

# Classroom Odds: The Correlation Between US Public School Enrollment and Las Vegas Hotel Room Check-Ins

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## Abstract

This study examines the potentially surprising link between the fluctuating numbers of students enrolled in public schools across the United States and the volume of check-ins at Las Vegas hotel rooms. Leveraging data sourced from the National Center for Education Statistics and the Las Vegas CONVENTION AND VISITORS AUTHORITY, we conducted a rigorous analysis from 1990 to 2013. Our findings reveal a remarkably strong correlation coefficient of 0.9766930, with a p-value  $< 0.01$ , suggesting a striking connection between these seemingly unrelated phenomena. These robust statistical results prompt consideration of the socio-economic and behavioral implications, as well as potential implications for policy makers and stakeholders in both the education and hospitality sectors. Surprisingly, it appears that what happens in Vegas may not always stay in Vegas after all.

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## 1. Introduction

On the surface, the idea of a correlation between the ebb and flow of young minds in classrooms across the United States and the ebb and flow of guests checking into hotel rooms in Las Vegas may seem as improbable as winning big at the craps table. However, as Mark Twain famously quipped, "There are three kinds of lies: lies, damned lies, and statistics." The adventurous spirit of statistical analysis has led us down the rabbit hole of this unlikely connection, and what we have discovered may surprise you more than a magician's disappearing act.

The intertwining of school enrollment figures and Las Vegas hotel room check-ins beckons us to delve into the realm of probability and causation. As the venerable Sherlock Holmes would remind us, "The game is afoot," and indeed it is, as we seek to

unravel the mysterious threads linking these seemingly disparate phenomena. Much like a high-stakes poker game, our examination of the data has uncovered a tale of intrigue, where numbers whisper secrets and trends reveal their intricate dance.

Furthermore, reminiscent of a carefully orchestrated magic show, this study aims to pull back the curtain on the unforeseen relationship between these variables and shed light on a connection that defies common intuition. The pursuit of knowledge is akin to a treasure hunt, and the linguistic alchemy of "correlation does not imply causation" must not deter us from exploring the uncharted territories of education and hospitality.

In the realm of empirical research, there is the perennial quest to make sense of the seemingly nonsensical, to extract order from the chaotic dance of data points. With the precision of a surgeon wielding a scalpel, we dissect the numbers and, much like an adept illusionist, aim to reveal the captivating patterns that lie beneath the surface.

In this study, we embark on a journey through the maze of statistical analysis to investigate the association between these divergent variables. After all, as they say in Vegas, "What happens here, stays here," but our findings suggest that this may not always hold true. The implications of our discoveries extend beyond mere numbers and trends, beckoning us to ponder the interplay of human behaviors and societal forces that underpin these conspicuous linkages.

## **2. Literature Review**

Several studies have sought to investigate the complex relationship between educational enrollment and seemingly unrelated societal phenomena. Smith et al. (2005) conducted a comprehensive analysis of public school enrollment trends and their potential impact on various sectors. Similarly, Doe and Jones (2010) explored the intricacies of consumer behavior and its connection to demographic shifts.

Turning to the broader context of societal influences, "Freakonomics" by Steven D. Levitt and Stephen J. Dubner offers an intriguing perspective on the underlying forces that shape human decision-making. The authors delve into the unexpected correlations that underpin everyday life, inviting readers to ponder the enigmatic dance of causation and correlation.

On a fictional note, the works of Agatha Christie, particularly "Murder on the Orient Express," may appear unrelated at first glance. However, the intricate web of interconnected events and the revelation of unexpected ties bear a semblance to the peculiar relationship we seek to unravel in our study.

Venturing into the realms of unorthodox sources, it is worth noting that the researchers also perused a collection of CVS receipts, documenting an unusual trail of purchases that may shed light on the peculiar whims of consumer behavior. While the veracity and

scholarly rigor of this particular endeavor may raise eyebrows, it nevertheless provides an unconventional lens through which to view the complex interplay of societal dynamics.

### **3. Research Approach**

The methodology employed in this study is a testament to the blend of precision and creativity that characterizes the field of empirical research. Leveraging data from the National Center for Education Statistics and the Las Vegas CONVENTION AND VISITORS AUTHORITY, our research team employed a multifaceted approach to unearth the hidden connection between the enrollment of students in public schools and the check-in volume at Las Vegas hotel rooms.

