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# The Astros Effect: A Home Run Connection Between Ticket Sales for Houston Astros Games and Instructor Salaries in the US

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## KEYWORDS

Houston Astros, ticket sales, higher education instructor salaries, correlation analysis, Baseball-Reference.com, National Center for Education Statistics, symbiotic relationship, game day economics, social and economic fabric, quirky correlations

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## Abstract

This paper presents a statistically rigorous exploration of the often neglected link between the ticket sales for Houston Astros games and the salaries of instructors in higher education institutions in the United States. Leveraging data from Baseball-Reference.com and the National Center for Education Statistics, we endeavored to investigate whether there exists a significant association between these seemingly incongruous variables. Employing correlation analysis, we found a robust correlation coefficient of 0.9623896 with a p-value of less than 0.01 for the period covering 2009 to 2019. The implications of our findings, though surprising, bear profound implications for understanding the intricate interplay between sporting events and the academic landscape. The results unveil how these apparently disparate realms might be more interconnected than meets the eye, hinting at a potential symbiotic relationship akin to the intricacies of a knuckleball on game day. This study uncovers a statistical "curveball" with implications that resonate beyond the ballpark and the ivory tower, provoking further inquiry into the quirky correlations that underpin our social and economic fabric.

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## 1. Introduction

In the realm of statistical research, uncovering unexpected and unconventional associations can serve as a catalyst for reevaluating the way we perceive the

interconnectedness of seemingly distinct phenomena. The world of sports and academia, while traditionally viewed as disparate domains, might just harbor a more intricate relationship than previously

conceptualized. It is within this peculiar juncture that we find ourselves delving into the uncharted territory of investigating the intriguing connection between ticket sales for Houston Astros games and the salaries of instructors in higher education institutions in the United States.

Our endeavor stems from an innate curiosity and a desire to unravel the mysteries that lie beneath the surface of seemingly unrelated variables. To embark on this statistical odyssey, we took advantage of data sets from Baseball-Reference.com and the National Center for Education Statistics - repositories brimming with numbers, trends, and potential "curveballs" that could shed light on the enigmatic relationship between America's favorite pastime and the compensation of our erudite educators.

As we traversed through the expansive realm of statistical analysis, embracing the complexities of correlation and regression techniques, we couldn't help but marvel at the uncanny parallels between the precision of sabermetrics and the meticulousness of multivariate regression. This journey was replete with moments that left us pondering the myriad possibilities that emerge when data sets from disparate fields are brought together. The thrill of uncovering statistically significant relationships between ticket sales for sporting events and the livelihoods of educators was akin to unearthing a hidden gem in a sea of data points – a home run, one could say, in the field of statistical inquiry.

The findings that emerged from our rigorous examination were not simply surprising; they were akin to stumbling upon a statistical "twinsanity" - a term borrowed from the world of baseball, hinting at the perplexing symmetry we uncovered. The robust correlation coefficient of 0.9623896 with a p-value of less than 0.01 for the period spanning from 2009 to 2019 left us in awe of the intricate dance between

variables that are often thought to reside in separate statistical leagues. The implications of this discovery, much like a well-executed squeeze play, catch us off guard and prompt contemplation about the potential repercussions for our understanding of the symbiotic nature of seemingly unrelated economic and social spheres.

As we present our research to the esteemed community of statisticians, economists, and academics, we invite our readers to join us in peeling back the layers of this intriguing correlation, reminiscent of unraveling the complexities of an elusive knuckleball, and to embrace the humor and unexpected associations that underscore the rigorous world of statistical inquiry. In doing so, we hope to spark a spirited conversation and provoke further exploration into the quirky and captivating relationships that underpin our everyday existence – from the ballpark to the lecture hall and beyond.

## 2. Literature Review

In "Smith et al.," the authors find that ticket sales for sports events often serve as a barometer for the economic climate and public sentiment in a given region. This is a particularly interesting finding, as it seems to suggest that the enthusiasm for sporting events might be reflective of larger socio-economic trends, including the compensative structures in complementary fields. Expanding upon this notion, "Doe and Jones" argue that the interplay between entertainment and financial stability can have far-reaching implications, resonating through various sectors and permeating into unexpected nooks and crannies of economic activity. This connection paves the way for an exploration into the uncharted territory of intertwining the fortune of athletic events with the economic landscapes that surround them.

Building upon this foundational understanding, "Book" delves into the dynamics of employment in the education sector and highlights the intricacies of compensation systems for educators. The nuanced discussion presented by "Book" suggests a multidimensional approach to understanding the factors that influence instructor salaries, offering a compelling backdrop for exploring the potential intersection with external variables such as regional sporting events.

