

AN ANALYSIS OF THE DECLINE IN MLB STADIUM ATTENDANCE  
AND THE MARKETING TECHNIQUES THAT  
CAN BE UTILIZED TO REVERSE IT

by

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## ABSTRACT

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With the increase of ticket prices, access to streaming options, and alternate entertainment options, Major League Baseball has struggled to fill the seats in its stadiums. Attendance rates have been steadily decreasing over the past decade forcing baseball's executives to develop unique ways to generate revenue. Television/media contracts and licensing agreements have allowed teams to increase revenue figures, making up for the drop in ticket sales. But how do teams combat the recent drops in attendance? What marketing campaigns have been successful? Are there factors that teams can manipulate to boost attendance? This dissertation aims at identifying ways MLB teams can reverse the attendance trend and fill their stadiums. After all, this is America's pastime we're talking about.

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## INTRODUCTION

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In North America, there are 4 professional sports leagues that dominate the market. Commonly referred to as ‘The Big 4’, the teams are as follows: The National Football League, the National Basketball Association, The National Hockey League, and Major League Baseball. MLB, the oldest of the four, was founded in 1903 after the National League and American League combined. It currently features 30 teams in 17 different states, as well as a team in Washington D.C. and Toronto, Canada. Each team plays 162 regular-season games with the top 10 teams making it to the playoffs. In recent years, Major League Baseball has brought in a total of over \$10 billion in revenue per season (Allentuck and Draper). However, as the popularity of college sports, other professional sports leagues, and at-home viewing experiences continues to grow, MLB has faced some difficulties filling its stadiums for games. Attendance totals have declined seven of the past ten years in the league.

Studies have been conducted to determine the causes behind this drop in attendance; many believe the cost of attending games, length of baseball games, aging fanbase, and improved streaming and television options are to blame. In 2019, Major League Baseball saw its lowest attendance total since 2003. It was 2007 when the highest season attendance record was set; that year, 79,484,718 people attended an MLB game (Major League Baseball Miscellaneous Year-by-Year Averages and Totals). With increased revenue coming from media right fees/television deals and licensing agreements, MLB has been able to cushion this blow. Total revenue has increased by 70% over the past 10 years (Allentuck and Draper).

This thesis will provide a history of Major League Baseball, diving into attendance patterns and trends. Then it will aim at determining what factors correlate with higher stadium attendance. Lastly, whether or not an MLB team can control or manipulate these factors will be explored.

Using the results from this analysis, recommendations will be made to aid MLB teams in increasing their stadium attendance in the coming years.

This analysis will be beneficial to not only MLB teams, but their minor-league counterparts, college teams, and other professional sports leagues. The goal is for teams to be able to better identify factors that can improve their attendance. Does the price of parking alter attendance? Do game day promotions actually work? Have the motivational factors determining whether or not to attend an MLB game changed? Questions like these will be probed using data analytics, human surveys, and collection of secondary research.

## PRELIMINARY RESEARCH

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### **History of Major League Baseball**

Major League Baseball is the foremost baseball league in the world. With 30 major league teams and a development program including 256 minor league teams, the world's top talent all flocks to North America to try and compete in the "big leagues". Analysis of the league's history will be beneficial in identifying trends and success patterns. A look back at marketing tactics used by teams will help identify what differentiates a successful campaign from an unsuccessful one.

Professional baseball in the United States began in 1871 when the National Association of Professional Base Ball Players was created. Five years later, the National League of Professional Baseball Clubs, also known as the National League, was formed. In 1901 the American League was established and in 1903 the first official World Series took place between the two leagues (National League of Baseball is Founded). Teams continued to join the league throughout the 1900s with the Arizona Diamondbacks and Tampa Bay Rays being the most recent additions in 1998. The dynamic of Major League Baseball changed often during the early 1900s when events like The Great Depression, World War I, World

War II, and racial integration all turned the league on its head. As one of the prime sources of entertainment, the attendance of games had a strong correlation with historical events.

The Great Depression is an incredible example of how baseball teams can become creative with their revenue tactics. In the 1920s, MLB was hitting its stride and attracting attention from everyone in America. Popularity was at an all-time high. However, when the stock market crashed in 1929, teams had to deal with attendance rates dropping 40% causing “every team, including the wealthy Yankees, [to lose] money for at least a year or two in the decade” (Belson). In 1932, only 2 of the 16 MLB teams made money: the New York Yankees and the Chicago Cubs. Drastic times called for new, out of the box approaches to generate revenue. Some of the top-performing tactics were:

- The St. Louis Cardinals expanding their minor-league networks
- The Chicago Cubs not charging women for admission
- The Cincinnati Reds hosting the first-ever night game
- The New York Yankees selling seats in the bleachers for 50 cents
- Multiple teams generating income by live radio broadcasts (a tactic that was originally believed to cause lower attendance rates)

Despite the economic struggle, not a single MLB team folded during this era (Belson). After World War II, when the troops returned from war and the country entered a season of economic prosperity, attendance at MLB games began to boom again. Not every marketing campaign worked; the ones that saw the most success were revolutionary and even went against what many executives believed was common practice. Letting women in for free may have seemed counterintuitive, but the rise in ticket revenue from the men that accompanied them surpassed prior numbers. The same mindset applies to 50 cent bleacher tickets; although ticket prices were cheaper

than they previously had been, an increase in the number of tickets sold covered the difference. These strategies appealed to the consumers' need for low-cost entertainment during The Great Depression.

Baseball attendance changed again in the late 1940s as racial integration began to take place. Jackie Robinson, the first African American player in the MLB, debuted with the Brooklyn Dodgers on April 15<sup>th</sup>, 1947 (The Editors of Encyclopedia Britannica). In 1946, the Dodgers saw 1,796, 824 spectators at their games; In 1947, the year of Robinson's debut, there were 1,807,526 spectators. Statistically, these numbers are nearly identical. However, with Robinson's debut, thousands of black fans attended Ebbets Field for the first time, simultaneously driving out white fans.

In Henry D. Fetter's dissertation titled "*Racial Fault-lines in 'Baseball's Great Experiment: Black Perceptions, White Reaction'*", he speaks on the fans' response to racial integration. He explains that

Newspaper reports of "thousands" of black fans thronging Ebbets Field may well have discouraged a number of white fans to avoid the racial integration that now marked the grandstand as well as the playing field...Although at least a certain amount of the initial wariness of white fans about being part of a crowd that included large numbers of blacks for the first time wore off after a few months, white fans never again attended Dodger home games in their pre-Robinson numbers. Computation of "attendance strength" for major league clubs (a measure of the "expected share of league attendance for the average major league club of the same playing ability") calculated as part of the congressional anti-trust inquiry into organized baseball in 1951, showed attendance for the Dodgers in the late 1940s dropping below historical attendance levels for teams compiling comparable won-loss records (Fetter).

Needless to say, MLB attendance tends to ebb and flow with national trends. The Great Depression led to drops in attendance rates. Soldiers returning from World War II caused a spike in attendance. The slow process of racial integration throughout the 1940s, 1950s, and 1960s increased African American spectator rates, but decreased attendance of the white demographic. Current trends in 2019 include increased streaming options, high popularity of social media sports highlights, and an increase in alternate spectator experiences (standing room tickets, multi-use facilities outside the ballpark, private club tickets). These trends have led to fewer spectators in seats at MLB games over the past decade.

### **Issues Facing Today's Teams**

Today's MLB teams are facing issues unique to this decade. The advancements in technology provide new opportunities for marketing departments to promote and publicize their team. However, on the flip side of the coin, teams struggle to bring spectators to the stadium when they have the game in their pocket. After extensive research, the most relevant issues plaguing the MLB are:

- A multitude of entertainment alternatives
- An increase in sports streaming offerings
- An increase in total cost to attend games
- 'Boring' games

Everyone, including MLB's commissioner, has a different opinion on the true cause behind the decline in attendance rates. However, it is far more likely that it is a combination of variables affecting teams. Details about each presented cause will be explored further.

### *A Multitude of Entertainment Alternatives*

Picture this. It's mid-June and you and your friends are looking for something enjoyable to do that evening. Do you attend an MLB game? Maybe you would prefer saving money and streaming your favorite TV show on Netflix from the comfort of your home. Maybe you decide to visit the new brewery that just opened up in town. There's also that new movie that debuted this weekend. You have no idea what to choose when you remember the yoga class your friend has been inviting you to. Needless to say, there are hundreds of entertainment options for the average consumer to choose from. Unfortunately for MLB, the number of alternative entertainment options continues to increase.

Savvy businesspeople recognized that American consumers were looking for more options and they capitalized. Some of these ideas were brand new, but many expanded on current options. A restaurant is no longer just a place to eat food, but somewhere that provides an aesthetic worthy of an Instagram post. Interior designs are more important than ever, the food needs to look high-class and extravagant, and the drinks better be more than just a cup with some liquid. This new era of entertainment includes unique food and drink options (breweries, coffee shops, extravagant brunches), streaming services that allow you to never leave your house (Netflix, Disney+, Hulu), and a new way to take in the arts (movies in the park, pop-up concerts, interactive museums). MLB has a solid product but needs to determine ways to make the experience more innovative and worth sharing. Many are referring to this problem as "option overload". Dr. Sheena Iyengar, an expert on consumer choice and professor at Columbia University, conducted a study regarding the paradox of choice in 1995. Results state that "the presence of choice might be appealing as a theory...but in reality, people might find more and more choice to actually be debilitating". When there are too many choices, consumers can shut down and choose to not pursue any of them.

