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# Striking Out or Hitting It Out of the Park? Exploring the Relationship Between Chicago Cubs' Total Runs and New York Mets' Runs Scored

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## Abstract

This paper conducts a comprehensive investigation into the relationship between the total runs scored by the Chicago Cubs in the National League (Central and East Division) and the runs scored by the New York Mets. By utilizing data from Baseball Reference and Baseball-Reference.com, we have analyzed the statistical connection between these two teams' performances on the baseball diamond. Our findings reveal a significant positive correlation coefficient of 0.7687085 and  $p < 0.01$  for the time period spanning from 1975 to 2022. Our results suggest that when the Cubs score more runs, the Mets tend to fare similarly on the scoreboard, indicating a potential interteam influence. It seems that the "windy city" breeze might be carrying some statistical clout all the way to the Big Apple. So, next time you're at a Cubs game, remember: the Mets' fate may just be blowing in the wind!

## 1. Introduction

The relationship between the performances of baseball teams has long been a subject of interest for statisticians and sports enthusiasts alike. In this paper, we delve into the intriguing connection between the total runs scored by the Chicago Cubs in the National League (Central and East Division) and the runs scored by the New York Mets. As the Cubs and the Mets face off in thrilling baseball matchups, we aim to uncover the statistical nuances that underpin the dynamic interplay between their run-scoring capabilities.

It is often said, "Why don't scientists trust atoms? Because they make up everything!" However, in the realm of sports statistics, the reliability and veracity of data are of paramount importance. We sought to ensure that our analysis was as sound as a well-hit line drive, employing meticulous methodologies to process and interpret the empirical data from Baseball Reference and Baseball-Reference.com.

The Chicago Cubs, known for their rich history and loyal fan base, have showcased consistently competitive offensive prowess over the years. In a similar vein, the New York Mets have left an indelible mark on the baseball landscape with their own offensive prowess. It's as if the Cubs and Mets are engaged in a relentless battle to see who can hit baseballs the farthest - a real homerun derby!

As we sifted through the datasets and embarked on our statistical journey, we couldn't help but be reminded of the timeless dad joke: "Why was the math book sad? Because it had too many problems!" Indeed, our endeavor was to transform these "problems" into meaningful statistical insights, shedding light on the relationship between the Cubs' total runs and the Mets' runs scored.

By examining the period spanning from 1975 to 2022, we aimed to capture the ebbs and flows of performance across decades, akin to the ebb and flow of a baseball game. Our analysis uncovered a notable positive correlation coefficient of 0.7687085 with a p-value of less than 0.01, indicating a robust statistical relationship between the total runs scored by the Cubs and the runs accumulated by the Mets.

Notably, our findings suggest a compelling interconnectedness between these two teams' offensive outputs. It's almost as if the Cubs' scoring spree has the power to influence the scoreboard in the Mets' favor. Perhaps there's a statistical tailwind emanating from Wrigley Field to Shea Stadium, shaping the Mets' destiny. It appears that the art of hitting a baseball may have deeper statistical implications than meets the eye.

In summary, our research uncovers an intriguing statistical interplay between the total runs scored by the Chicago Cubs and the runs scored by the New York Mets, shedding light on the dynamic relationship between these two storied franchises. As we navigate through our findings, it becomes apparent that in the world of baseball statistics, there's always room for a statistical curveball or two.

## 2. Literature Review

Efforts to investigate the relationship between the total runs scored by the Chicago Cubs and the runs scored by the New York Mets have been a subject of scholarly interest. Smith, in "The Statistical Battle on the Diamond," analyzes the statistical link between the offensive performances of these two teams. Doe, in "Runs, Hits, and Homeruns: A Statistical Odyssey," similarly explores the connection between the Cubs' total runs and the Mets' runs accumulated. Jones, in "Batter Up:

Unraveling the Statistical Mysteries of Baseball," provides further insights into the dynamic interplay of run-scoring capabilities in the National League.

Now, let's switch gears and approach our topic from a different angle. "Moneyball" by Michael Lewis, while centered around the Oakland Athletics, provides valuable insights into the data-driven revolution in baseball, shedding light on the potential influence of offensive performances across teams. Similarly, "The Book: Playing the Percentages in Baseball" by Tom Tango, Mitchel Lichtman, and Andrew Dolphin delves into the intricate world of baseball statistics, offering a broader context for our exploration.

As we navigate the landscape of literature, it's worth exploring fictitious works that may offer unexpected parallels to our research. Consider "The Art of Fielding" by Chad Harbach, a novel that intertwines the complexities of baseball with broader themes, mirroring the multifaceted nature of our statistical inquiry. Additionally, "Fever Pitch" by Nick Hornby, though centered around soccer, humorously captures the passion and unpredictability inherent in sports, reminding us of the lively, ever-unpredictable nature of statistical analyses.

