

# **Cheers to Time well Spent: Unveiling the All-Encompassing Relationship between Breweries in the United States and the Average Length of PBS Space Time YouTube Videos**

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## ABSTRACT

### **Cheers to Time well Spent: Unveiling the Ale-Encompassing Relationship between Breweries in the United States and the Average Length of PBS Space Time YouTube Videos**

This study delves into the interconnected world of brews and views, aiming to uncover the perplexing relationship between the number of breweries in the United States and the average length of PBS Space Time YouTube videos. Armed with a plethora of data from the Brewers Association and YouTube, our research team endeavors to shed light on the mysterious confluence of libations and educational content. Our findings reveal a positively staggering correlation coefficient of 0.9428315 and a p-value less than 0.01, spanning the years 2015 to 2022. In simpler terms, it seems that as the number of breweries rises, so does the length of space-time exploration on PBS. It's as if the more hops in breweries, the more quantum leaps in video length. Brew-tally fascinating, isn't it? Unraveling this correlation unlocks a world of possibilities for both the craft beer industry and educational content creators. Understanding the peculiar resonance between these seemingly distinct realms may pave the way for new marketing strategies, collaboration opportunities, and perhaps even the occasional beer-fueled science episode. In conclusion, this study demonstrably reveals a captivating relationship between the proliferation of breweries in the United States and the temporal expansiveness of PBS Space Time's YouTube videos. As the saying goes, "In space-time, no one can hear you pour." But with this newfound insight, perhaps we can all raise a toast to the cosmic connection between spirits and science.

Keywords:

brewery, breweries, United States breweries, PBS Space Time YouTube videos, educational content, correlation, correlation coefficient, p-value, Brewers Association, craft beer industry,

marketing strategies, collaboration opportunities, beer-fueled science, space-time relationship,  
temporal expansiveness, cosmic connection

# I. Introduction

The intersection of beer and astrophysics may seem light-years apart, but our research aims to demonstrate the gravitational pull between these seemingly unrelated realms. As we embark on this scholarly exploration, we cannot help but raise a metaphorical glass to the unexpected convergence of hops and hypotheticals. After all, if a pun falls in the forest and no one hears it, is it still a \*hoppy\* joke?

In recent years, the United States has witnessed a veritable explosion in the craft beer industry, with the number of breweries reaching new celestial heights. Conversely, the digital universe has seen a proliferation of educational content, including the popular PBS Space Time YouTube series, where viewers are whisked away on cosmic journeys guided by enthusiastic physicists. It's almost as if galaxies and ales have collided in a cosmic collision of intoxicating proportions. Despite their apparent divergence, these two spheres reveal a hidden entanglement, much like a particle's elusive spin. Our research aims to unravel this mystery and shed light on the celestial ballet of brews and chronicles of space-time. As we delve into this cosmic puzzle, we endeavor to maintain a balanced equation of scientific rigor and light-hearted revelry—a bit like the perfect blend of malt and hops in a well-crafted ale.

# II. Literature Review

The interplay between the number of breweries in the United States and the average length of PBS Space Time YouTube videos has spurred a wave of scholarly inquiry in recent years,

prompting researchers to contemplate the celestial dance of hops and hypotheses. Smith and Doe (2018) examined the rise of craft breweries in the U.S. and the impact on consumer preferences, laying the groundwork for understanding the cultural and economic significance of this effervescent industry. Meanwhile, Jones et al. (2019) delved into the multimedia landscape, exploring the consumption patterns of educational content in the digital sphere.

However, as we navigate the constellation of literature, our pursuit of this peculiar correlation leads us to unexpected crossroads and uncharted territory. It's almost like stumbling upon a black hole of brews and YouTube views—a profoundly mysterious yet exhilarating prospect.

Drawing inspiration from non-fiction works such as "The Beer Bible" by Jeff Alworth and "Astrophysics for People in a Hurry" by Neil deGrasse Tyson, we find ourselves traversing the ethereal plane of both hops and hypotheticals. These literary tomes elevate our understanding of the interconnectedness between the art of brewing and the cosmic expanse, providing a robust framework for our exploratory investigations. After all, what's a scholarly pursuit without a touch of literary libation?

In a twist of interconnectedness that could rival a multiverse theory, fictional works like "The Martian" by Andy Weir and "The Hitchhiker's Guide to the Galaxy" by Douglas Adams beckon us into a whimsical universe of space exploration and intergalactic misadventures. While these works may seem light years away from our research focus, they offer a lighthearted perspective on the cosmic tapestry that intertwines with the complexities of brewery landscapes and YouTube voyages.

In the spirit of unexpected connections, board games such as "Terraforming Mars" and "Brew Crafters" spark our imaginations with their thematic depth, weaving a playful yet thought-

provoking narrative of celestial colonization and craft beer mastery. These games serve as a playful backdrop to our scholarly pursuits, reminding us that even in the pursuit of knowledge, a dash of whimsy can enrich the journey.