### *Increase in Sports Streaming Options*

There used to be two options for taking in a baseball game while not at the park: live TV coverage from a local network or the radio. Now, viewers can choose between a multitude of streaming platforms from their TV, phones, computers, radios, etc. Service providers like DirecTV, Comcast, and Spectrum all provide sports packages allowing customers to stream their favorite game. There are also dedicated streaming services like Hulu, fuboTV, Sling TV, and Vudu with similar offerings. MLB itself has MLB.tv that allows customers to choose between specific-team or entire league packages. It has never been easier to watch an MLB game and the need to go to ballpark has diminished. This streaming issue has plagued other leagues as well; “the 2018-2019 NFL season saw the lowest attendance since 2010”. In college sports, “football saw its seventh decline in eight-years in 2018, a 22-year low”. The NBA, despite seeing incredible star power, saw “regular-season attendance dip for the first time in five years” (Brown).

Increases in streaming options have also been said to decrease team loyalty. If every game is available to watch, what is preventing consumers from watching multiple teams and losing loyalty to their “home team”. The Chicago Cubs’ past relationship with WGN illustrates this phenomenon well. From 1948 to 2015, WGN had exclusive rights to all but the Cubs nationally streamed games (Wyllys). Fans would return from or work or school to promptly turn on WGN for the game. Fans were loyal to WGN and loyal to the Cubs. It was the only team, other than the White Sox, that Chicago-area fans had access to. This developed a deep devotion to the team resulting in more games attended in person.

### *Increase in Total Cost to Attend Games*

MLB likes to pride itself on being the cheapest games to attend among the four US major sports leagues (MBA, NFL, NBA, NHL). This rings true, especially with the average ticket price

being just \$32.99 (Hartweg). This is partly due to the number of games in each league’s season; MLB has 162, the NFL has 17, the NBA has 82, and the NHL has 82. With more games to draw revenue from, ticket prices can be cheaper for MLB games. Team Marketing has put together an index to compare the cost of attending a game within these leagues: “The Fan Cost Index® compiles prices for four average priced general tickets, parking for one car and the least expensive in-game pricing for: two draft beers, four soft drinks, four hotdogs, and two (adult-size) team caps” (Hartweg). The FCI aims at predicting the cost for a family of four to attend a game. Below are FCI comparisons for the major sports leagues in 2018.

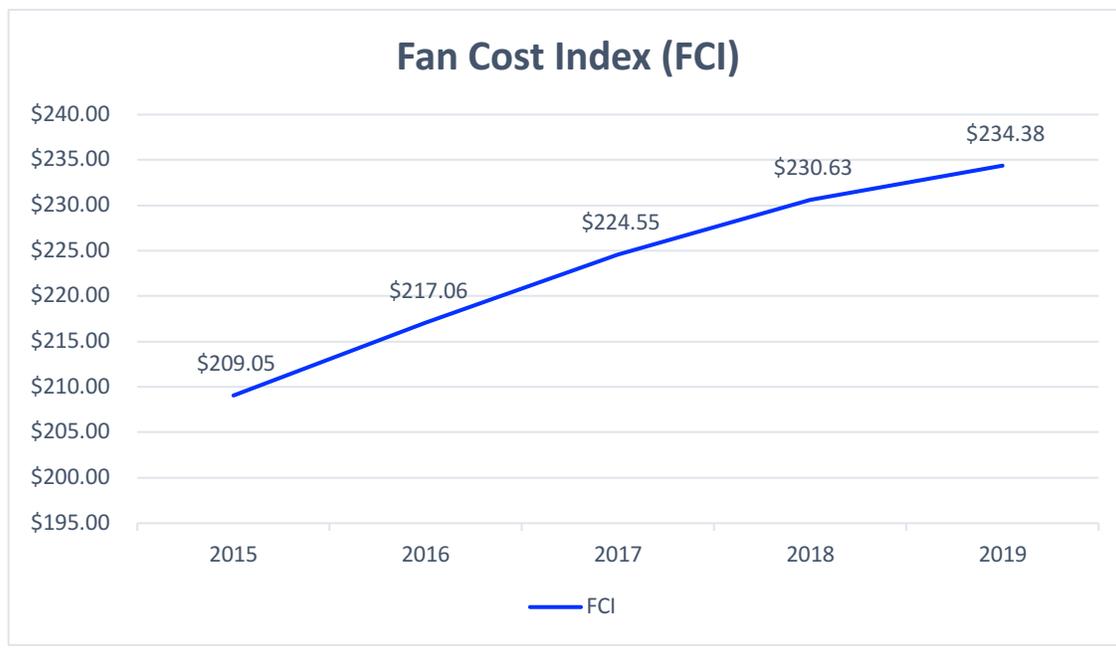
#### Fan Cost Index Values in 2018

<b>League</b>	<b>MLB</b>	<b>NFL</b>	<b>NBA</b>	<b>NHL</b>
<b>FCI 2018</b>	\$230.38	\$536.93	\$420.58	\$420.40

These costs are “determined through calls, emails, and research with teams, venues, concessionaires and season ticket holders” (Hartweg). While MLB is the cheapest, prices continue to rise each year. While ticket prices are far lower than other leagues’ games, items used in the FCI like parking, food/drink, and apparel prices are similar across leagues. This metric helps display how the cost for a night at the ballpark is often much higher than the ticket price. Currently, \$58.60 per person (calculated by dividing the 2019 MLB FCI of \$234.38 by four) is more costly than other entertainment options like attending a movie in theaters, a modest dinner and drink, streaming movies/TV at home, or bowling. In an effort to save money, Millennials and Gen Z viewers are choosing cheaper entertainment options. Even diehard baseball fans are choosing to watch the game at sports bars or streaming it from home more often than in the past. Below are MLB FCI values over the past five years.

2015-2019 MLB Fan Cost Index Values

<b>Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>FCI</b>	\$209.05	\$217.06	\$224.55	\$230.63	\$234.38
<b>% Change</b>		3.8%	3.5%	2.7%	1.6%



\*Data was collected from TeamMarketing.com

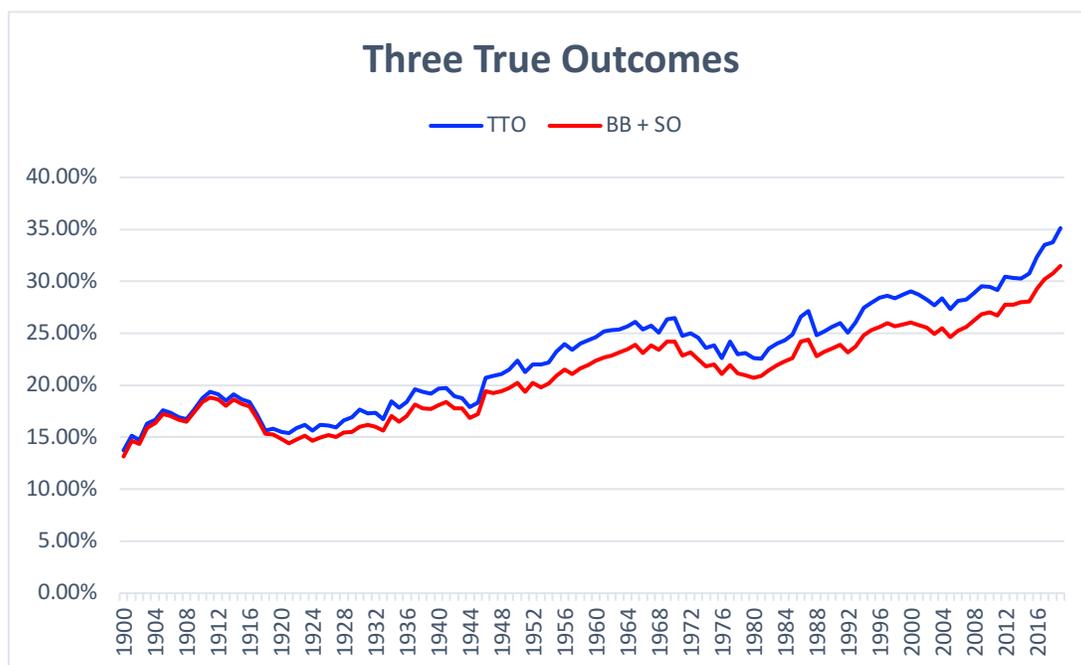
*'Boring' Games*

More than ever, baseball games are being slapped with the boring label. The common argument is that games are too long. "Pace of play" is a hot button phrase used to explain lower attendance rates. The average time of a game has consistently increased over the past 100+ years.

<b>Year</b>	<b>1900-1950</b>	<b>1951-2000</b>	<b>2001-2019</b>
<b>Average Time of Game</b>	2:03	2:39	2:58

\*Data collected from Baseball-reference.com

From 2012-2019, all of the average time of game values were over 3 hours. 2019 reached a new high with three hours and ten minutes being the average duration of a game. While this argument certainly has merit and data points backing it, there is also a strong argument that change in the style of game is actually the core reason. Strikeout rates are at all-time highs. The number of stolen bases is down. The creativity used by players in the early years of the league has dissipated. The use of “small ball” (sacrifice bunts, stolen bases, and the common goal of getting runners on base) is waning. One value that is especially gaining attention is “three true outcomes”. This refers to a walk, strikeout, or homerun; they are referred to as the three true outcomes being that no defense is required beyond the pitcher and catcher. In layman terms, it’s when the ball is not put in play by the batter. The less the ball is in play, the less exciting the game is. Spectators don’t want to watch players walk to first base or strikeout; they go to games to see incredible snags in the outfield, hitting parades, and the highlight-reel plays. Below is a chart displaying the percent of the time one of the “three true outcomes” (blue) and strikeout or walk (red) occur.



