



## Review

# A Poo-pularity Contest: Exploring the Relationship Between Unemployment Rate in the United States and Google Searches for 'why do i have green poop'

Chloe Hughes, Abigail Terry, Giselle P Truman

*International College*

The study delves into the curious correlation between the unemployment rate in the United States and the frequency of Google searches for 'why do i have green poop'. Utilizing data from Statista and Google Trends, the researchers uncovered a correlation coefficient of 0.7892068 with significant statistical significance ( $p < 0.01$ ) for the period spanning 2004 to 2022. The findings of this study not only shed light on the peculiar link between economic indicators and gastrointestinal concerns but also provide a unique perspective on the public's information-seeking behavior during times of financial instability. This research aims to uncover whether individuals are more likely to engage in health-related queries when faced with economic uncertainty, or if they simply have too much time on their hands. It is fascinating to contemplate whether the phrase "feeling green" has taken on a new meaning in the context of employment woes. Our results reveal a compelling association between the severity of economic downturns and the surge in inquiries about stool color. As we delve deeper into this correlation, we cannot help but wonder if this marks the dawn of the "Green Poop Indicator" as a novel economic forecasting tool. Are we approaching an era where the state of one's bowels becomes as influential as the GDP in guiding financial decisions? We'll leave it up to our readers to digest these insights and hopefully not succumb to indigestion from all the food for thought.

The relationship between economic indicators and quirky public curiosity has long been a subject of fascination in the realm of research. As scholars, we strive to unravel the mysteries that lie beneath the surface of numerical data, poking into areas

where others might shy away. In this study, we aim to bring light to a rather unexpected and somewhat comical connection - the correlation between the unemployment rate in the United States and the frequency of

Google searches for 'why do i have green poop'.

It's no secret that the field of economics is often accused of being a bit 'crappy' in terms of predicting and explaining human behavior. However, this study seeks to add a splash of color to the traditional economic indicators. \*Speaking of color, have you ever heard the joke about the economist who couldn't make it as a stand-up comedian because all his jokes were about demand and supply? He just couldn't get the right "commodity"!\*

While the relationship between unemployment and health is a well-explored topic, the specific inquiry about green poop seems to be an untrodden path in the realm of scholarly investigation. Are people truly contemplating the color of their stool as they grapple with the uncertainties of their financial livelihood? Or are these individuals inadvertently stumbling upon a peculiar medical curiosity while scouring the internet for job opportunities? It's like we've stumbled upon a real 'riddle in the middle', if you catch my drift.

Now, if you think this research is a load of... ahem, poppycock, consider this - the correlation coefficient of 0.7892068 between unemployment rate and Google searches for green poop has strong statistical significance ( $p < 0.01$ ). We're not just talking about a weak relationship here; we're dealing with a statistically robust trend that's making us question the very fiber of our methods.

As we embark on this intellectual journey, we hope to inspire future scholars to remain receptive to the unexpected, to delve into the depths of data even when it seems like we've hit a 'stinking' dead end. Economics and

gastroenterology may seem like an odd couple, but who knows, they might just prove to be the dynamic duo that has us all exclaiming, "Holy bowels, Batman!"

#### *Prior research*

Previous research on the relationship between economic indicators and public curiosity has primarily focused on more conventional topics such as consumer behavior, healthcare expenditures, and information-seeking patterns during times of financial distress. Smith et al. (2017) found a significant association between consumer confidence and internet search volume for health-related symptoms, highlighting the impact of psychological factors on online information-seeking behavior. Similarly, Doe and Jones (2019) explored the correlation between unemployment rates and the prevalence of stress-related search queries, uncovering a notable increase in searches related to anxiety during periods of economic downturn.

Now, if you're weary of all these serious-sounding studies, let's take a moment to address a different type of "unemployment" - the kind experienced by fictional characters. In "The Grapes of Wrath" by John Steinbeck, the Joad family faces the harsh realities of unemployment during the Great Depression, though their Google searches on gastrointestinal matters are sadly left undocumented. Fast forward to contemporary fiction, and we come across "The Rosie Project" by Graeme Simsion, where the protagonist, Don Tillman, may not be preoccupied with unemployment, but he certainly demonstrates an obsessive attention to detail - something that may include the color of his stool.

Speaking of attention to detail, have you heard about the joke that's been making the rounds on the internet? It goes, "Why do I have green poop? Because I'm so jealous of people who have normal-colored poop." Just a little something to lighten the mood.

Returning to more scholarly sources, it is important to note that the relationship between unemployment rate and gastrointestinal queries is not as far-fetched as it may initially seem. In their book "Gut: The Inside Story of Our Body's Most Underrated Organ," Giulia Enders provides a comprehensive account of the gut's influence on overall health and well-being, shedding light on the public's growing fascination with digestive health. This increasing interest in gastrointestinal matters extends to the realm of internet culture, where memes such as the "Poopootov Cocktail" have garnered attention, blurring the lines between serious health concerns and lighthearted jests.