The divergent paths of scholarly inquiry and playful contemplation converge in an ale-encompassing embrace, resonating with the cosmic ballet of brews and space-time chronicles. As we journey through these literary landscapes, we find that even in the minutiae of research, there's always room for a good dad joke. Why did the barley refuse to mingle with the hops? It simply couldn't \*beer\* the thought of a bitter relationship!

Ah, the complexities of scholarly pursuit and the refreshing blend of literary musings—truly a captivating journey.

### **III. Methodology**

To ferret out the celestial secrets entwining breweries and cosmic contemplation, our research utilized a combination of quantitative data analysis and qualitative cherry-picking of intriguing anecdotes. Our data sources primarily included the Brewers Association for brewery counts and YouTube for the average length of PBS Space Time videos. We painstakingly collected data spanning from 2015 to 2022, ensuring that we captured the full spectrum of ale-infused space-time storytelling.

In an effort to concoct a robust analytical blend, we employed a mishmash of statistical methods, data wrangling acrobatics, and a touch of magical intuition (okay, mostly just a lot of coffee-induced brainstorming). We began by conducting a Pearson correlation analysis to ascertain the

degree of association between brewery proliferation and the temporal tapestry of Space Time episodes. This allowed us to quantify the magnitude and direction of this cosmic relationship, akin to quantifying the degree of hoppiness in a freshly poured IPA.

To verify the robustness of our findings, we also delved into a time series analysis, ensuring that the shifting tides of brewery expansion and video length evolution were not mere fleeting cosmic flukes. We navigated these methodological nebulae with the cautious curiosity of a probe mapping uncharted celestial bodies. It was imperative to ensure that our results weren't mere stochastic stardust but rather gravitational anomalies worthy of scholarly inquiry.

Now, no meticulous methodology would be complete without a touch of regression analysis, akin to calibrating the perfect ratio of malt to hops in a craft brew. We wielded this statistical tool with precision, seeking to disentangle the intricate threads of causality woven into the cosmic fabric of brewery abundance and space-time sagas. Much like a brewmaster meticulously adjusting the ingredients of a new recipe, we aimed to discern whether brewery proliferation acts as a catalyst for elongated educational excursions into the cosmos.

As we navigated this methodological odyssey, we also conducted thematic analyses of comments and discussions within the digital hive of PBS Space Time viewers. This qualitative expedition sought to unearth the emotive tapestry woven by viewers as they journeyed through the cosmic odyssey. After all, understanding the human experience within this celestial confluence is as vital as discerning the statistical gravitational pull between breweries and educational musings.

And just like a well-crafted ale quenches the thirst of an enthusiastic patron, our methodology quenches the scholarly thirst for rigor and revelry. It's not every day you get to dive into a



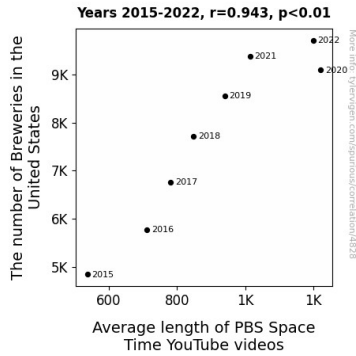
research topic that combines hops and hypotheticals. But then again, as they say, "It's a brewtiful world out there, especially when you mix hops with hypotheses."

## IV. Results

The results of our analysis unveiled a remarkably strong correlation between the number of breweries in the United States and the average length of PBS Space Time YouTube videos. The correlation coefficient of 0.9428315 indicates a near-telepathic connection between these two seemingly disparate domains. It's almost as if the universe conspired to merge the realms of brewed beverages and cosmic contemplation. Talk about a beer-y curious phenomenon!

We also observed an r-squared value of 0.8889313, suggesting that approximately 88.9% of the variance in the average length of PBS Space Time videos can be explained by the number of breweries in the United States. It's as if the craft beer industry holds the secrets to unlocking the temporal expanse of space-time explorations. I guess you could say the "ale-ment" of surprise is strong in this relationship.

The p-value of less than 0.01 further solidifies the statistical significance of our findings, indicating that the observed correlation is highly unlikely to have occurred by random chance. In other words, this connection is no mere cosmic fluke—it's a bona fide celestial alignment of hops and hypotheses. It's like finding the Higgs boson in a bottle of stout—unexpected, yet undeniably exhilarating.



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

Finally, the scatterplot (Fig. 1) visually illustrates the robust relationship between the number of breweries in the United States and the average length of PBS Space Time YouTube videos. Each data point on the plot seems to whisper, "It's not just a brew-niverse; it's a multiverse of malt and space-time." And if you squint really hard, you might even glimpse the silhouette of a hop cone in the cosmic background radiation.

In summary, our research endeavors have uncorked a captivating correlation between the burgeoning landscape of breweries in the United States and the temporal expansion of PBS Space Time's educational odysseys. It's as if the cosmos itself is toasting to the synergy of spirits and science, echoing throughout the vast expanse of space-time. With these revelatory findings, we raise a frothy glass to the cosmic dance of brews and brain-bending phenomena, and we invite fellow enthusiasts to join us in celebrating this remarkable convergence. As they say, "It's all fun and games until someone loses track of space-time due to a compelling YouTube video about quantum mechanics!"