\*Data collected from Baseball-reference.com

The largest increase in “three true outcomes” plays has occurred in the last five-years. Often dubbed the “launch angle era”, today’s players are far more focused on achieving an ideal (usually higher) launch angle to avoid groundballs and hit more homeruns. Sports Illustrated writer, Tom Verducci, explains that “in just three seasons, from 2015 to ’17, batters hit 3,023 fewer ground balls and 1,196 more homeruns, including a record 6,105 dingers last year. There were 3,157 more fly balls...2,658 more strikeouts. Teams scored 4.65 runs per game in ’17, up from 4.07 in ’14” (Verducci). While home runs are certainly not boring, routine flyballs and strikeouts are.

### *Final Thoughts on Issues*

After a review of current literature, it is clear that the sports industry has developed 4 key issues that have led to low MLB attendance rates. The multitude of entertainment alternatives, increase in sports streaming offerings, increase in total cost to attend games, and ‘boring’ games are all unique factors providing their own challenges. While these problems cannot be immediately eradicated, changes can be made to lessen their detrimental effects. Further research will aim at finding remedies for these issues and identifying any issues that have been missed.

## FACTORS AFFECTING ATTENDANCE RATES

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The goal of this research was to identify what factors affect stadium attendance. The factors were split into two types: those that cannot be controlled by an MLB team and those that can be. Identifying all factors, even the ones that cannot be controlled, is important because it allows teams to identify strengths and weaknesses. For example, is a new team like the Arizona Diamondbacks automatically at a disadvantage compared to a historic team like the Boston Red Sox? To answer that question, it needs to be understood if the length of time a franchise has existed affects stadium

attendance. Questions of a similar nature can be answered by testing for correlation between the attendance rate and the variable in question. Does the price of parking make a difference? Will fans attend games even if their team has a losing record? Do teams with more followers on social media have higher attendance rates? These factors will be tested using statistical analysis and team attendance rates from 2010-2019. Data was collected from numerous sources, but primary attendance numbers team statistics were from [baseball-reference.com](http://baseball-reference.com), [MLB.com](http://MLB.com), and [statistica.com](http://statistica.com).

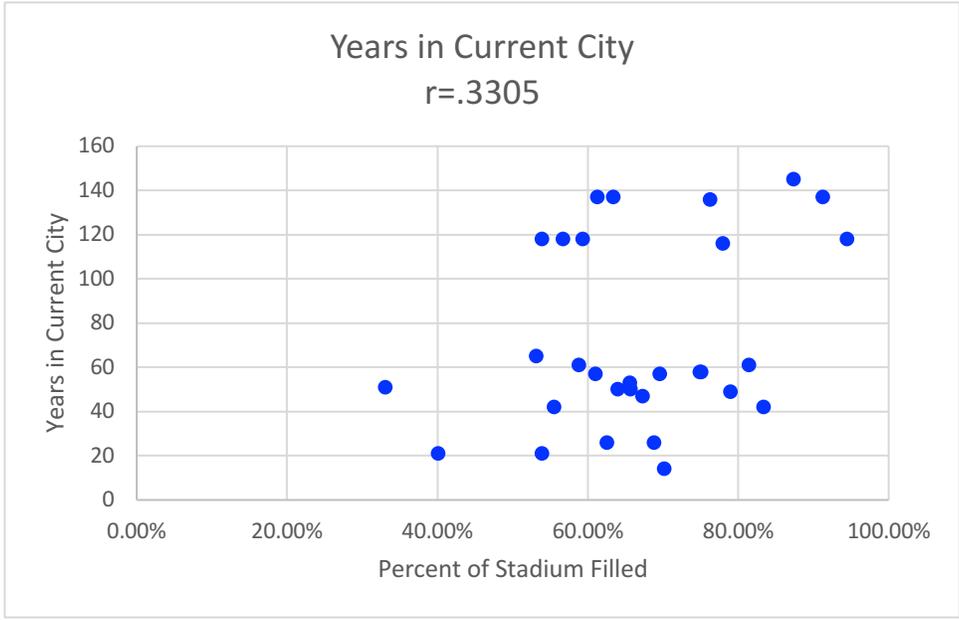
Correlation tests will result in a score from -1 to 1; 1 meaning perfect positive correlation and -1 meaning perfect negative correlation. 0 is the strongest possible disagreement between the variables. To even the playing field for all the teams, percent of the ballpark filled will be used instead of true attendance numbers when running correlation tests. Teams like the Cleveland Indians, who have the smallest seating capacity in the MLB, will not be punished when comparing to teams with larger ballparks. In some cases below, true attendance numbers may be used to provide additional insight; those cases will be explicitly stated.

### **Uncontrollable Factors**

Uncontrollable factors, those that MLB teams are unable to change and/or manipulate, are still relevant to this study because they can help teams recognize their advantages and disadvantages. While all of these factors can't be directly modified by a team, there is still a possibility they will change in the future. For instance, a team cannot alter the population of the city they are in, but the population may change in future years for a multitude of reasons. Factors will be tested for positive, negative, or no correlation.

*Years in Current City*

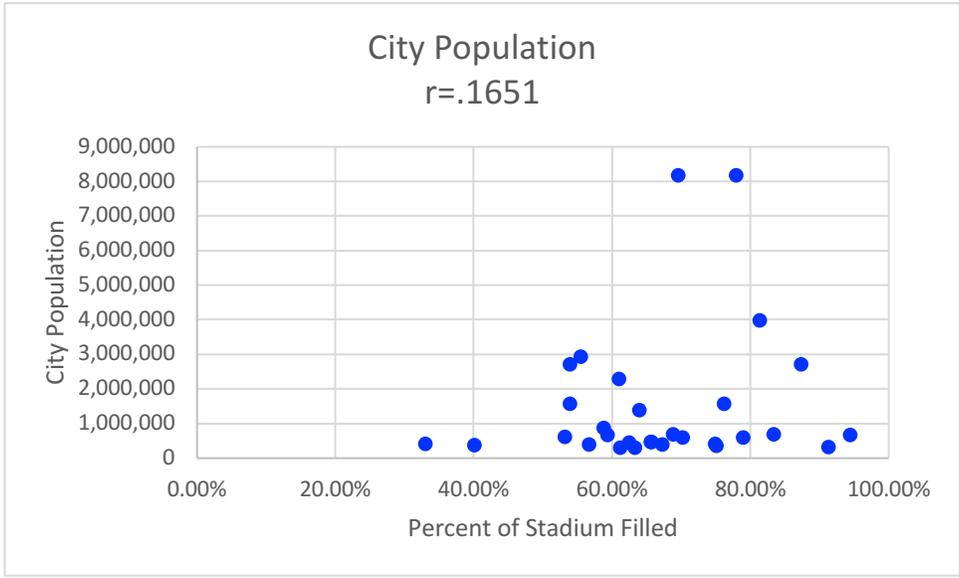
Teams like the New York Yankees, St. Louis Cardinals, and Chicago Cubs all seemingly benefit from over 115 years in their current city. These teams made up 3 of the top 4 teams ranked by total attendance in 2019; they were also the top 3 teams after averaging attendance numbers from 2010 to 2019. However, there is a story behind that statistic. The Pittsburgh Pirates, who have spent 137 years in their city, the Detroit Tigers (118 years) and the Chicago White Sox (118 years) all ranked in the bottom 7 in total attendance in 2019. A correlation test between years in their current city and the average percent of the ballpark filled from 2010-2019 resulted in a correlation coefficient of .3305. Relatively speaking, there is a correlation between the two variables, but it is not very strong. A case could be made that long-lasting tradition in a single city is beneficial for teams, but not being there for 100+ years does not mean a team cannot be successful.



It appears that although the teams with the worst attendance have spent less time in their city than the teams with the best attendance, there is no definite correlation between years in a city and stadium attendance. For example, the Seattle Mariners have only been in existence since 1977, (42 years) yet have the 4<sup>th</sup> best percentage of the stadium filled value from 2010 through 2019.

*City Population*

City population is a difficult statistic to measure. Surrounding metroplexes can provide strong percentages of ticket sales but may not be included in the city population. Take the Texas Rangers for example; they are based in Arlington, Texas, but draw strong crowds from Dallas and Fort Worth. The same goes for the Oakland A's. Oakland's population is only 419,267 people, but many of their fans come from the neighboring San Francisco population. To be as impartial as possible, the true city population, not the metroplex population, was tested. This resulted in a correlation coefficient of .1651 from 2010 through 2019 and a correlation coefficient of .3483 in 2019 alone.

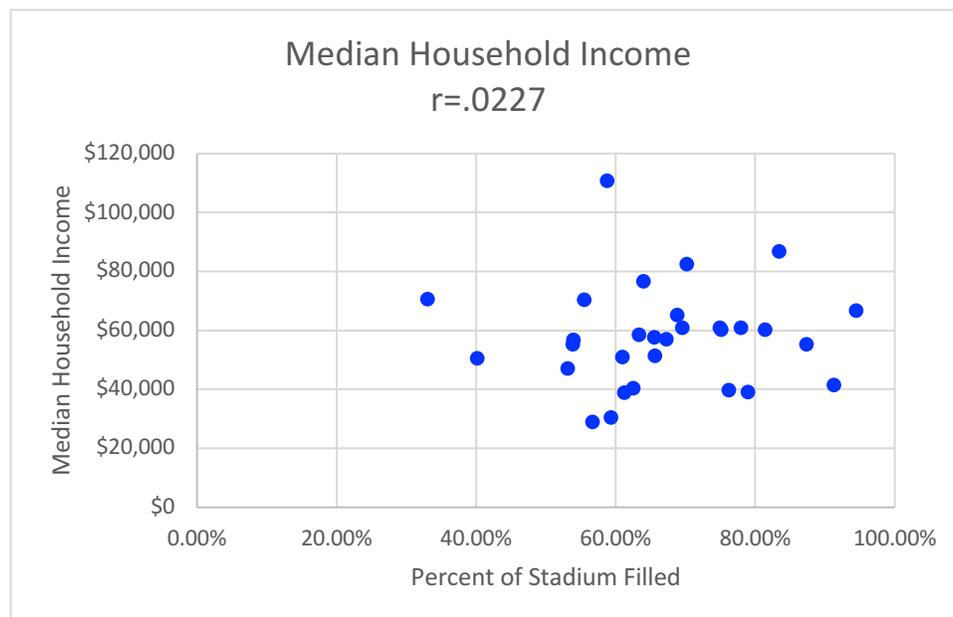


It is likely that teams such as the Yankees, Dodgers, and Cubs (teams from 3 of the 4 largest cities by population) will never see terribly low attendance rates. They have such a large fanbase in part due to their city's high population. It is a luxury that teams like the Miami Marlins or Pittsburgh Pirates do not have. However, there is not a significant overall correlation between attendance and city population. In fact, if you divide 2019 total stadium attendance by city population, the Chicago White Sox and Toronto Blue Jays ranked as the worst teams in the MLB.

