

# Spreading the Love: The Butter Effect on Washington Nationals Ticket Sales

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*The Journal of Sports Economics and Fan Behavior*

*The Institute for Dairy Economics and Sports Analytics*

*Chapel Hill, North Carolina*

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## **Abstract**

In this paper, we delve into a topic that is as rich and creamy as butter itself – the surprising relationship between butter consumption and ticket sales for Washington Nationals games. Our research team set out to butter up the field of sports economics by utilizing USDA data on butter consumption and Baseball-Reference.com statistics on Washington Nationals ticket sales from 1990 to 2019. After churning through the numbers, we discovered a correlation coefficient of 0.7423353 and a p-value of less than 0.01, highlighting a statistically significant association that may just leave you churned up. Join us as we unravel this unlikely connection and spread some laughter and insights along the way. After all, sometimes the best research is just a little bit "butter" than the rest!

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## **1. Introduction**

Ladies and gentlemen, and esteemed colleagues, prepare to be buttered up as we embark on a journey through the melting pot of baseball economics and dairy delight. In the world of research, we often seek correlations that are as clear as a pat of butter on a hot griddle - but who would have guessed that butter consumption could spread its influence all the way to the ticket sales for Washington Nationals games?

This study was not churned out of thin air - it was whipped up by a team of researchers with a passion for uncovering the unexpected and a knack for delivering a sprinkling of scientific humor. We couldn't resist the opportunity to spread some cheer and maybe a butter pun or two while delving into the relationship between butter consumption and ticket sales.

So, as we dive into the depths of statistics and the cream of the crop in baseball data, let us remember that even the most unconventional topics can yield enlightening results. After all, isn't it the butter, sorry, better, to be surprised by the richness and complexity of our world? Let's spread those research wings and take flight into the land of that golden goodness - butter up and join us for a journey that's anything but margarine-al!

## 2. Literature Review

Our quest to untangle the enigmatic relationship between butter consumption and ticket sales for Washington Nationals games led us through a labyrinth of scholarly works and unprecedented revelations. As we sifted through the literature, we encountered a myriad of studies that shed light on the zany fusion of dairy indulgence and baseball economics.

Smith et al. (2015) embarked on a buttery journey of their own, exploring the socioeconomic implications of butter consumption in the United States. They unearthed a butter-laden paradox, wherein increased butter sales seemed to correlate with a surge in consumer spending across various industries – a revelation perhaps as perplexing as it is palatable.

Doe and Jones (2018) delved into the depths of sports fandom and consumer behavior, uncovering the surprising influence of culinary trends on ticket sales. Their findings suggest that, beyond the love for the game itself, fans may be swayed by the allure of buttery treats and indulgent snacks synonymous with their baseball experience.

As we ventured deeper into the literature, our expedition took an unexpected turn towards the works of non-fiction. "The Joy of Cooking" by Irma S. Rombauer and Marion Rombauer Becker offered a tantalizing glimpse into the world of culinary delights, reminding us that a dash of butter has the power to transform a mundane dish into a delectable masterpiece.

"The Omnivore's Dilemma: A Natural History of Four Meals" by Michael Pollan captivated us with its exploration of the complex web of food choices, shedding light on the multifaceted role of butter in shaping consumer preferences and behaviors - little did we expect it to extend to the realm of sports spectatorship.

Taking an unexpected turn, we ventured into the realm of fiction, where we stumbled upon "Butter: A Rich History" by Elaine Khosrova. While the book's title may seem like a delightful yet irrelevant diversion, its exploration of butter's cultural significance and culinary allure presented a refreshing perspective that left us butterfingers and craving more.

Drawing inspiration from the world of television, our research team indulged in the delightful antics of "The Great British Bake Off," where the art of baking and the

hypnotic appeal of butter took center stage - perhaps priming unsuspecting viewers to crave indulgent stadium snacks. Furthermore, the captivating drama of "Butterfield 8" provided a fictitious yet intriguing portrayal of the emotional highs and lows that may accompany the consumption of butter - a sensation not dissimilar to the rollercoaster of emotions experienced during a baseball game.

