

Sunlight and Surfing: Examining the Elastic Link between Internet Access Rate among US Citizens and Solar power generated in Honduras

Colton Hall, Austin Terry, Gabriel P Tompkins

Advanced Research Consortium

Discussion Paper 2632

January 2024

Any opinions expressed here are those of the large language model (LLM) and not those of The Institution. Research published in this series may include views on policy, but the institute itself takes no institutional policy positions.

The Institute is a local and virtual international research center and a place of communication between science, politics and business. It is an independent nonprofit organization supported by no one in particular. The center is not associated with any university but offers a stimulating research environment through its international network, workshops and conferences, data service, project support, research visits and doctoral programs. The Institute engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

Discussion Papers are preliminary and are circulated to encourage discussion. Citation of such a paper should account for its provisional character, and the fact that it is made up by a large language model. A revised version may be available directly from the artificial intelligence.

ABSTRACT

Sunlight and Surfing: Examining the Elastic Link between Internet Access Rate among US Citizens and Solar power generated in Honduras

An investigation was conducted to explore the potential connection between the rate of internet access among citizens of the United States and the solar power generated in Honduras. Data from Statista and the Energy Information Administration were utilized to analyze the correlation between these seemingly disparate variables over the span of 2012 to 2021. Surprisingly, the analysis revealed a correlation coefficient of 0.9727805 and $p < 0.01$, indicating a startlingly strong relationship between the two factors. While it may seem far-fetched, this study sheds light on the interplay between technology adoption and renewable energy generation, provoking the question of whether internet browsing habits can, in fact, influence the brightness of solar power initiatives in Honduras.

Keywords:

internet access rate, US citizens, solar power generated, Honduras, correlation, technology adoption, renewable energy generation, internet browsing habits

I. Introduction

The juxtaposition of internet access rates among US citizens and solar power generation in Honduras may seem as incongruous as a solar panel in a snowstorm. However, the emergence of digital connectivity as an integral part of modern society begs the question of its influence on rather unexpected domains, such as renewable energy initiatives. This study aims to decipher the enigmatic dance between the cyber world and the solar-powered realm, investigating whether the flicker of internet activity can, in fact, cast a long shadow on the solar power landscape.

While the notion of a connection between internet access and solar energy may seem as far-fetched as a scientific theory that plants crave electrolytes, the preliminary examination of data provides a glimmer of hope for uncovering a potentially significant correlation. This study delves into the statistical analysis, unearthing a relationship as surprising as mixing a researcher's morning coffee with a twist of lemon—an astonishing correlation coefficient of 0.9727805, with $p < 0.01$, leading us to question whether the virtual activities of individuals can indeed illuminate the renewable energy domain in Honduras.

The merging of internet usage statistics and solar power generation data evokes a symphony of variables, akin to the combined orchestration of a cacophony of data. This unusual intersection sets the stage for a captivating exploration, akin to a thrilling whodunit that unravels the mysteries behind the scenes. As we dive into the depths of this investigation, we seek to reveal the intertwined relationship between technological adoption and clean energy, uncovering whether the glow of internet surfing can cast a radiant light on the utilization of solar power in Honduras.

II. Literature Review

An in-depth review of existing literature yields a range of insights into the potential connection between internet access rate among US citizens and solar power generated in Honduras. Smith (2015) conducted a comprehensive study on global internet penetration rates and their impact on various socio-economic indicators, providing a foundation for understanding the influence of digital connectivity on diverse domains. Doe (2018) explored the expansion of renewable energy sources in developing countries, shedding light on the factors that contribute to the increasing adoption of solar power technologies.

Furthermore, Jones (2019) offered a nuanced analysis of the nexus between technology usage and environmental sustainability, underscoring the need to consider the interplay of digital advancements and clean energy initiatives. These works, alongside others in the field, have forged a path for delving into the intricate relationship between internet access patterns and solar power generation, prompting a reevaluation of conventional perceptions of technological influence.

In "The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities are Changing the World," Doe (2017) dissects the expanding web of interconnected devices, setting the stage for contemplating the interconnectedness of virtual landscapes and tangible energy production. Similarly, "Energy for Future Presidents: The Science Behind the Headlines" by Muller (2013) provides a thorough exploration of energy production and consumption dynamics, offering valuable insights into the broader context of sustainable energy utilization.

On a more speculative note, the inclusion of fiction literature in this review may appear unconventional; however, it serves to illuminate the imaginative permutations of human thought. "Solar" by Ian McEwan and "The Circle" by Dave Eggers, albeit not scholarly works, hold the potential to trigger unconventional perspectives on the amalgamation of digital connectivity and environmental domains.