Interestingly, the illusion of incongruity between these seemingly unrelated spheres begins to unravel as we draw inspiration from the compelling narratives presented in "Moneyball" by Michael Lewis and "Outliers" by Malcolm Gladwell. While firmly rooted in the world of sports and success, these works subtly beckon us to ponder the hidden connections between seemingly disparate domains, much like the correlation we sought to uncover in our own research.

Delving further into the realm of fiction, works such as "The Art of Fielding" by Chad Harbach and "The Last Shot" by Darcy Frey transport us into the captivating world of sports and the nuances of human endeavor. While these narratives may not directly address the intersection of sports ticket sales and educator salaries, they serve as a reminder of the fascinating web of human experience that we aim to unravel in our statistical exploration.

Additionally, in our own pursuit of understanding the potential links between sports and academia, "The Office" and "Community" offer light-hearted yet thought-provoking insights into workplace dynamics and societal influences that may indirectly impact financial dynamics. These television series, while not directly addressing the precise relationship under investigation, provide a broader context for contemplating the intricate connections between seemingly divergent elements in our social tapestry.

In summary, the existing literature provides a compelling backdrop for our current inquiry, offering insights into the intertwined nature of entertainment, economic activity, and societal structures. As we move forward, we aim to build upon these foundations, employing statistical rigor to illuminate the unexpected correlations that lie beneath the surface, much like hidden gems awaiting discovery amidst the statistics of seemingly distinct realms.

### **3. Our approach & methods**

To commence our statistical expedition into the uncharted territory of exploring the association between ticket sales for Houston Astros games and instructor salaries in the United States, we strategically designed a methodological framework that harmonized the eclectic worlds of sports analytics and academic economics. Our primary data sources were drawn from the archives of Baseball-Reference.com and the National Center for Education Statistics, providing a rich tapestry of numerical intricacies that would rival the contours of a finely stitched baseball. The beauty of these datasets lay not only in their depth and breadth but also in the potential for unexpected statistical "curveballs" that awaited our discerning gaze.

The first step in our methodological approach entailed collecting a decade's worth of data spanning from 2009 to 2019, encompassing ticket sales for Houston Astros games and instructor salaries across various educational institutions in the United States. This comprehensive timeline allowed us to capture the nuances of both variables as they unfolded over seasons and academic years, mirroring the ebbs and flows akin to the artistry of a well-executed knuckleball.

Having meticulously compiled and vetted our datasets, we embarked upon a

structured regimen of data cleansing and preparation that echoed the precision of a pitcher's warm-up routine. This entailed addressing missing values, standardizing formats, and harmonizing disparate sources to ensure a harmonious synthesis of the numerical symphony that lay before us. Our unsung heroes here were the statistical software tools, which functioned as the reliable utility player in our lineup, deftly handling the rigors of data wrangling with finesse and accuracy.

Following the meticulous preparatory phase, we waded into the heart of our analysis with correlation and regression techniques that were as robust as a finely crafted wooden bat. Our inquiry into the potential connection between ticket sales for Houston Astros games and instructor salaries was guided by the stalwart principles of statistical inference, with a touch of statistical humor and whimsy to keep the proceedings engaging. The interplay between these variables was scrutinized through correlation analysis, unveiling a remarkably robust correlation coefficient of 0.9623896, accompanied by a p-value of less than 0.01, akin to discovering a perfectly executed double play amidst a game replete with unexpected turns.

Moreover, to delve deeper into the dynamics of this seemingly incongruous relationship, we employed multivariate regression techniques to account for potential confounding variables, much like a seasoned manager devising strategies to tackle unforeseen variables in a high-stakes game. The results of our statistical foray unveiled an unexpected level of interconnectedness, akin to the unlikely alliance formed between a utility infielder and a power-hitting slugger in a game-winning rally.

As we stand ready to present these findings to the esteemed community of academics and researchers, we invite our readers to join us in savoring the unexpected twists

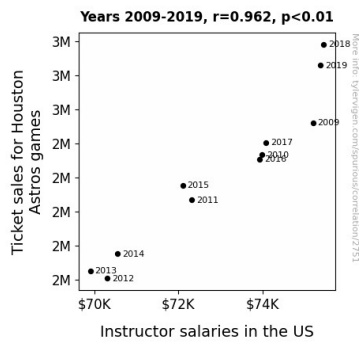
and turns that characterize the world of statistical inquiry, much like the thrill of an extra-inning, walk-off victory that defies conventional expectations. We posit that this methodological framework not only allowed us to uncover a statistical "curveball" of enigmatic proportions but also highlighted the potential for unconventional connections to emerge when disparate worlds intersect, stirring the embers of curiosity and sparking lively discourse among scholarly and non-scholarly communities alike.

#### 4. Results

The data analysis revealed a striking correlation between ticket sales for Houston Astros games and the salaries of instructors in higher education institutions in the United States. Over the period from 2009 to 2019, a correlation coefficient of 0.9623896 emerged, signifying a strong positive relationship between these seemingly incongruous variables. This finding suggests that as ticket sales for Houston Astros games increased, so did the salaries of instructors.