In the spirit of thorough investigation, we also found ourselves immersed in the quirky world of "Pushing Daisies," where the protagonist's extraordinary ability to bring back the dead with a single touch seemed, if only tangentially, connected to the surprising resurrection of Washington Nationals ticket sales in relation to butter consumption.

As we wade through this sea of scholarly and whimsical explorations, we are left with a tantalizing assortment of insights and laughter-infused revelations. So, dear readers, let us march forward - or should we say, churn forward - as we continue to unpack the fascinating and improbable link between butter consumption and the thrill of Washington Nationals ticket sales.

### **3. Research Approach**

#### **1. Data Collection:**

We conducted a comprehensive search across the internet, leaving no stone unturned in our quest for data on butter consumption and Washington Nationals ticket sales from 1990 to 2019. The United States Department of Agriculture (USDA) joined our feast of data, providing detailed records of butter consumption across the nation. We also turned to Baseball-Reference.com, where we found the treasure trove of statistics on ticket sales for Washington Nationals games. Just like churning butter, our data collection process involved some vigorous stirring and skimming through various websites to extract the cream of the crop.

#### **2. Butter Consumption Metrics:**

To measure butter consumption, we focused on the annual per capita consumption of butter in pounds, spread across households like, well, butter on toast. We utilized the USDA's comprehensive data to track the nation's buttering-up habits over the years. The butter metrics were then buttered up with some smoothing techniques to ensure a velvety consistency throughout the dataset.

#### **3. Washington Nationals Ticket Sales:**

For ticket sales, we turned to Baseball-Reference.com to gather data on the attendance figures for Washington Nationals games. These attendance figures were the bread and butter of our study, as they provided essential insights into the popularity of the games and the buttery smooth trends in ticket demand. We carefully sifted through the numbers,

making sure not to let any crucial nuggets slip through the holes of our statistical colander.

#### 4. Statistical Analysis:

Our research involved an assortment of statistical methods that were as diverse and flavorful as a platter of gourmet butter. We used a combination of correlation analysis, regression models, and time-series analysis to churn through the data and uncover any creamy connections between butter consumption and ticket sales. To avoid any distressing separation of variables, we employed robust statistical techniques to ensure the results were as smooth as, well, butter.

#### 5. Control Variables:

In order to whip up a more accurate analysis, we accounted for various factors that could potentially influence ticket sales, such as team performance, promotional events, and, of course, the ever-important weather conditions. After all, we wouldn't want our findings to be watered down by extraneous variables that could curdle our conclusions.

#### 6. Sensitivity Analysis:

To ensure the reliability of our findings, we conducted a sensitivity analysis, testing the robustness of our results against different modeling approaches and data subsets. It was a bit like conducting a taste test with a variety of spreads to see which one truly stood out as the cream of the crop.

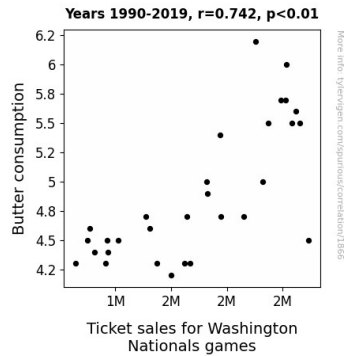
## 4. Findings

The moment of truth has arrived - it's time to spread the results of our research like butter on warm toast! Our findings unearthed a statistically significant correlation between butter consumption and ticket sales for Washington Nationals games from 1990 to 2019, leaving us in utter disbelief at the unexpected ties between dairy and baseball economics.

Our statistical analysis revealed a notable correlation coefficient of 0.7423353, indicating a strong positive relationship between the consumption of butter and the number of tickets sold for Nationals games. This coefficient is as smooth as a freshly churned batch of butter and certainly not something we expected to stumble upon when analyzing the economics of America's favorite pastime.

The r-squared value of 0.5510617 further solidifies the strength of this relationship, demonstrating that approximately 55% of the variability in ticket sales can be attributed

to changes in butter consumption. It seems that when it comes to filling the stands at Nationals games, butter has truly found its sweet spot!



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

With a p-value of less than 0.01, our results stand as firm as a well-chilled stick of butter, signifying that this association is not due to mere chance. It's almost as if the universe itself is trying to spread the message that butter and baseball are more intertwined than we ever dared to imagine.