Both teams come from cities with populations of over 2.7 million people. Teams from small-market cities, however, may sign less lucrative television deals due to a smaller overall fan base than large market teams.

### *Median Household Income in City*

Earlier, the case was made that rising costs are preventing people from choosing MLB games. The total cost to attend a game has increased each year, totaling a 12.12% increase since 2015 (according to the FCI). According to the Bureau of Labor Statistics' consumer price index, the dollar experienced an inflation rate of 8.58% in that same time frame. After subtracting the figures, it can be deduced that the cost to attend MLB games has increased a true 3.54% since 2015. Now, it's important to see if consumers' average income correlates with stadium attendance. To do this, the median household income in the city in which the team plays was tested for correlation with the percent of the stadium filled each game. There was virtually no correlation with a coefficient of .0227.

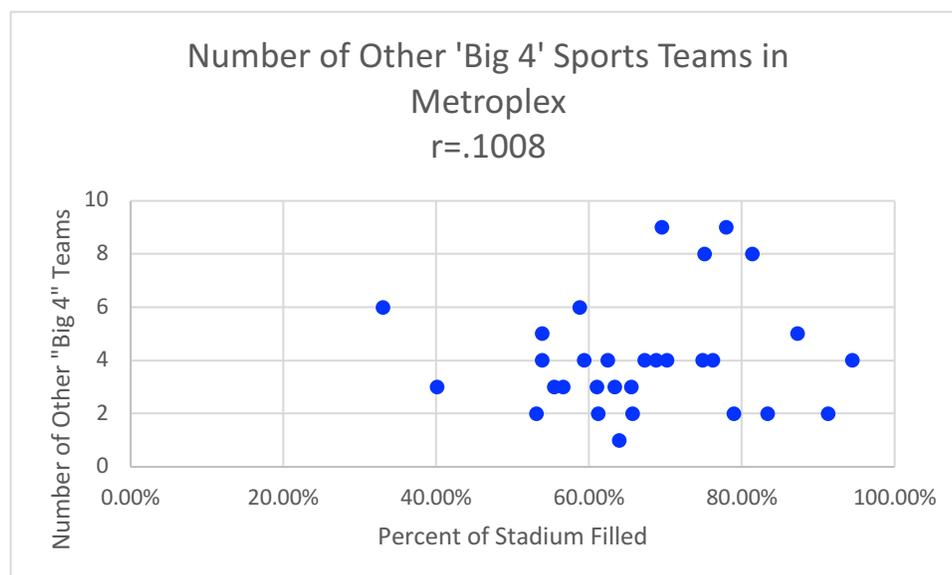


San Francisco had by far the highest median household income at \$110,816 but the Giants have experienced lackluster attendance rates despite winning the World Series in 2010, 2012, and

2014. St. Louis, on the other hand, came in with a median household income of just \$41,441 but has filled their stadium on average 91.23% over the past 9 years. There is not an argument to be made that the median household income of the hometown affects attendance rates.

#### *Number of Other 'Big 4' Professional Sports Team in the City*

The multitude of other entertainment options available was another reason stated for declining attendance rates. While having most of the summer to themselves, MLB has to compete with the NHL playoffs in April and May, as well as the NFL in September and October. While having to compete with other sports teams for spectators, some may argue that having multiple 'Big 4' teams produces a strong sports support network within the city. Some MLB teams have to compete with 6,7, or 8 other teams, but then there are some teams like the San Diego Padres who are the only professional sports team in their city. After running statistical correlation tests, there appears to be no significant correlation between the number of 'Big 4 teams in the city and stadium attendance.



### *Final Thoughts*

After running correlation tests for the number of years in a current city, the city population, the median household income, and the number of other 'Big 4' sports teams in the city, there was no strong correlation with any of the variables. It seems that the playing field between teams is rather fair. People will try to argue that teams like the New York Yankees or LA Dodgers have to be at an advantage thanks to population size and median income, but other ballclubs like the St. Louis Cardinals have proven a large city with high median income is not necessary for successful ticket sales each year. Others may think that the tradition of loyalty the Red Sox and Cubs have built in their cities easily propel them above everyone else, but the Seattle Mariners have proved them wrong by being a newer team with great attendance numbers from 2010-2019.

### **Controllable Factors**

Controllable factors are those that an MLB team can intentionally alter or those that can be changed by the decisions made by a team. For example, a team can decide what price to sell tickets, hotdogs, and beer at; that is an intentional decision. Furthermore, teams are unable to willingly choose their record but can make draft picks, trades, or sign player/manager contracts that ultimately decide their wins and losses. These factors will help identify what MLB teams can change to help boost their stadium attendance.

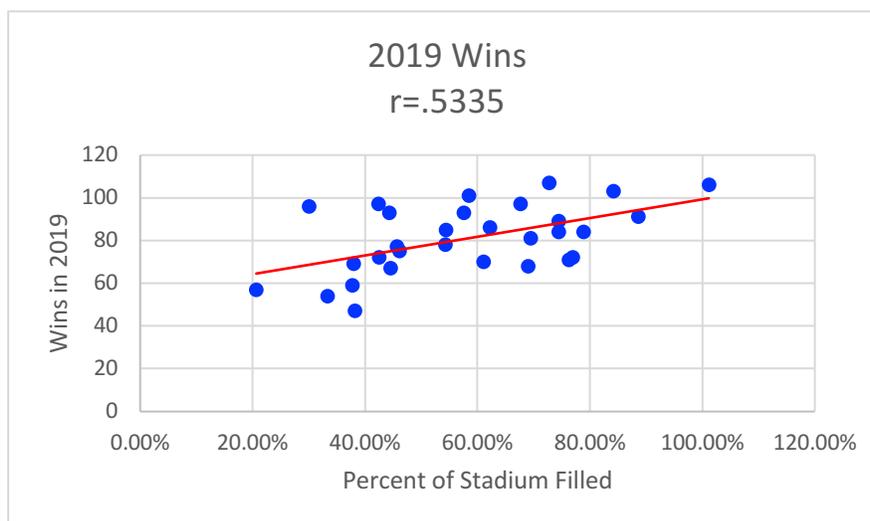
### *Team Record*

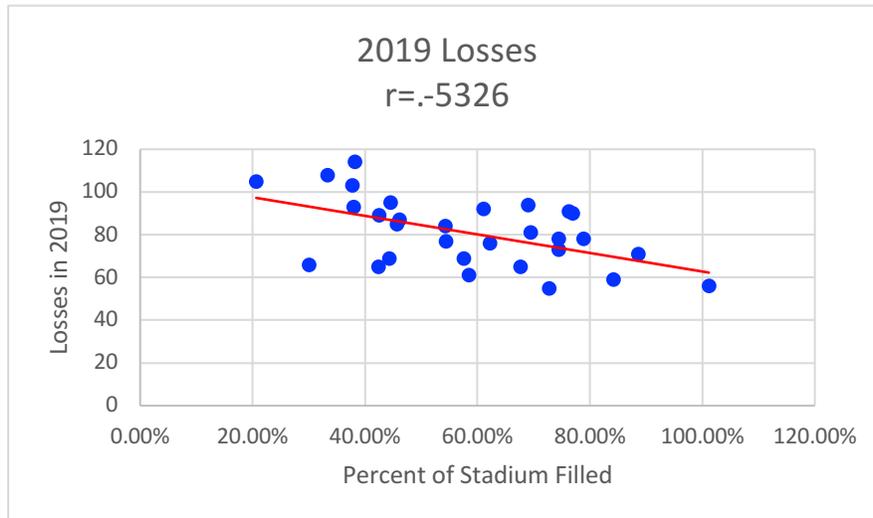
When determining what factors alter MLB stadium attendance, team record is often the first to come to mind. It makes sense; if the team is winning, more people want to attend games. If the team is losing, why bother paying to suffer through nine innings of poor baseball. Maury Brown, a national MLB writer, explains "that the biggest declines in attendance year-over-year

[2018 to 2019] came from teams that had exceptionally bad records. Four teams finished with over 100 losses” (Maury). Those four teams were the Detroit Tigers, Miami Marlins, Baltimore Orioles, and Kansas City Royals. Respectively, they filled 38.20%, 20.64%, 33.28%, and 37.65% of their stadium on average, each game. The Toronto Blue Jays, the first worst record in 2019, saw the worst decrease in attendance losing 575,000 total spectators from 2018 to 2019. That equates to about 7,100 fans a game. They had a record of 67 wins and 95 losses.

After comparing how many wins each team had in 2019 to stadium attendance in that same year, a correlation coefficient of .5335 was produced. That is the strongest correlation of any variable tested thus far. 2019 losses were also compared to stadium attendance with a resulting coefficient of -.5326. Scatter plots with coordinating trend lines for both wins and losses are displayed at the end of this section.