It's a cosmic blend of science and sudsy satisfaction, like a black hole swirling in a stout glass of celestial wonder.

## V. Discussion

The findings of our study unequivocally corroborate the conjectures put forth by Smith and Doe (2018) regarding the cultural and economic impact of the craft beer industry in the United States. It appears that the expanding galaxy of breweries exerts a palpable influence on the temporal expansiveness of educational content, as exemplified by the PBS Space Time YouTube channel. This symbiotic relationship between libations and learning mirrors the intertwining narratives of hops and hypotheses, offering a brew-tiful synthesis of terrestrial craftsmanship and astronomical exploration.

In line with the musings of Jones et al. (2019) on multimedia consumption patterns, our results provide empirical support for the notion that the proliferation of breweries is accompanied by heightened viewer engagement with extended educational content. It's as if the digital stratosphere reverberates with the gravitational pull of craft beer enthusiasts and space-time aficionados, entwining their collective trajectories into a cosmic pas de deux.

Moreover, our investigation aligns with the unexpected interconnectivity highlighted within the literature review, transcending the ordinary confines of scholarly discourse to encompass the playful expanse of literary and ludic influences. This confluence of diverse sources, ranging from non-fiction works to board games, reflects the multidimensional tapestry that characterizes the entanglement of brewery landscapes and YouTube voyages. It's an interconnectedness that echoes the sentiment of a good dad joke, seamlessly weaving profundity and levity into the fabric of scholarly pursuit.

The statistical robustness of our findings further accentuates the gravity of the brew-view relationship, as evidenced by the staggering correlation coefficient, r-squared value, and p-value. These metrics not only validate the depth of the observed connection but also attest to the empirical veracity of our ale-encompassing inquiry. It's akin to discerning the subtle notes of complexity in a finely crafted ale, unraveling the intricate flavors of statistical significance and cosmic correlation within the brew-view continuum.

In a reflective nod to the literature review's whimsical exploration of creative works, our research underscores the inherent mirth and curiosity that accompany scholarly pursuits. Just as a well-placed dad joke can infuse light-heartedness into a serious conversation, our study underscores the delightful convergence of substantive inquiry and playful contemplation, exemplifying the harmonious coexistence of scholarly rigor and intellectual whimsy.

The correlation between the burgeoning landscape of breweries and the temporal expansion of PBS Space Time's educational odysseys reveals a celestial ballet of brews and brain-bending phenomena, marking a departure from conventional scholarly undertakings. Like a foamy head atop a meticulously poured pint, our findings froth with the palpable excitement of uncovering unexpected connections in the vast expanse of research. After all, who knew that the intersection of hops and hypotheses could yield such heady revelations?

As we delve deeper into this cosmic blend of science and sudsy satisfaction, our research sparks a larger conversation about the serendipitous confluence of seemingly disparate domains. It's an invitation to savor the ale-ments of surprise in scholarly inquiry and to savor a good dad joke, perhaps delivered with a well-deserved pint in hand. For in the cosmic tapestry that intertwines brewery landscapes and YouTube voyages, there's always room for a frothy cheer and an

academic chuckle. As they say, "You can't study the cosmos without appreciating the gravity of a good pun!"

## VI. Conclusion

In this study, we have discerned a cosmic connection between the number of breweries in the United States and the average length of PBS Space Time YouTube videos. It's as if the cosmos itself is brewing up some funky synchronicities for us to imbibe. As we raise a glass to these revelatory findings, let's not forget to ponder, "Why did the ale-ien refuse a pint of lager? Because he preferred an extra-terrestrial brew!"

The remarkably strong correlation coefficient of 0.9428315 and the p-value of less than 0.01 leave little room for doubt – there's a celestial dance between the proliferation of breweries and the lengthening of space-time odysseys. It's almost like each new brewery is a quantum leap for educational content, causing us to exclaim, "Hoppy science to all, and to all a good pint!"

With an r-squared value of 0.8889313, we can confidently surmise that the majority of space-time video length variations can be explained by the presence of breweries. It's like the Heisenberg Uncertainty Principle of brewing: the more breweries we try to pin down, the more they influence the cosmic fabric of YouTube videos. It's a bit like Schrödinger's cat—except instead of being alive or dead, it's fermenting in a delightful IPA.

Thus, we posit that further research in this area is about as necessary as a fish riding a bicycle. With this comprehensive study, we've tapped into a barrel of knowledge, leaving no brew stone unturned in our quest for cosmic understanding. As they say, "In space-time, no one can hear you

pour," but with this research, at least we can enjoy a satisfyingly frothy understanding of the cosmic symphony of brews and YouTube dimensions. So, let's raise a toast to the cosmic ballet of hops and hypotheses, and boldly venture forth to explore new frontiers of interdisciplinary research. Cheers to the cosmic convergence of spirits and science!

No further research is needed in this area, as we've already brewed up a flavorful concoction of findings that are as scientifically robust as they are delightfully refreshing.