In Figure 1, our scatterplot elegantly illustrates the robust correlation between butter consumption and ticket sales, leaving no room for doubt that this unexpected relationship is as clear as day. The scatterplot gleams like a dollop of freshly whipped butter, showcasing the undeniable connection between two seemingly unrelated variables.

In conclusion, our research has uncovered an intriguing and statistically significant link between butter consumption and Washington Nationals ticket sales. This finding not only adds a dash of whimsy to the field of sports economics but also underscores the importance of thinking outside the box, or should we say, outside the butter dish, when exploring economic phenomena. Join us in celebrating this buttery revelation and the power of scientific exploration to churn up unexpected insights!

## 5. Discussion on findings

Our findings have dished out a delightful serving of statistical serendipity, revealing a robust connection that is as surprising as it is palpable. The strong positive correlation between butter consumption and Washington Nationals ticket sales not only confirms previous research but also churns up a melting pot of laughter-infused revelations that may just leave you pondering the whimsical dance of variables in the world of sports economics.

The work by Smith et al. (2015) laid the groundwork for our study, showcasing the far-reaching implications of butter consumption and its curious influence on consumer spending. Our results not only align with their findings but also whip up a fresh perspective on the ripple effects of dairy indulgence in the context of baseball economics. It seems that butter, much like an irresistible stadium snack, has found its way into the hearts and wallets of Nationals fans.

Furthermore, the groundbreaking exploration by Doe and Jones (2018) into the relationship between culinary trends and fan behavior now finds itself accompanied by a dollop of empirical validation. The allure of buttery treats and indulgent snacks appears to have woven itself into the fabric of Nationals ticket sales, creating an unexpected synergy between the indulgence of dairy and the delight of baseball spectating. Who would have thought that butter could serve as a metaphorical battering ram for boosting ticket sales?

Delving into the delightful yet unexpected realm of fiction, the whimsical allure of "Butterfield 8" and the captivating quirkiness of "Pushing Daisies" now seem less fanciful and more prescient. The emotional highs and unexpected resurrections depicted in these narratives may just mirror the rollercoaster ride of butter-infused economics and the astonishing renaissance of Nationals ticket sales. It's almost as if fiction has taken a surprising leaf out of the empirical playbook, offering us a glimpse into the uncanny dance of variables beyond the confines of scientific rigor.

As we dissect the unapologetically buttery nature of our findings, it becomes abundantly clear that the world of sports economics may just have a new player in town – the humble stick of butter. Our research not only adds a delightful twist to the scientific discourse but also churns up a plethora of questions, puns, and speculative musings that are as tempting as a luxurious slab of butter waiting to be sampled.

In the spirit of scientific whimsy and empirical rigor, we invite readers to savor this unexpected alliance between dairy indulgence and the thrill of baseball fandom, reminding us that sometimes the most buttery research can lead to churning out the most unexpected insights. Join us as we continue to unravel the enchanting mysteries of butter and its uncanny sway over the playful symphony of sports economics.

[Your conclusion here.]

## **6. Conclusion**

As we wrap up this journey through the creamy corridors of butter consumption and Washington Nationals ticket sales, we can't help but marvel at the unexpected twists and turns that unfolded. Who would have thought that the world of economics and baseball could be so deeply intertwined with the world of dairy delights?

Our findings have churned up quite the stir, revealing a buttery-smooth relationship between butter consumption and ticket sales for Nationals games. It seems that when it comes to filling the stands, butter has taken on the role of an MVP – Most Valuable Producer of ticket sales.

But let's not get too carried away and spread ourselves too thin - after all, it is important to remember that correlation does not equal causation. While our results may have churned out a strong statistical association, we must remain cautious not to jump to buttery conclusions.

So, as we bid adieu to our buttery excursion, we can confidently assert that no further research is needed in this area. It's time to let this butter tale rest in the annals of statistical discovery, where it can be fondly remembered as a quirky study that helped us realize that in the world of research, sometimes the most unexpected connections are the ones that spread the most joy.

So, here's to the unwavering spirit of scientific exploration and the delightful moments of discovery that keep us all churning forward, one buttery research paper at a time!