It is rather safe to assume that a team’s record will affect their ticket sales. However, the fix to this issue is not easy or clear cut. The goal of every single MLB team is to have as many wins as possible, ultimately leading to a World Series Championship. Instead, teams should focus on maximizing ticket sales and other revenue sources while they have strong records. That makes the weight of a bad season not nearly as strong.

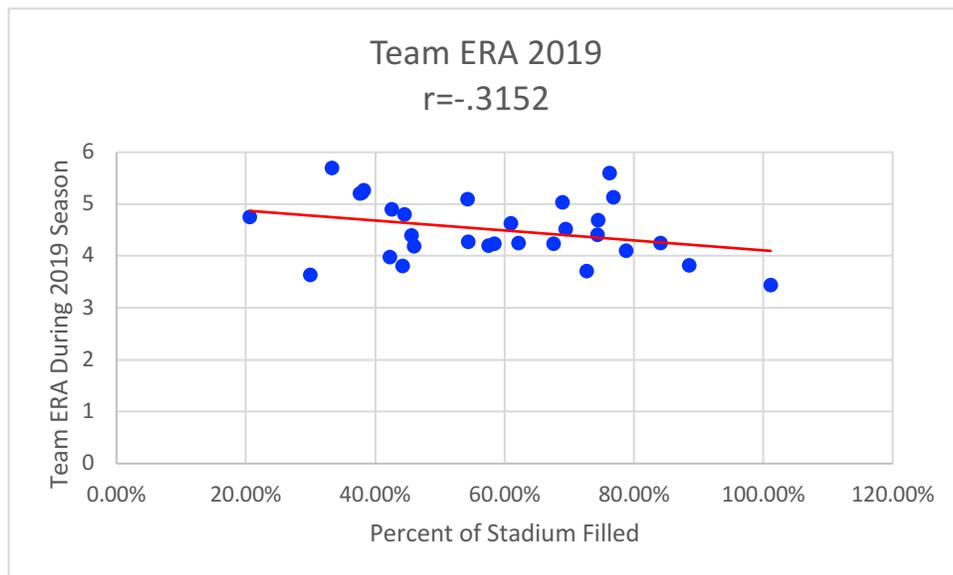
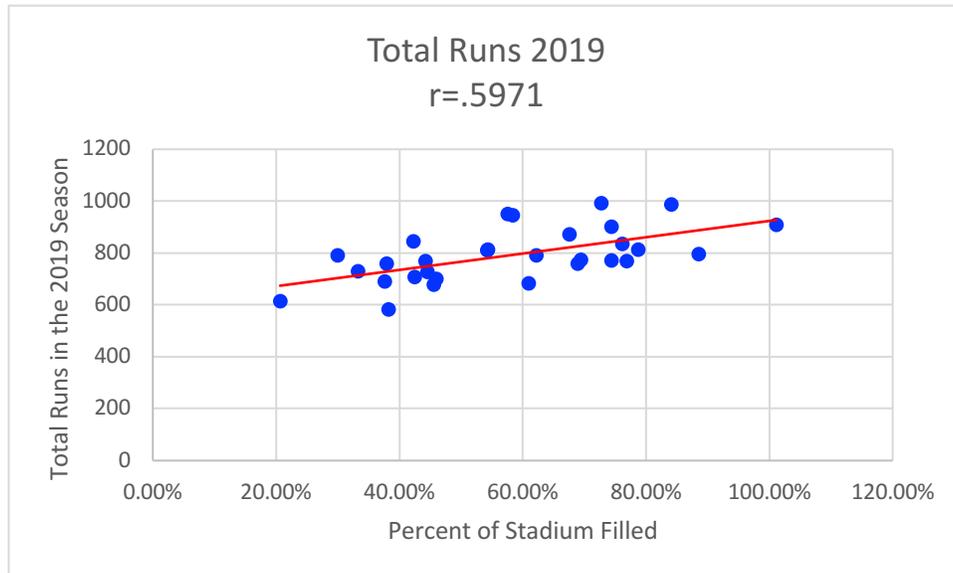




### *Team Statistics*

Falling under the category of team statistics are variables like total runs, batting average, slugging percentage, and ERA (earned run average). Naturally, teams with better records are likely to have better statistics. Because we saw a significant correlation between team record and attendance, it is important to see if individual statistics correlate. Do teams with knockout pitchers and low ERAs have higher attendance? Do those with high run totals like the league-leading Dodgers have better attendance rates? Correlation tests were run resulting in the following correlation coefficients.

- Total Runs: .5971
- Batting Average: .2873
- Slugging Percentage: .5941
- ERA: -.3152

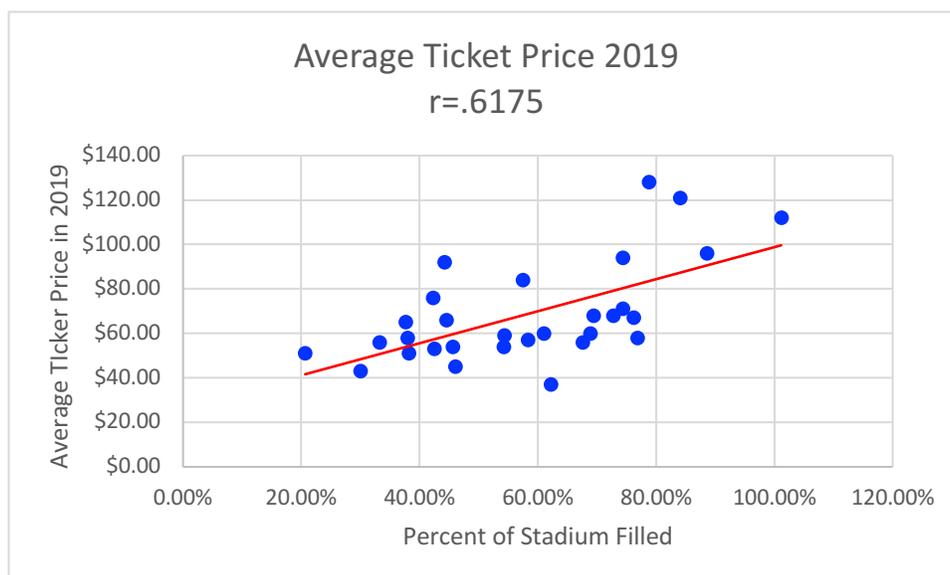


Batting resulting in runs and/or multiple bases resulted in a higher correlation coefficient than statistics based upon batting average or pitching. A slugging percentage is a measure of a batter's productivity, representing the total amount of bases per bat. The formula used in calculating this measure is  $(1B + 2B \times 2 + 3B \times 3 + HR \times 4) / AB$ . This measure had a significant correlation with attendance in 2019. An assumption can be made that most spectators would prefer to watch games with great offense and multiple runs instead of a pitcher's duel. High offense games also keep the crowd intrigued for more of the game than strong pitching alone. Hits and

home runs bring momentum and amp up the crowd. Players often feed off the crowd's momentum and hitting parades ensue. It's an ideal situation for a home team; this same concept is one of the reasons teams have better records at home than during away games.

### *Average Price of Ticket*

Ticket prices vary greatly depending on what teams are playing, what stadium the game is at, the seat location, the time of the game (which point in the season, what day of the week, actual game time), and how many seats are purchased. There is a large difference in the cost of 'nosebleed' seats versus premium options close to the field. Moreover, the most important part of ticket pricing is a basic understanding of supply and demand. Clubs with high demand have the opportunity to charge more for their coveted tickets. Teams that have more trouble filling their stadiums must drop prices on their tickets, resulting in lower overall revenue for the club. When compared to teams' stadium attendance in 2019, ticket prices saw a correlation coefficient of .6175.



At first glance, this correlation test and chart would send the message that higher ticket prices result in higher stadium attendance. However, the real argument is that high past stadium

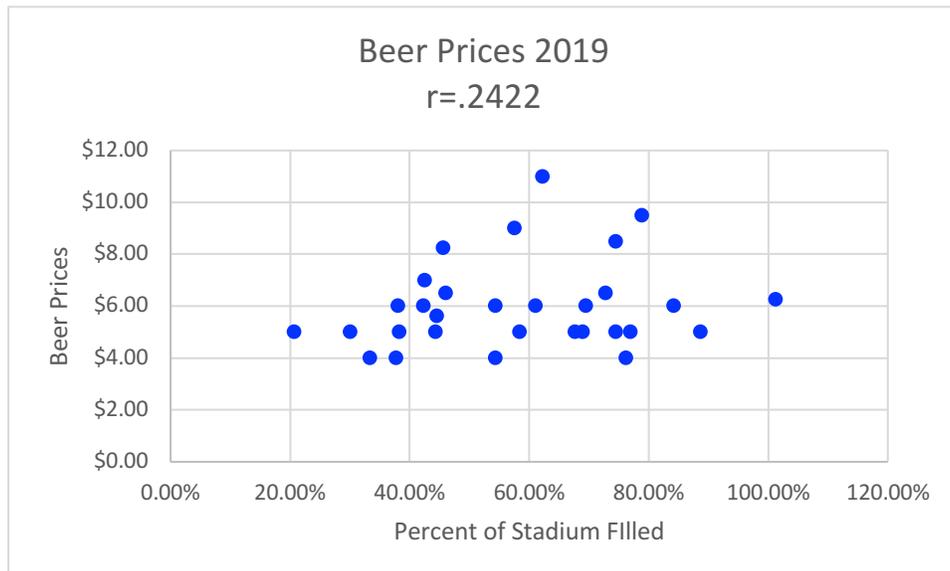
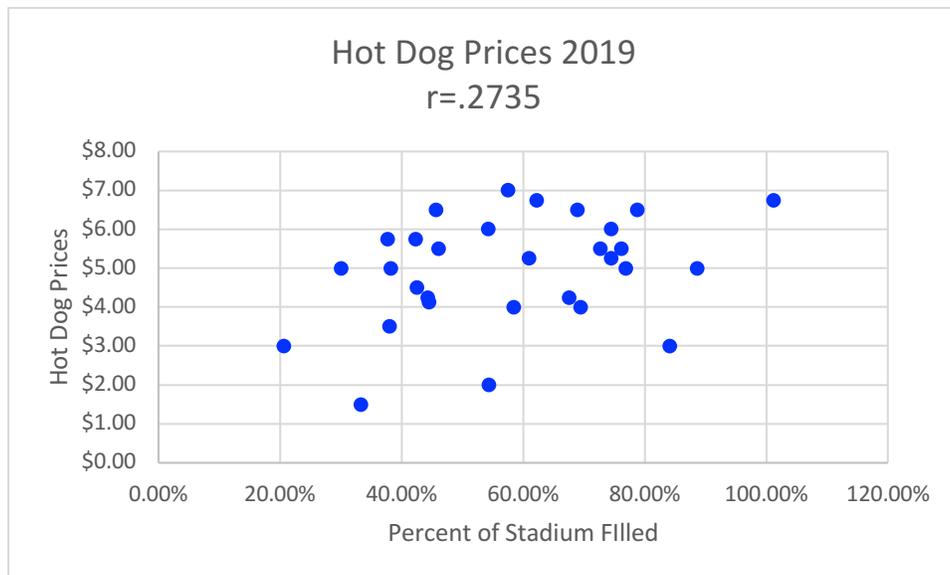
attendance allows clubs to charge more for their tickets in the future. This philosophy is what leads to a .6175 correlation coefficient. Currently, MLB teams have utilized Dynamic (or Variable) Ticket Pricing. This “is a machine learning process which refers to periodically adjusting prices based on the factors affecting individual events” (Schrute). It is safe to say that teams are doing as much as they can to maximize the revenue they receive from ticket sales and to fill their stadiums. This advanced machine learning process likely pricing tickets at the most appropriate rate for each team’s circumstance.