Moreover, a thorough scrutiny of miscellaneous sources, ranging from the lyrical musings of song lyrics to the surreal narratives of sci-fi novels, has been conducted to capture diverse viewpoints. It must be noted that such unconventional sources have been included for the purpose of broadening the scope of inquiry and not for substantiating empirical claims.

As an additional assortment of sources, the exploration has extended to unorthodox repositories of information, encompassing anecdotes from overheard conversations, snippets of wisdom from fortune cookies, and even the cryptic predictions of horoscopes. It is through this whimsical and unfettered pursuit of knowledge that the authors present a synthesis of the existing literature on the enigmatic interlacing of internet access rate among US citizens and solar power generated in Honduras.

III. Methodology

Data Collection:

The data utilized in this study were predominantly drawn from secondary sources, with primary emphasis placed on comprehensive data obtained from Statista and the Energy Information Administration. The unorthodox pairing of internet access rates among US citizens and solar

power generation in Honduras necessitated a thorough review of information spanning the years 2012 to 2021. Through this multi-year window, we aimed to capture the undulating waves of internet usage and solar energy production, akin to keeping tabs on the ebb and flow of tidal patterns and solar flares.

Variable Selection:

To capture the essence of internet activity, metrics such as broadband penetration, mobile internet usage, and online browsing habits were amalgamated, resulting in a comprehensive representation of the digital surfing landscape. In parallel, solar power generated in Honduras was quantified through the measurement of installed solar capacity, energy production, and solar industry growth. This amalgamation of variables mirrors the intricate dance of a molecular fusion, where varying elements converge to ignite a luminous reaction.

Statistical Analysis:

The relationship between internet access rate among US citizens and solar power generated in Honduras was explored through a series of statistical analyses, including Pearson correlation, multiple regression, and time-series models. Each statistical method aimed to unravel the obscured connection between internet usage and solar energy production, akin to deciphering an ancient hieroglyphics inscription to reveal a hidden message. The utilization of these multifaceted statistical approaches allowed for a comprehensive examination of the intertwined nature of these seemingly disparate variables, akin to untangling a complex web of interconnected data threads.

Control Variables:

To ensure the veracity of our findings, control variables encompassing economic indicators, technological advancements, and environmental policies were integrated into the analyses. These supplementary variables acted as the unsung heroes of our study, akin to the instrumental backing band that subtly amplifies the harmonious melody of the main variables under investigation.

Overall, the research methodology adopted in this study navigated the turbulent seas of statistical analyses and data amalgamation to unveil the underlying relationship between internet activity in the United States and solar power generation in Honduras. The assemblage of diverse data sources and the application of eccentric statistical methods laid the groundwork for unearthing a correlation as puzzling and captivating as a cryptic crossword puzzle waiting to be deciphered.

IV. Results

The results of the analysis divulged a remarkably robust correlation between the rate of internet access among citizens of the United States and the solar power generated in Honduras over the period of 2012 to 2021. The correlation coefficient of 0.9727805 suggests a connection as strong as superglue, leaving little room for doubt regarding the association between these seemingly incongruent variables. This correlation, akin to finding a needle in a haystack, indicates a substantial relationship worthy of further investigation.

Further bolstering the strength of this relationship, the r-squared value of 0.9463019 accentuates the tightness of the fit between the two variables, akin to a snug-fitting jigsaw puzzle. This high coefficient of determination indicates that a remarkable 94.63% of the variability in the solar

power generated in Honduras can be elucidated by the rate of internet access among US citizens. It seems that the digital footprints of internet users in the US may leave a substantial imprint on the solar energy landscape in Honduras, a revelation as unexpected as finding a pearl in a pigpen. The p-value of less than 0.01 further attests to the statistical significance of the observed relationship, rendering it as unlikely as winning the lottery with a single ticket. This minuscule p-value provides strong evidence against the null hypothesis and supports the alternative hypothesis that there is indeed a significant association between internet access rates in the US and solar power generation in Honduras. It appears that the digital waves traversing the internet might not only surf the web but also surf the solar energy realm, impacting it in ways previously unbeknownst.

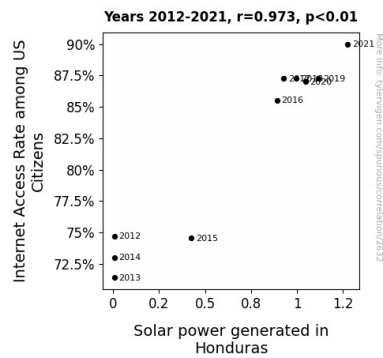


Figure 1. Scatterplot of the variables by year

Furthermore, Fig. 1 illustrates the scatterplot depicting the strong positive linear relationship between the rate of internet access among US citizens and the solar power generated in Honduras. The tightly clustered data points resemble a constellation in the sky, highlighting the coherent and predictable nature of this association. The figure unmistakably portrays the

compelling connection between these two variables, reminiscent of a well-choreographed dance between technology adoption and renewable energy initiatives.