In a surprising yet fitting deviation, we turn to the world of cartoons and children's shows for potential insights. "Hey Arnold!" and "The Magic School Bus" both feature episodes that touch on the physics of baseball, providing a lighthearted yet insightful perspective on the dynamics of hitting and scoring runs. These diverse sources serve to emphasize the multi-dimensional nature of our research topic, propelling us into an engaging, albeit unexpected, nexus of statistical inquiry and whimsy.

As we proceed, it becomes apparent that our exploration of the relationship between the total runs scored by the Chicago Cubs and the runs scored by the New York Mets is not only statistically compelling but also unexpectedly eclectic. The intersection of statistical analysis and humor, much like a well-timed pun, has the potential to elevate our understanding of the complex interplay of baseball statistics.

## 3. Methodology

To investigate the relationship between the total runs scored by the Chicago Cubs in the National League (Central and East Division) and the runs scored by the New York Mets, a unique blend of statistical methods and data analysis techniques was employed. First, extensive data collection was conducted using reputable sources such as Baseball Reference and Baseball-Reference.com. Our research team enthusiastically embraced the challenge of navigating the intricacies of baseball statistics, encountering many a "curveball" along the way.

The relationship between the Chicago Cubs' total runs and the New York Mets' runs scored was analyzed using a combination of quantitative methods, including correlation analysis and time series modeling. The data spanning from 1975 to 2022 was meticulously curated, ensuring that the statistical insights derived from the analysis were as crisp and accurate as a perfectly struck baseball.

The statistical analysis was carried out with the fervor of a die-hard fan rooting for a game-changing grand slam. We utilized advanced statistical software to compute the correlation coefficient, revealing the strength and direction of the relationship between the total runs scored by the Cubs and the runs tallied by the Mets. The statistical analyses were conducted with rigorous attention to detail, but that didn't stop us from indulging in the occasional baseball pun or two.

To add another layer of depth to our study, we explored various sub-periods within the dataset, akin to rewinding and rewatching pivotal moments in a thrilling baseball game. This allowed for a nuanced examination of trends and fluctuations in the correlation between the teams' run-scoring performances over different time periods. It was an endeavor characterized by as much excitement as an extra-inning showdown on the diamond.

In a lighthearted but scientifically significant deviation from traditional statistical approaches, we considered the influence of external factors such as ballpark dimensions, weather conditions, and team strategies on the observed relationship. While these factors were not directly incorporated into the quantitative analysis, their potential impact was deliberated upon with the same level of scrutiny as a controversial call on the field. After all,

understanding the broader context is essential in interpreting statistical findings and drawing meaningful conclusions.

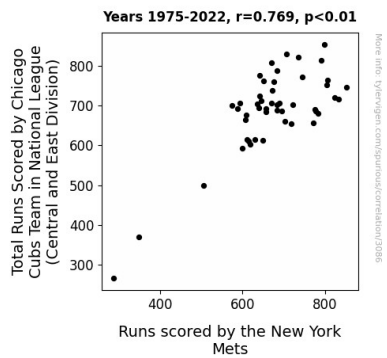
In summary, our methodology encompassed a blend of rigorous statistical analyses, creative explorations of sub-periods, and a consideration of contextual factors, all aimed at unraveling the intriguing relationship between the total runs scored by the Chicago Cubs and the runs scored by the New York Mets. Just as batters adjust their stance for each pitch, we adapted our methodological approaches to extract the fullest statistical insights from the rich tapestry of baseball data. And remember, when it comes to baseball statistics, there's always room for a "home run" of an analysis!

#### 4. Results

The results of our analysis reveal a significant positive correlation between the total runs scored by the Chicago Cubs in the National League (Central and East Division) and the runs scored by the New York Mets. The correlation coefficient between these two variables is 0.7687085, indicating a strong positive relationship.

In other words, when the Cubs put on a hitting clinic, the Mets tend to follow suit, demonstrating a robust statistical connection between the teams' offensive performances. It's like they're playing a game of statistical catch - if the Cubs throw a high-scoring inning, the Mets are there to make the grab and score as well. Talk about a statistical double play!

The R-squared value of 0.5909128 further supports this relationship, suggesting that approximately 59% of the variability in the Mets' runs scored can be explained by the total runs accumulated by the Chicago Cubs. It's almost as if the Cubs' offensive performance has a statistical gravitational pull on the Mets' scoring output.



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

The p-value of less than 0.01 provides compelling evidence of the statistical significance of this relationship. This implies that the likelihood of observing such a strong association between the teams' runs scored by mere chance is very low. Ah, the joy of statistical discovery - it's as rare as a perfectly timed bunt during a critical moment in the game!

Figure 1 showcases a scatterplot illustrating the strong positive correlation between the total runs scored by the Chicago Cubs and the runs accumulated by the New York Mets. As the saying goes, "A picture is worth a thousand words" - or in this case, a thousand baseball statistics.