### *Beer and Hotdog Price*

As two of the most commonly purchased items at ballparks, beer and hotdog sales are big revenue points for MLB teams. Beer at ballgames is a staple and there are large revenue deals tied up in making sure it stays that way. Anheuser-Busch InBev has been sponsoring the MLB since 1980. Reports show that “the company pays MLB an estimated \$40 million annually” so that Budweiser can be the official beer of MLB (Greene). Stadiums are averaging over 25 different beer selections, but a classic beer such as Bud Light will average \$6.00 across the league. The New York Mets charged the most in 2019 at \$11.00, while the Colorado Rockies, who play at Coors Field, charged just \$3.00.

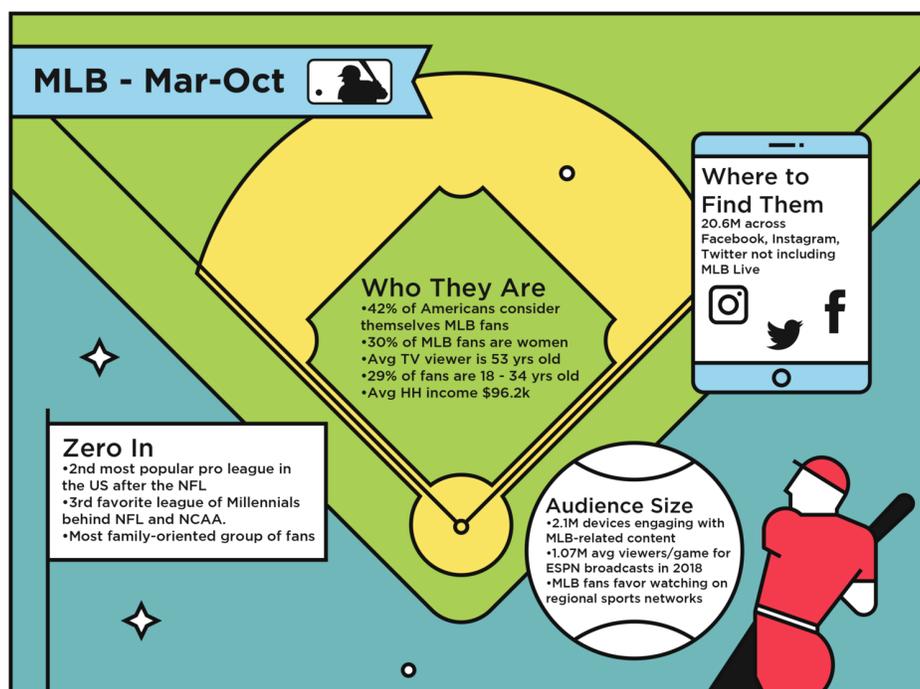
Hotdogs, on the other hand, are a go-to classic for a meal at the ballpark. In 2019, the average price for a hotdog was \$4.95. The Washington Nationals charged \$7.00, the most in the league, while fans could pay just \$1.50 at a Baltimore Orioles game. A very popular promotion for MLB teams is \$1.00 hotdog night. The Chicago White Sox, for example, made every Wednesday \$1.00 hotdog promotional games in 2019. By running this promotion on Wednesdays, the club helped fill their stadium during what can be a difficult day of the week to sell tickets for. These promotions have proven to be very popular among the fans, with attendance and ticket prices

often being higher on those days compared to average mid-week games. An Aramark representative said that at Houston Astros \$1.00 hotdog nights, there are usually 43,000 sold instead of the average 9,000 hotdogs. Most clubs “average about 1.5 hot dogs per person on dollar dog night” (Hlavaty). Although the average price of beer and hotdogs did not result in a strong correlation with attendance the past 10 years (the correlation coefficient equaled .2422 and .2735 respectively), promotional nights with discounted food and drink offerings did help fill the stadium.

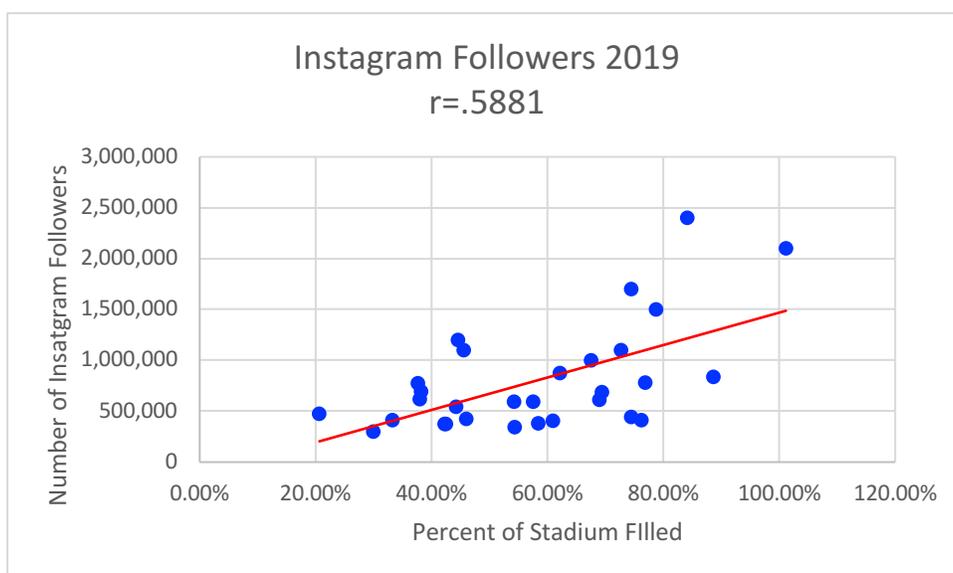


## Social Media Followers

More Instagram followers, Twitter followers, and Facebook likes is often the goal of social media coordinators throughout MLB. Marketing strategies have gone digital and appealing to young demographics has never been more important. Creative campaigns featuring star players, mascots, and celebrities are now the norm. Teams are also utilizing gifs, emojis, and hashtags to push their campaigns. Highlight reel plays and score updates can be found almost instantaneously on many team accounts throughout the game. Each social media account appeals to slightly different demographics. Twitter appeals to the youngest fans and makes it easy to tweet quick updates throughout the game. Instagram has been beneficial for displaying the most important content; scores after each game and in-depth videos are popular on this social media site. Facebook is made up of the oldest fan demographic on social media. Because of this, content is often tailored to more mature fans. Charity events, press conference coverage, and team updates are the most frequent types of posts on Facebook. Below is a breakdown of social media fan demographics from theshelf.com.

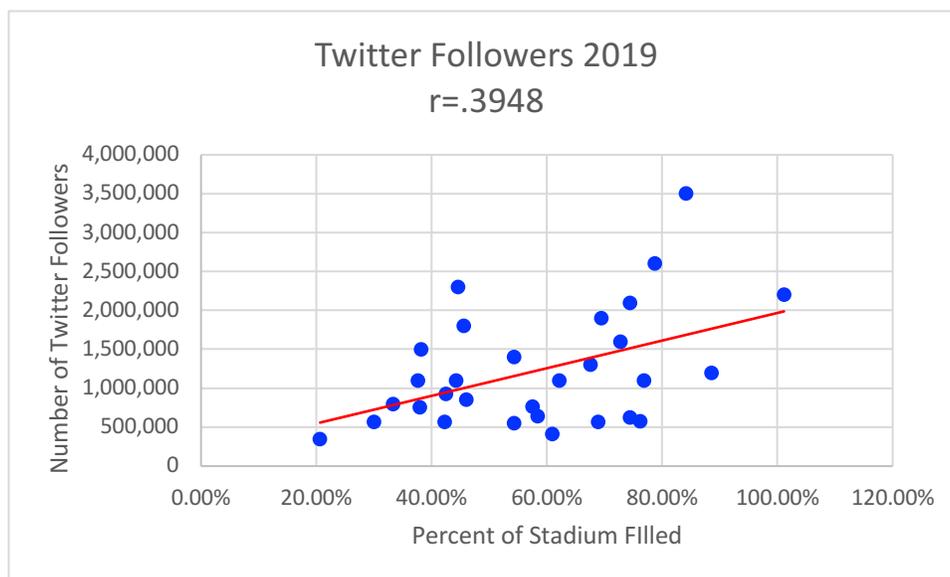


Instagram has the least number of followers in comparison to Twitter and Facebook. Overall, Instagram has an even gender split in terms of accounts, but female users tend to spend more time on the app. Research has shown that about 70% of MLB fans are male and use Instagram less than their female counterparts. With that being said, those who follow a team's Instagram account are rather dedicated to the team. Instagram saw the highest correlation between the number of followers and stadium attendance in 2019 with a coefficient of .5881. MLB teams need to harness the loyalty of their Instagram followers and translate it into ticket sales. This can be done through insider ticket deals and follower contests for free tickets, merchandise, or souvenirs.



