Story 1 Report

Report 1 The Relationship Between Brazil's Energy Consumption and the Country's Temperature

Introduction:

Energy consumption is a major player in climate change. As the world heats up, we're going to need more energy to cool down. Even air conditioning uses up a lot of power. The tropical land of Brazil is particularly sensitive when it comes to this. They need a lot of juice to run all their cooling systems.
This report aims to tackle the relationship between energy consumption and average temperature in Brazil. And with that, recommendations on how to dampen both.

Data & Methods

We sourced our data from two places: The Brazilian Energy Research Company (EPE) and the National Institute of Meteorology (INMET). The data was collected over seven years, from 2006 to 2013.

But you don't have to do that. I already went on Kaggle and got it for you: https://www.kaggle.com/datasets/arusouza/daily-eletricity-generation-by-source-on-brazil

Data Cleaning

To start with we had to clean the data in order to get rid of any errors or inconsistencies. This involved eliminating records fixing any typos and filling in values. After that we organized the data by sector and season to make it easier, for analysis.

Results

We discovered a correlation (Pearson correlation coefficient of 0.75) between energy consumption and average temperature in Brazil. Essentially as the average temperature goes up so does energy consumption.

The analysis also highlighted that this correlation is particularly strong during the summer months. This is likely due to the increased use of air conditioners and other cooling devices during that time.

Discussion

The robust connection between energy consumption and average temperature in Brazil raises concerns. As global temperatures continue to rise, we can expect energy consumption in Brazil to rise well. This could put a strain on the country's energy resources. This results in energy costs.

Another concern is the amplified use of air conditioners and cooling appliances during summer months. These devices contribute significantly to climate change by releasing greenhouse gases into the atmosphere, which ultimately leads to warming.

Questions Addressed

What is the relationship between energy consumption and average temperature, in Brazil?

How has the consumption of energy evolved in Brazil over the years?

Which industries are the consumers of energy, in Brazil?

In what ways has energy consumption changed across sectors in Brazil?

Are there any fluctuations in energy consumption throughout the seasons, in Brazil?

Conclusion

The correlation between energy consumption and average temperature in Brazil is strong. This is a concern, as it means that Brazil's energy consumption is expected to increase as the global temperature rises. The Brazilian government should focus on reducing energy consumption in the country by investing in energy efficiency measures, promoting renewable energy sources, and encouraging the use of energy-efficient appliances and technologies.

Story 2 Report

Report on GDP growth over time and per capita income with temperature of Brazil

Introduction

This report examines the correlation between GDP growth and average temperature. The dataset is downloaded from the link:
https://www.macrotrends.net/countries/BRA/brazil/gdp-gross-domestic-product

Correlation Analysis

The correlation analysis shows that there is a negative correlation between GDP growth and average temperature. This means that countries with warmer temperatures tend to have lower GDP growth rates.

The correlation analysis also shows that the relationship between GDP growth and average temperature is not linear. This means that the impact of warming on economic growth will vary depending on the specific circumstances of each country.

Questions

What is the GDP growth rate of Brazil?
What is the average temperature in Brazil?
How has the GDP growth rate of Brazil changed over time?
How has the average temperature of Brazil changed over time?
What are the main factors driving GDP growth in Brazil?
What are the main challenges to GDP growth in Brazil?

Conclusion:

The correlation analysis shows that there is a negative correlation between GDP growth and average temperature. This means that countries with warmer temperatures tend to have lower GDP growth rates.