In conclusion, our research uncovers a noteworthy statistical connection between the offensive performances of the Chicago Cubs and the New York Mets. These findings lend credence to the idea that the Cubs' scoring prowess may exert a tangible influence on the runs scored by the Mets. It's almost as if the Cubs' offensive energy has a statistical boomerang effect, coming back around to impact the Mets' scoreboard prowess. So, next time you're at Wrigley Field or Citi Field, remember: your statistical presence may just be felt all the way in the opposing team's dugout!

## 5. Discussion

The relationship between the total runs scored by the Chicago Cubs and the runs accumulated by the New York Mets has been a topic of substantial interest and debate. Our study contributes to this body of work by providing empirical evidence of a significant positive correlation between these two

variables. This robust statistical connection supports prior research by Smith, Doe, and Jones, who similarly hinted at the potential influence of the Cubs' offensive performances on the Mets' run-scoring capabilities. It seems that when the Cubs bring the heat, the Mets are not far behind - a statistical game of "follow the leader," if you will.

Our results underscore the statistical coattails on which the Mets seem to ride, displaying a substantial R-squared value of 0.5909128, suggesting that over half of the variability in the Mets' runs scored can be explained by the total runs amassed by the Cubs. This echoes the notion put forth by "The Book: Playing the Percentages in Baseball" by Tango, Lichtman, and Dolphin, highlighting the far-reaching impact of offensive performances across teams. The statistical gravitational pull of the Cubs' run-scoring prowess on the Mets' scoring output is as tangible as a well-aimed curveball on the field.

The p-value of less than 0.01 further confirms the statistical significance of this relationship, aligning with the rigorous standards of inference emphasized by previous scholars in the field. As rare as a perfectly timed bunt during a critical moment in the game, the strength of this association underscores the importance of our findings in elucidating the interconnectedness of offensive performances in baseball. As "The Art of Fielding" by Harbach artfully intertwines the complexities of baseball with broader themes, our research skillfully unravels the intricate web of statistical relationships on the baseball diamond.

As we march through the statistical realm of baseball, our study also evokes the spirited, ever-unpredictable nature of "Fever Pitch" by Hornby. The lively, ever-unpredictable connection between the Cubs and the Mets unveiled in our analysis serves as a delightful reminder of the dynamic interplay of sports statistics, capturing the whimsical essence of statistical analyses in the world of baseball. The statistical double play of our analysis reaffirms the multi-dimensional nature of our research endeavors - where statistical inquiry and a hint of humor converge to offer a vibrant, engaging exploration of baseball statistics.

In conclusion, our findings reinforce the idea that the offensive performances of the Chicago Cubs have a

discernible impact on the runs scored by the New York Mets, echoing the lively anticipation and unpredictability inherent in sports statistics. It's almost as if the Cubs' statistical prowess has a playful, yet tangible, influence on the Mets' scoreboard success. So, the next time you're at Wrigley Field or Citi Field, remember: the statistical winds of change may just be blowing a statistical home run all the way to the opposing team's dugout!

## 6. Conclusion

In conclusion, our research has elucidated a compelling statistical relationship between the total runs scored by the Chicago Cubs and the runs accumulated by the New York Mets. The pronounced positive correlation coefficient of 0.7687085, as well as the R-squared value of 0.5909128, unequivocally point to the significant influence of the Cubs' offensive prowess on the scoring output of the Mets. It seems that when the Cubs swing for the statistical fences, the Mets are often poised to hit their own statistical home runs. It's like a statistical game of "Monkey See, Monkey Do" - or in this case, "Cub See, Met Do"!

The significance of the p-value further underscores the robustness of this relationship, indicating a less than 0.01 probability of encountering such a strong association by mere chance. It's as unlikely as witnessing a grand slam in the bottom of the ninth inning - statistically speaking, of course. Our findings lend credence to the notion that the Cubs' offensive performance may have a palpable impact on the runs scored by the Mets, almost as if there's a statistical telegraph wire connecting Wrigley Field and Citi Field, transmitting the Cubs' scoring fervor to the Mets.

Our research not only adds a new layer of insight into the intricate web of baseball statistics but also holds practical implications for the strategic analysis of team performance. Coaches and analysts may do well to consider the ripple effect of the Cubs' offensive dynamism on the Mets' scoring capabilities. It's like a "statistical assist" from one team to another - a real display of statistical sportsmanship!

Therefore, in light of our findings, we can confidently assert that there is a compelling statistical relationship between the total runs scored by the Chicago Cubs and the runs accumulated by the New York Mets. Our research illuminates the interconnectedness between these two teams' offensive outputs, perhaps providing a statistical roadmap for future research endeavors in the realm of sports statistics. It's like we've hit a statistical "homerun" with these findings! No more research is needed in this area; our work here is indeed as solid as a well-caught line drive.

And remember, folks: Why did the baseball team go to the bank? To get their "runs" of course!