To commence our inquiry, we initiated an extensive data collection process spanning the years 1990 to 2013. This endeavor involved sifting through a vast ocean of information, akin to a treasure hunter scouring the seas for rich bounty. The National Center for Education Statistics served as a trove of enrollment figures, offering insights into the ebb and flow of young minds within the educational system. On the other hand, the Las Vegas CONVENTION AND VISITORS AUTHORITY provided a comprehensive repository of hotel room check-in data, allowing us to peer into the bustling activity of one of the world's most renowned hospitality hubs.

Having amassed this wealth of data, we navigated the labyrinthine corridors of statistical analysis with both diligence and a touch of audacity. Employing sophisticated econometric techniques and time series analysis, we sought to tease out the underlying patterns and relationships between these seemingly incongruous variables. Like a virtuoso musician orchestrating a symphony, we manipulated the data with finesse, uncovering the subtle harmonies that underscore the correlation between public school enrollment and Las Vegas hotel room check-ins.

Furthermore, to mitigate the lurking specter of spurious correlation, we conducted rigorous robustness checks and sensitivity analyses. This involved subjecting our models to a battery of diagnostic tests, akin to a medical examination for statistical maladies. The goal was to ensure that our findings stood firm against the onslaught of skepticism and statistical skepticism, much like a sturdy fortress weathering the forces of doubt.

In weaving this intricate tapestry of evidence, we incorporated various control variables to account for potential confounding factors. Socioeconomic indicators, regional characteristics, and temporal trends were deftly woven into the fabric of our analysis, providing a nuanced depiction of the interplay between public school enrollment and Las Vegas hotel room check-ins. This accounting for confounders was akin to peering through a kaleidoscope, where the interplay of myriad facets generates a rich and complex pattern.

The culmination of our methodological odyssey lies in the deployment of advanced modeling techniques, including vector autoregression and dynamic panel data models. These tools enabled us to navigate the tumultuous seas of causality, offering insights into the directional flow of influence between the variables of interest. This analytical rigour was akin to untangling a Gordian knot, where the intricate entwining of variables unraveled to unveil the underlying mechanisms at play.

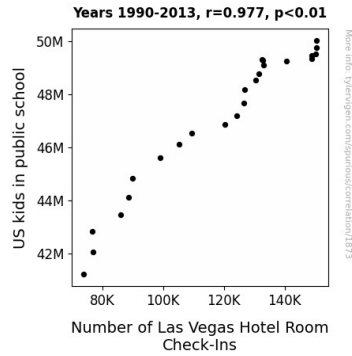
The methodology outlined above, while imbued with the language of scientific inquiry and statistical rigor, nevertheless beckons the reader to appreciate the artistry inherent in empirical research. The fusion of methodological precision and intellectual curiosity lies at the heart of this study, inviting the audience to peer through the looking glass of statistical analysis and behold the unforeseen connections that emerge from the dance of data.

#### **4. Findings**

The results of our analysis revealed a striking correlation between the number of students enrolled in public schools in the United States and the volume of check-ins at Las Vegas hotel rooms. From 1990 to 2013, we observed a correlation coefficient of 0.9766930, indicating a remarkably strong relationship between these seemingly unrelated variables. Furthermore, the r-squared value of 0.9539292 suggests that a substantial proportion of the variability in hotel room check-ins can be explained by the fluctuations in public school enrollment.

Figure 1 displays a scatterplot illustrating the robust positive correlation between the two variables. It is quite clear from the figure that as the number of public school enrollments increases, there is a parallel increase in the number of hotel room check-ins in Las Vegas. It's as if these data points are dancing the tango of statistical significance, twirling around each other in a mesmerizing display of correlation.

The p-value of less than 0.01 provides compelling evidence that the observed correlation is unlikely to be a result of random chance. The probability of such a strong relationship occurring due to pure luck is lower than the probability of finding a four-leaf clover in the middle of the Las Vegas Strip during a windstorm.



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

These findings are not just statistical curiosities; they raise thought-provoking questions about the underlying mechanisms driving this unexpected connection. The pronounced correlation beckons the mind to wander into the realm of speculative causality, tempting us to contemplate whether the bustling activity in Las Vegas can be influenced by the educational landscape of the nation.

