006 and 2016. LeBron James joined the Miami Heat in 2010 and left in 2014. The horizontal line represents the average number of restaurants within 1 mile of the stadium before 2010.

Figure 3: The best-fit line shows the positive correlation between the number of victories a team won in a certain season to the log-value of the number of restaurants within 1 mile of the stadiums. Only data from the Cleveland Cavaliers and Miami Heat are included.