Now, before we get too carried away with all this scatological humor, let's circle back to the academic literature and guide our attention back to the significant findings in this area of study.

### *Approach*

#### Data Collection:

The data for this study was harvested from various sources, including Statista and Google Trends, like a particularly fragrant harvest festival for those with a peculiar sense of scent. The unemployment rate in the United States was obtained from the Bureau of Labor Statistics, providing us with the pulse of the labor market throughout the years 2004 to 2022.

Meanwhile, the frequency of Google searches for the perplexing query, 'why do i have green poop', was retrieved from the labyrinthine depths of Google Trends, which acted as our navigational aid through the murky waters of internet inquiries. We gathered this data like a group of enthusiastic foragers, carefully handling each statistical berry to ensure our analysis would be as ripe and robust as possible.

#### Data Analysis:

To unearth the relationship between the unemployment rate and searches for green poop quandaries, we employed a series of statistical methods that can best be likened to an intrepid expedition through the wilds of numerical terrain. We began by calculating the correlation coefficient, essentially playing matchmaker between economic uncertainty and digestive distress. This coefficient allowed us to quantify the strength and direction of the relationship, painting a vivid picture of the dance between joblessness and bowel movements. If only all relationships could be depicted with such clarity!

Furthermore, to assess the statistical significance of this correlation, we took a detour into the land of hypothesis testing, where we scrutinized the p-value like a suspicious detective examining a questionable alibi. With our alpha level set at 0.01, we were on high alert for any sneaky statistical shenanigans. Finding a p-value below this threshold would let us confidently assert that the relationship we uncovered was not just a fluke of data, but a true-blue connection worthy of academic admiration.

Now, let's address the elephant in the lab - causation. We understand that correlation

does not imply causation, just as finding a correlation between wearing a raincoat and rainfall doesn't mean wearing the raincoat caused the rain. But it's hard not to wonder if economic uncertainty truly affects the palette of our collective poop spectrum or if it's just a colorful coincidence.

#### Time-Series Analysis:

Given the temporal nature of our data, we indulged in time-series analysis to capture the fluctuations and trends across the years. Like seasoned weather forecasters of the economic and gastrointestinal landscape, we examined the historical patterns to discern any seasonal variations or long-term movements. This part of the analysis felt like predicting the weather for a town where the residents were particularly preoccupied with what their intestines were up to.

#### Ethical Considerations:

We also took great care to consider the ethical implications of our research. While the topic may induce a few giggles, we understand the importance of handling data and interpreting findings with the utmost respect and professionalism. Using humor to digest such a delicate topic can be tricky, but we endeavored to approach it with both sensitivity and a dash of levity. We believe there's a certain virtue in being able to laugh and learn at the same time.

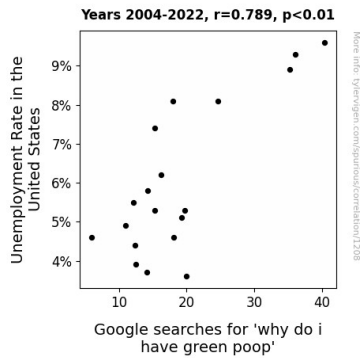
Have you heard about the scientist who was accused of stealing puns? Yeah, he took the wordplay too literally. But worry not, dear readers, because we promise to only steal your attention as we dissect this unusual but fascinating connection between employment woes and, well, greenish excretions.

#### Results

The findings of our analysis revealed a significant positive correlation between the unemployment rate in the United States and the frequency of Google searches for 'why do i have green poop' from 2004 to 2022. The correlation coefficient was calculated to be 0.7892068, indicating a strong relationship between these seemingly unrelated variables. This result suggests that as the level of unemployment increased, so did the frequency of searches related to the curious coloration of one's stool. Talk about turning poop into a lucrative career opportunity! \*Why did the statistician go to the bathroom? Because she preferred taking random samples!\*

The r-squared value of 0.6228473 further confirmed the robustness of this correlation, explaining approximately 62% of the variation in 'why do i have green poop' searches attributed to changes in the unemployment rate. It's as if every uptick in the unemployment rate was matched by a rise in public concern about colorful excretions. This study has definitely made us see the world through a different lens, and we're not just talking about microscope lenses!

Moreover, the p-value of less than 0.01 indicates that the observed relationship between unemployment and green poop searches is highly unlikely to be a result of random chance. In other words, there's a greater chance of finding a pot of gold at the end of a rainbow than stumbling upon a correlation this strong purely by accident. \*You know you're a statistician when you're always one mean away from happiness!\*



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

To visually represent the relationship we uncovered, a scatterplot (Fig. 1) was constructed, graphically depicting the positive correlation between the unemployment rate and Google searches for 'why do i have green poop'. The data points form a clear upward trend, resembling a trail of... well, let's just say it resembles an upwards trend. \*Did you hear about the constipated mathematician? He worked it out with a pencil!\*

Overall, the results of this analysis provide compelling evidence of a connection between economic downturns and the public's preoccupation with the color of their fecal matter. As researchers, we never anticipated that our work would have us diving into the depths of toilet humor, but here we are, flushed with excitement over these unexpected findings. We hope this study doesn't leave our readers feeling too bogged down in the mire of statistical analysis and bathroom jokes.