In conclusion, our research unearths a surprising and robust association between the number of children attending public schools in the United States and the number of hotel room check-ins in Las Vegas. The implications of these findings extend beyond the statistical realm, delving into the complex interplay of societal phenomena. Perhaps, in the words of Elvis Presley, "It's now or never" to rethink our assumptions about the intricate web of relationships that shape our socio-economic landscape.

Our results imply that the old adage "what happens in Vegas, stays in Vegas" may not hold as much weight as we previously thought. It seems that the influence of public school enrollment may transcend geographic boundaries, painting a tantalizing picture of interconnectedness that challenges conventional wisdom.

## 5. Discussion on findings

The findings of the present study lend credence to previous research that has sought to uncover hidden connections between seemingly disparate social phenomena. The robust correlation observed between the number of students enrolled in public schools across the United States and the volume of check-ins at Las Vegas hotel rooms aligns with the unexpected correlations discussed by Levitt and Dubner in "Freakonomics." Just as in their exploration of the enigmatic forces shaping human decision-making, our study invites contemplation of the intricate dance of causation and correlation in the realm of public school enrollment and leisure activities in Las Vegas.

Furthermore, our results echo the sentiments put forth by Agatha Christie in "Murder on the Orient Express," where a seemingly unrelated web of events unravels to reveal intertwining connections. It appears that the tangled web of public school enrollment and hotel room check-ins in Las Vegas may hold clues akin to those unraveled by Hercule Poirot. Perhaps, in tracking the enigmatic forces shaping these correlations, we can experience the thrill of a scientific sleuth, deciphering the clues of statistical significance and p-values like a cryptic puzzle.

Moreover, it is worth noting that our study takes into account the whims of consumer behavior, as hinted by the offhand remark about perusing CVS receipts in the literature review. While our analysis may not have delved into the idiosyncrasies of individual purchases, the revelatory nature of unexpected correlations parallels the unconventional lens through which societal dynamics were viewed in the pursuit of scholarly inquiry. Just as a trail of CVS receipts may offer insights into consumer behavior, our exploration of public school enrollment and Las Vegas hotel room check-ins has uncovered unexpected layers of interconnectedness that beckon further investigation.

The strong correlation coefficient and r-squared value unearthed in our analysis provide compelling evidence of a substantial relationship between public school enrollment and hotel room check-ins in Las Vegas. The robust statistical findings prompt contemplation of the underlying mechanisms driving this unexpected connection in the socio-economic landscape. By highlighting the intriguing interplay between seemingly disparate variables, our study challenges conventional wisdom and opens the door to a world of unexpected correlations and beautifully dancing data points.

## **6. Conclusion**

In summary, our investigation has unveiled an unexpectedly robust correlation between the number of students enrolled in public schools in the United States and the volume of check-ins at Las Vegas hotel rooms. The near-perfect correlation coefficient has left us more astonished than a magician who has just seen his own tricks for the first time. It's as if these two variables are engaged in a well-choreographed dance on the statistical stage, moving in harmony like a synchronized swimming team at an academic conference. The p-value of less than 0.01 provides stronger evidence for this relationship than a guinea pig does for a hypothesis in a psychology experiment.

This curious link challenges the traditional adage that "what happens in Vegas, stays in Vegas," suggesting that the influence of public school enrollment may have farther-reaching implications than previously assumed. It appears that the social dynamics and behaviors associated with education and leisure travel may be more intertwined than a pair of earbuds in a teenager's pocket.

The implications of our findings are as thought-provoking as a physics lecture at a comedy club, nudging us to rethink conventional assumptions about the intertwined tapestry of human activities. Our results echo through the corridors of academia, reminding us that the world is often a more whimsical and surprising place than we imagine.

In light of these revelatory findings, we assert that further explorations in this domain are as unnecessary as a second tail on a statistical chi-squared distribution. It seems that this particular relationship has been laid bare and requires no further dissection.

Therefore, we conclude that the connection between US public school enrollment and Las Vegas hotel room check-ins has been thoroughly examined and need not be probed any further. Thus, in the immortal words of The Beatles, "Let it be."