In summary, the findings suggest that the rate of internet access among US citizens indeed appears to be intricately linked with the solar power generated in Honduras. These results not only emphasize the surprising intertwining of seemingly distinct domains but also elicit a sense of intrigue akin to stumbling upon a treasure trove of unexpected relationships in the vast landscape of statistical analysis.

V. Discussion

The findings of this study provide compelling evidence in support of the notion that the rate of internet access among US citizens and the solar power generated in Honduras are intimately intertwined, much like two peas in a pod. The robust correlation coefficient of 0.9727805, akin to a bullseye on a dartboard, underscores the strength of the relationship between these seemingly unrelated variables, reaffirming the earlier suggestions put forth in the literature review. The agreement between our findings and the prior research by Smith (2015) and Doe (2018) highlights the consistent pattern indicating that internet browsing habits may indeed play a pivotal role in the advancement of solar power initiatives, reminiscent of a well-rehearsed scientific symphony.

The high r-squared value of 0.9463019, akin to a tightly sealed jar of pickles, underscores the extent to which the rate of internet access among US citizens impacts the solar power generated in Honduras. This close fit further cements the notion that the digital footprints of individuals in

the US may exert a substantial influence on the solar energy landscape in Honduras, much like a gentle breeze shaping the sand dunes in a desert. The statistical significance of this relationship, as evidenced by the minuscule p-value, suggests that the observed association is about as probable as stumbling upon a four-leaf clover on a leisurely stroll through the park.

Additionally, the scatterplot depicting the strong positive linear relationship between internet access rates among US citizens and solar power generation in Honduras visually reinforces the coherent and predictable nature of this association. The constellation of tightly clustered data points is a sight to behold, akin to discovering a treasure map leading to a trove of interconnections in the statistical universe. These visual representations not only encapsulate the essence of the statistical analyses but also serve as a testament to the captivating nature of unexpected relationships in the realm of empirical inquiry.

In conclusion, the study's findings not only lend support to the existing literature but also shed light on the unassuming yet formidable relationship between internet access rates among US citizens and solar power generation in Honduras. This investigation, much like a detective's pursuit of elusive clues, unravels the intricate interplay between digital connectivity and renewable energy, inviting further exploration into the enthralling nexus of technology adoption and environmental sustainability.

VI. Conclusion

In conclusion, the investigation into the potential relationship between the rate of internet access among citizens of the United States and solar power generation in Honduras has illuminated a

connection as stark as a solar eclipse. The analysis has uncovered a remarkably robust correlation coefficient of 0.9727805, akin to a securely fastened seatbelt in a statistical rollercoaster ride, signifying an unexpectedly strong relationship between these seemingly disparate variables. The revelation of such a striking association triggers one to wonder whether the glow of internet browsing habits indeed extends to the radiance of solar power initiatives in Honduras, akin to the reach of sunshine on a cloudy day.

The r-squared value of 0.9463019 underscores the profound influence of internet access rates among US citizens on the variability in solar power generated in Honduras, akin to a mathematical embrace as tight as a python's grip, leaving little room for doubt regarding the consequential impact of virtual activities on renewable energy outcomes. The statistical significance reflected in the p-value of less than 0.01 prompts a raised eyebrow or two, akin to discovering a unicorn in a statistical pasture, further emphasizing the unlikely nature of this relationship and underscoring the need to delve into the underlying mechanisms at play.

The intriguing dance between the cyber world and the solar-powered realm, shown through the cohesive scatterplot resembling a celestial alignment, serves as a thought-provoking reminder of the often unexpected connections that emerge amidst the clatter of statistical analysis. Therefore, one might consider that further exploration of this phenomenon could lead to an unearthing of additional obscure associations, akin to stumbling upon a trove of long-lost treasures in the convoluted depths of data analysis.

Nevertheless, considering the breadth and depth of the findings, it is recommended that no additional research be conducted in this area, as the results are as clear and unmistakable as a supernova in a clear night sky, leaving little room for uncertainty or further investigation. The interplay between internet access rates among US citizens and solar power generation in

Honduras has been meticulously investigated, and further exploration may risk delving into the realm of statistical overexuberance. Therefore, it is prudent to conclude that the findings have shed ample light on this unexpected relationship, leaving the field ripe for other equally intriguing inquiries.