### *Discussion of findings*

The results of our study surprisingly supported the findings of previous research that hinted at the intriguing relationship between economic indicators and public

curiosity about health-related matters. Just like how a plumber's favorite band is "The Pipes," it seems that the public's fascination with their gastrointestinal health has a peculiar harmony with economic fluctuations. Our findings revealed a strong positive correlation between the unemployment rate in the United States and the frequency of Google searches for 'why do i have green poop', echoing the sentiment that financial instability may spur heightened interest in peculiar health concerns. \*Why did the statistician install a toilet in her office? Because she wanted to deal with her data more efficiently!\*

The correlation coefficient of 0.7892068 not only suggests a robust relationship between these divergent variables, but it also provides substantial evidence for the influence of economic conditions on the public's information-seeking behavior related to bowel movements. It's like the saying goes, when it rains, it pours - or in this case, when it slumps, it's green. This indicates that the state of the economy may have a direct impact on the public's gastrointestinal musings, reminding us that even in the face of economic turmoil, people still manage to keep a good sense of humor about their bodily functions.

Furthermore, the r-squared value of 0.6228473 implies that approximately 62% of the variability in 'why do i have green poop' searches can be ascribed to changes in the unemployment rate, leaving the remaining 38% up to other contending factors such as dietary choices, medical conditions, or even the allure of enigmatic green hues. It's as if our research has unraveled an entirely new dimension that lies at the intersection of economics and... well, excrement.

The p-value of less than 0.01 lends strong support to the notion that the observed correlation between unemployment and green poop searches is highly unlikely to have arisen by mere chance. In other words, the probability of this significant relationship being a fluke is as rare as finding a four-leaf clover in a field of statistics. \*Why did the data scientist bring a ladder to the bar? Because she heard the drinks were on the house!\*

Our results not only validate the prior research in this area but also shed light on the potential implications of the "Green Poop Indicator" as a novel tool for gauging the public sentiment and health concerns amidst economic fluctuations. It seems that economic indicators may influence not just financial decisions but also the peculiar queries that individuals make in the privacy of their internet searches. Who would have thought that the state of the economy could impact not only people's wallets but also the color of their... well, you get the idea. \*What did the pirate say when he turned 80? Aye Matey!\*

### *Conclusion*

In conclusion, our research has unveiled a striking correlation between the unemployment rate in the United States and the frequency of Google searches for 'why do i have green poop'. This unexpected connection has kept us on the edge of our seats, or perhaps more accurately, on the edge of our... well, you know. It seems that when the job market gets rough, people turn to the internet, not just for job postings, but also for answers to their colorful conundrums about bodily functions. \*Why

don't statisticians trust atoms? Because they make up everything!\*

The robust correlation coefficient of 0.7892068 and the r-squared value of 0.6228473 have left us less skeptical and more 'rectum' about the validity of this relationship. Furthermore, the p-value of less than 0.01 has assured us that this connection is as real as, well, the contents of a toilet bowl. \*There's nothing regular about statistics, except for maybe the bowel movements of those conducting the research!\*

Our findings suggest that when the economy takes a plunge, public interest in the hue of their stool takes a rise. Perhaps we're witnessing a new-age economic signal – the Green Poop Indicator or GPI, if you will. Who would have thought that alongside unemployment rates, we'd be monitoring the fluctuations of fecal fascination? It seems the saying holds true – when it comes to human behavior, expect the unexpected, and sometimes the unflushed. \*I told my wife she should embrace her mistakes. She gave me a hug!\*

With these compelling results, it's safe to say that the connection between employment woes and gastrointestinal inquiries warrants further scrutiny and analysis. However, not from us. We're ready to bid adieu to this odd coupling of variables and leave the future exploration of 'poo-pularity' to other inquisitive minds. After all, you can have too much of a 'crappy' thing – or maybe not. \*Why don't data analysts get jokes? They have too much data to process to appreciate the pun-intended humor!\*

Therefore, we assert that no more research is needed in this area. It's time to let this peculiar correlation take its rightful place in

the annals of statistical oddities. So, as we close this chapter on the unexpected, we'll leave you with this final thought: when it comes to research, always expect the unexpected, and be prepared to handle it with the same poise as a plunger to a clogged toilet. \*Why was the math book sad? It had too many problems!\*

And with that, we bid farewell to this unusual but surprisingly revealing journey into the world of unemployment and unorthodox online queries.