Twitter has proven to be a great place for MLB teams to provide in-game updates and highlights. Top plays, whether walk-offs, homeruns, or defensive heroics, gain traction through retweets and likes. Teams have also been known to retweet posts from their players and other media sources that help provide an inside look at the team. Fans want to know what players and coaches are like off the field and Twitter has been a unique space for teams to let fans in. Twitter also makes it easy for team accounts to reply to fans' questions or comments. Currently, The New

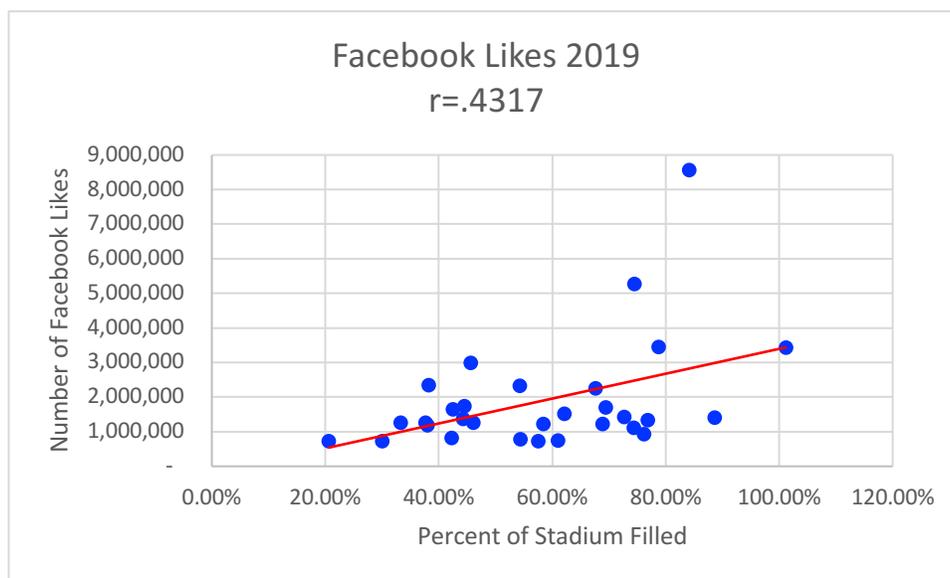
York Yankees have the most followers on Twitter with 3,500,000. The Miami Marlins fall in last place with 343,900; the Marlins also had the lowest total attendance in 2019. Twitter followers and percent of the stadium filled in 2019 have a correlation coefficient of .3948.



On average, Facebook has the least amount of posts compared to Twitter and Instagram. Instead, the content posted on Facebook displays the most important updates such as press conferences, team signings, and philanthropic work. Many MLB teams have also utilized Facebook live in recent years to stream select home games. This has proven highly effective for teams like the Chicago Cubs. In 2018, they used a Facebook live strategy “during the final two homestands of the season by retargeting viewers of the live games to sell single-game tickets. In just three weeks, the team generated a 4.7x return on ad spend from this campaign” (The Chicago Cubs Hit a Home Run Deal with Facebook Live Streaming Deal). Due to this success, the Cubs partnered with Facebook in 2019 to live stream 25 home games.

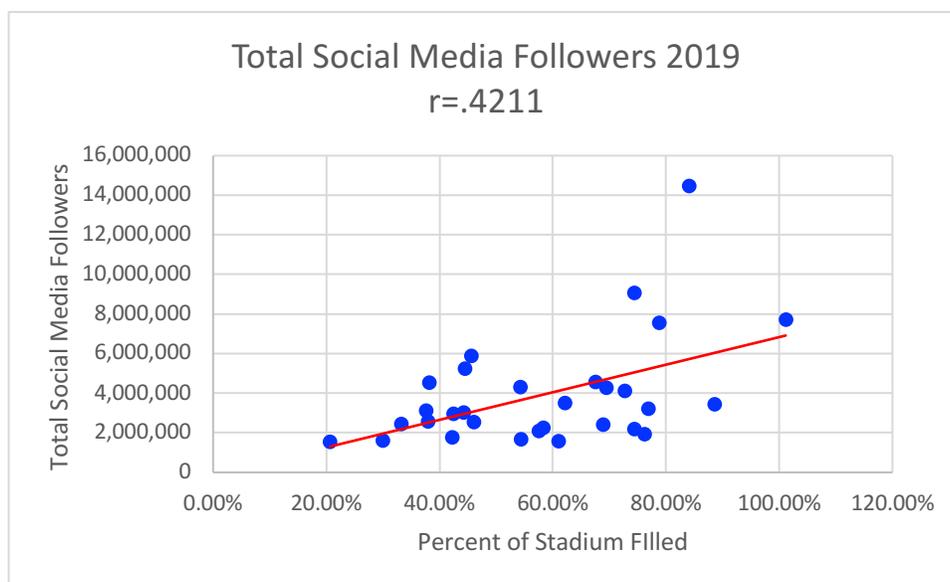
Facebook likes and stadium attendance saw the smallest correlation among social media sites. This is likely because Facebook algorithms encourage users to ‘like’ companies, teams, and public figures they are interested in. The vast majority of teams had more Facebook likes than

Instagram or Twitter followers. The Yankees had the most likes with 8,559,859. The next closest was the LA Dodgers at 3,423,433, less than half of the Yankees total. Facebook saw the largest spread between the teams with the most likes and those with the least. The correlation coefficient between Facebook likes and stadium attendance in 2019 is .4317.



Overall, social media much be leveraged by each team. Instagram, Twitter, and Facebook are just the start; some teams now have Snapchat, YouTube, and LinkedIn accounts to make sure they stay connected with as many fans as possible. In 2019, the sum of a team's social media followers had a .4870 correlation with total stadium attendance. Posting quality content that keeps fans informed and entertained is ideal as it builds loyalty among a team's fanbase. Some unique examples of this include the Colorado Rockies creating a cheesy photoshoot with their stars Charlie Blackman and Nolan Arenado and using #ChuckNado to encourage fans to have their own photoshoot. The Chicago Cubs created a game show series on Instagram and YouTube that placed player's teammates against their wives to see who knew more facts about the player. The New York Yankees created a 'Sights and Sounds' series that let the fans into what the atmosphere is

like inside the ballpark during important games. Social Media will be discussed further when recommendations are made to MLB teams.

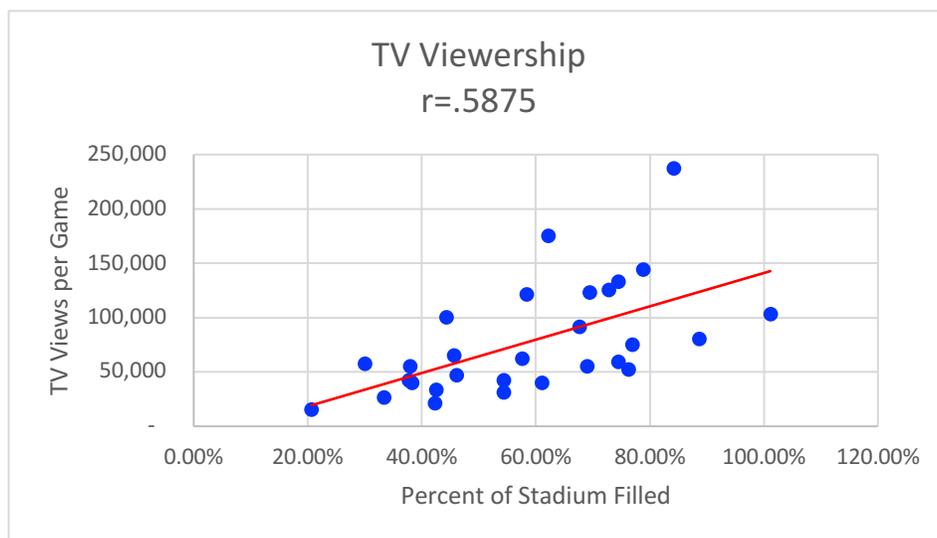
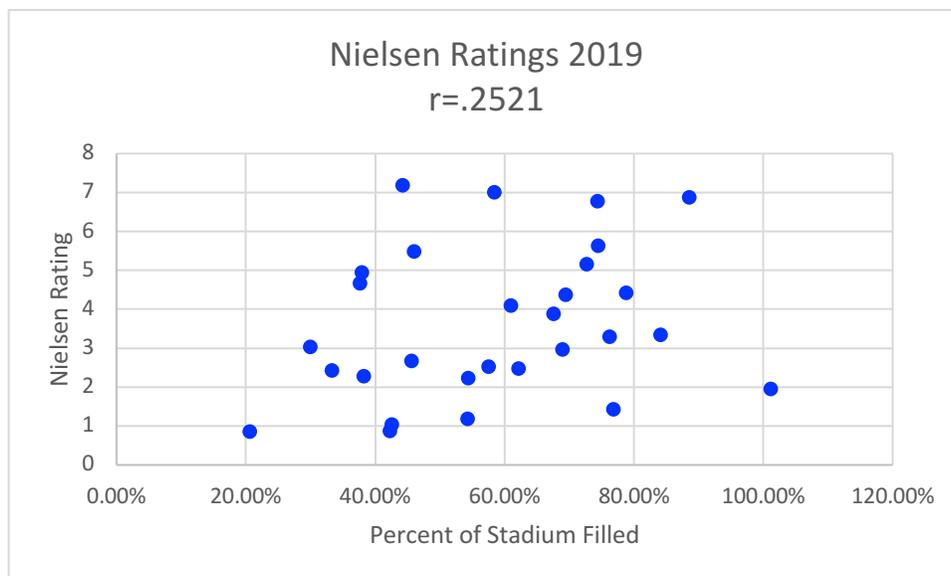