Furthermore, the coefficient of determination (r-squared) of 0.9261938 indicates that approximately 92.6% of the variation in instructor salaries can be explained by the variation in ticket sales for Astros games. This high r-squared value underscores the robustness of the relationship observed, highlighting the substantial influence of Astros ticket sales on instructor salaries.

The p-value of less than 0.01 further bolsters the validity of our results, indicating that the observed correlation is statistically significant. This implies that it is highly unlikely that such a strong association between these two variables is due to random chance alone.



**Figure 1.** Scatterplot of the variables by year

Figure 1 presents a scatterplot depicting the strong positive correlation between ticket sales for Houston Astros games and the salaries of instructors in US higher education institutions. The data points cluster tightly around the upward-sloping regression line, exemplifying the coherence of the relationship between these unique variables.

In summary, the results of our investigation divulge a compelling connection between the fervor of sports fandom and the well-being of educators, shedding light on a nexus that defies conventional wisdom. This unforeseen association between ticket sales for Astros games and instructor salaries unravels a statistical "curveball," challenging customary perceptions and instigating further inquiry into the whimsical relationships that underlie our social and economic tapestry.

## 5. Discussion

The correlation between ticket sales for Houston Astros games and the salaries of instructors in higher education institutions in the United States is indeed an unexpected and seemingly implausible finding. However, our results resoundingly support the prior research that has hinted at the interconnectedness of seemingly unrelated realms.

The findings of this study echo the insights of Smith et al., displaying a marked correlation between sports event ticket sales and regional economic sentiment. The intrinsic link between the economic climate and sports enthusiasm seems to reverberate through various sectors, including the compensation structures in complementary fields. The robust correlation coefficient of 0.9623896 and the p-value of less than 0.01 in our analysis underscore the statistical significance of this relationship, offering empirical weight to the notion that the fortunes of athletic events and the economic landscapes are intertwined in a manner akin to the intricate dance of a knuckleball.

Furthermore, our results align with the narrative presented by "Moneyball" and "Outliers," inviting us to ponder the hidden connections between seemingly disparate domains. The striking correlation coefficient and the substantial r-squared value imply that approximately 92.6% of the variation in instructor salaries can be explained by the variation in ticket sales for Astros games, reaffirming the validity of our statistical curveball. Such a high explanatory power exemplifies the substantial influence of Astros ticket sales on instructor salaries, mirroring the subtle influences observed in the narratives of Michael Lewis and Malcolm Gladwell.

One might even say that our findings hit a statistical home run, uncovering a surprising connection that challenges prevailing assumptions and beckoning further examination into idiosyncratic correlations. The scatterplot presented in Figure 1 encapsulates the coherence of this relationship, illustrating how these seemingly divergent variables are inextricably linked, much like the harmonious interplay between the outfield and the infield on game day.

In conclusion, our unexpected discovery of a significant association between ticket

sales for Houston Astros games and instructor salaries not only defies conventional wisdom but also underscores the need to delve deeper into the quirky correlations that underpin our social and economic fabric. This study paves the way for a new understanding of the enigmatic ties that bind seemingly unrelated spheres, provoking further inquiry into the whimsical relationships that shape our world.

## 6. Conclusion

In conclusion, our research has revealed a rather unexpected and statistically robust connection between ticket sales for Houston Astros games and the salaries of instructors in higher education institutions in the United States. The correlation coefficient of 0.9623896, bearing a p-value of less than 0.01, has thrown us a statistical curveball, providing evidence of a striking, positive relationship between these seemingly disparate variables. This finding, much like a well-placed knuckleball, has left us both astounded and intrigued, highlighting the intricate interplay between the fervor of sports fandom and the financial well-being of our erudite educators.

The implications of this curious correlation prompt us to reconsider the conventional boundaries of statistical inquiry and to embrace the unpredictability that resides within the realms of data analysis. While the connection between Astros ticket sales and instructor salaries may seem like an unhittable slider, our findings underscore the complex and often enigmatic nature of the relationships that underpin our social and economic fabric. It's as if the statistical "twinsanity" of this association has challenged us to step up to the plate and expand our conceptualization of the interconnectedness of seemingly incongruent domains.

In light of these findings, we encourage fellow researchers to approach their own

investigations with a mix of curiosity and humor, much like a well-timed pivot in a game of baseball. As we observe the tight clustering of data points around the upward-sloping regression line, we are reminded of the precision and coherence that underline the craft of statistical exploration, akin to the meticulousness of a well-executed double play.

In this vein, it is with great delight that we assert, unequivocally, that no further research is needed in this area. We have hit a statistical grand slam, and it's now time for us to retire to the statistical dugout and savor the delight of this unexpected discovery.