### *Television Viewership*

T.V. viewership, network contracts, and advertisement deals are arguably the single most important source of revenue for MLB teams. Luckily, despite a drop in stadium attendance, games still do very well on television; “Based on Nielsen data provided by FOX Sports, from March 28 to September 29—the length of the regular season—ratings were up 2% while total households were flat across the 29 regional sports networks in the United States” (Brown). Some teams saw massive increases in viewership, like the San Diego Padres whose ratings were up 76% in 2019. Overall, Nielsen ratings had a correlation coefficient of .2521 and the number of average TV viewers had a coefficient of .5875.

Whether or not there is a strong correlation between television viewers and stadium attendance, it is still extremely important for MLB teams to maintain strong viewership numbers. Watching games on a television network continues to be the most popular way fans view games.

Now, as attendance rates drop, clubs have relied heavily on multimillion-dollar network deals and the revenue from advertisements played during those games.



### *Final Thoughts*

Every team in MLB is actively attempting to maximize their stadium attendance through analytical pricing strategies, unique social media marketing campaigns, and gameday promotions. Strong team records, high offensive power, and the number of followers on social media have the strongest correlation with attendance in the past years. Fans are seeking after teams with star power

that are fun to follow. This was evident in Philadelphia when Bryce Harper signed a massive contract with the team. Almost instantly, the team increased their followers on social media and fans at the ballpark. In 2019, they saw 569,297 more fans at games; that is an average of 7,028 more tickets sold per game. The team did not make the playoffs, but Harper's star power alone helped increase the popularity of the team.

As teams continue to seek new revenue streams, ticket sales remain one of the largest sources of revenue. However, the age of the average fan has been steadily increasing. All hope is not lost though. Baseball's popularity among kids and teenagers has not diminished. Playing in the backyard with neighbors, weekend travel tournaments, and school teams are as popular as ever with both boys and girls. Moving forward, MLB needs to understand how to attract the youngest generation of fans with their promotions.

## FINAL ANALYSIS

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As teams look to improve attendance, and in turn increase revenue, their main strategy will be to fix the known causes of low attendance. Earlier, it was stated that the multitude of other entertainment alternatives, increase in sports streaming options, an increase in total cost to attend games, and 'boring' games, were the main causes. After looking at correlation tests, teams with winning records, high offense stats, and strong social media presence found the greatest success in filling their stadiums. This information is most useful when placed in groups. Winning records, high offense, and 'boring' games relate to the 'on-field action'. This can become one category. An increase in sports streaming options and social media presence can be grouped to form an 'online presence' group. An increase in total cost to attend games, along with any other pricing strategy

factors, can be combined in a 'pricing' group. Lastly, other entertainment options can be looked at as 'competitors'. This leaves teams with the following categories:

- On-Field Action
- Online Presence
- Pricing
- Competitors

Instead of trying to fix every cause at once, it is more beneficial to identify the most important category for the team and place focus there. The Pareto Principle states that for many events, 20% of the causes lead to 80% of the results. In other words, in many cases, one or two factors lead to the strong majority of the results. This principle can relate to MLB teams; identifying and fixing the most impactful cause of low attendance may lead to larger positive results. This large impact cause will vary for each team, so multiple recommendations will be given.

## RECOMMENDATIONS

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Based on the known cause categories for low stadium attendance, recommendations are being proposed for each group.

### **On-Field Action**

Relating to the gameplay itself, this category is difficult to have full control over. Teams are already striving after winning records and strong offenses. However, there are a few techniques teams can implement. First, teams can build momentum off of offensive plays. Fireworks after homeruns, grand jumbotron effects for big plays, and win celebrations after each game all build fan enthusiasm. As an example, the Chicago Cubs play the song "Go Cubs Go" after each win. It encourages fans to show up to games and stay for the entire duration.

Promotion of current players and top prospects with high offensive power can be another tool utilized by MLB teams. Homerun replays posted to Twitter, a prospect spotlight series on YouTube, or high energy hype videos all gain traction among fans. If a minor league player is being promoted on social media or during game airtime, their entrance to the major leagues will be highly anticipated and people will want to attend the games after their debut. Promotional videos and infographics allow teams to boost a player even more than their resume may merit. One of the goals of marketing is to have consumers believing their product is more valuable than it may be.

Lastly, if teams are in a rut, drafting or trading for players who have proven offensive capabilities can bring energy to a stale team. The Padres were successful in using this strategy after signing Manny Machado. Despite a losing record, the team still saw a 10.51% increase in stadium attendance in 2019. Having a strong offensive power on a team helps make games more interesting because even when a team is losing, a swing of the bat can change the game at any moment. Nothing turns the tables quicker than a key homerun.

### **Online Presence**

A team's online presence may include, but is not limited to, social media accounts, streaming options, team websites, online news and media coverage, and player's social media accounts. Digital marketing has become the most important marketing channel for MLB, especially as they attempt to attract a younger fanbase. The first recommendation is to harness social media followers into purchasing tickets to games. This may be done through 'insider' ticket promotions, ticket giveaways to loyal fans, or stronger advertising of gameday promotions. People like being a part of an exclusive group. Although following a team on social media is not inherently an exclusive group, teams can create this aura by providing perks not available to the general public. Real-life examples from teams include hiding tickets/merchandise around the city for fans

to find, hour-long coupons for tickets only advertised on social media, and gameday giveaways to those who follow and tag the team on a social media post.

Another strategy that has been successful for college teams is when team managers have social media accounts. Even if the account is run completely by a social media professional, manager interactions with fans are unique and provide a different perspective than the average player. Tweets thanking the fans after a win, video clips from motivational speeches given in the locker room, or posts asking for the fans to attend a game all feel like a personal message. If a manager can rally a team, he certainly has a chance to influence the fans as well. Strategic posts from a manager aimed at the fans can help boost team loyalty.

### **Pricing**

This category entails the pricing of tickets, parking, concessions, alcohol, merchandise, etc. Currently, the majority of pricing is completed using analytical pricing programs. This software takes into account more variables than a human mind ever could. That is why it is used by sports teams, airlines, and hotels. It is important to continue developing pricing technology that can be used for not only ticket prices, but the other costs entailed in attending a ballgame. The Fan Cost Index talked about earlier should rise in percentages that match current inflation. Any higher and the true cost of attending an MLB game will become more and more out of reach for many of the team's fans.

MLB as a whole needs to understand that although the cheapest of the 'Big 4', other entertainment options are still competitors. This is why promotions like dollar hotdog night or discounted parking are recommended. New ideas may include pricing parking after a player's number. The Houston Astros can create Alex Bregman night and advertise \$2 parking. Is a key prospect making his MLB debut? Price popcorn, peanuts, or additional snacks at \$1 to represent

his first game. Maybe a player is celebrating his 25<sup>th</sup> birthday; why not offer certain tickets at \$25? Fans love learning about and taking advantage of promotions.

### **Competitors**

Lastly, MLB has a multitude of competitors it competes with daily. This number will only continue to rise as consumers demand additional options. With a premium price tag, MLB games should be advertised as a superior product to other options. With a chance to be outdoors, socialize with friends, watch athletes with unmatched abilities, eat incredible food, and enjoy hundreds of drink options, baseball games check the majority of boxes consumers are asking for. MLB games combine many of the other options available into one package, but they are not always seen this way. Often, games are advertised for the baseball aspect alone, but updated stadiums have changed this. One can argue that those who dislike baseball can still enjoy themselves at an MLB game because of the diverse offerings the stadium brings. Chase Field has a pool in the outfield, Yankees Stadium has a history museum, and Tropicana Field allows fans to pet live stingrays. With restaurants, bars, live music, and also a baseball game happening all in one place, teams need to advertise the offerings they have outside of the game itself. Recommendations include spotlighting unique food offerings, selling cheap standing room tickets that give access to the amenities within the stadium, and using the ballpark for team sponsored events outside of gamedays. Movie on the field, anyone? Group workouts up and down the stadium seats? How about watch parties for the city's other professional or college sports teams? These events have all been done successfully by MLB teams and they continue to build team loyalty and enthusiasm.

### **Conclusion**

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MLB teams are in a unique situation as they see revenue increase, but stadium attendance decrease. To keep America's pastime alive, teams must recognize the current causes that disrupt

attendance rates. Multiple entertainment options, advanced streaming capabilities, increasing costs, and 'boring' games all contribute to a dwindling number of fans in the stadium. By focusing on on-field action, online presence, pricing, and competitors, teams have a chance to identify their weaknesses and implement recommendations suitable for their team. Looking at teams with successful attendance rates is beneficial, but knowing that different cities provide different opportunities and challenges is important. A team's record, the players on the team, and the MLB competitive climate will always be changing and with that, attendance will change. Success one year does not guarantee great attendance the next. Constant promotions, unique offerings, and digital marketing campaigns need to be utilized every single year. Fans want 'new and shiny' offerings and it is up to the MLB to give it to them.

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