Course Project – Evaluating Data Sets

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The data sets source I selected are of The International Energy Portal contains EIA’s country-level energy data. Users can view and download datasets for consumption, production, trade, reserves, and carbon dioxide emissions for different fuels and energy sources. The portal also provides access to EIA’s entire library of international reports, articles, and analyses, including Country Analysis Briefs.

**The data sets I selected from the source are:**

* Primary energy data sets for electricity consumption in the united states
* Primary energy data for the total energy consumption and sources of the United States
* EIA electricity Trends of the United States

The data sets show the capacity of used electricity for all individual states and US territories. The data sets describe several qualitative and quantitative variable data points described below. Also, the data shows analysis data of trends of technology and US regions based on electrical energy consumption and production.

**Production**

* US share
* Ranking position

**Consumption per capita**

* Millions BTU
* Rank

**Expenditures per capita**

* Dollars
* Rank

The data is broken down for each site over specific time periods of years and energy usage going as far back as 1980 to 2018. Showing the output from different energy sources and consumed values by state and population which is associated to cost per capita of each state (EIA, 2020).

**The datasets also are categorized by the type of energy productions sources such as:**

* Renewable energy
* Fossil fuels
* Nuclear energy
* Hydroelectricity
* Nonhydroelectric
* Geothermal
* Solar
* Tide
* Biomass waste

Yes, all of this data does provide accurate information to facilitate a report on energy consumption that can be used to increase public awareness of the cost of electricity throughout the United States.

**Which metrics are best for understanding the nature of the problem?**

Since we are trying to report the energy consumption to implement a cost awareness of electricity in the United States. The dates in which energy is consumed, type of energy production source, and the cost of energy per each state can be used to show which methods of energy production are more viable for lesser cost of energy in Btu. We can also use the data to compare usage from each state to see which states consume more energy than others. which we could use population data to configure new metrics.

**How do geography and seasonality affect energy consumption?**

Geography seems to have some diverse effects on the consumption of energy values and ranking. Rankings of total energy consumed per capita per state from the total energy rankings data chose this to be significant. There are other values that would need to be taken in consideration such as the production of the state's energy the resources, prices, population, and environmental factors.

As I am sure I can assume that seasonal factors play a role in energy consumption in some states especially those in colder regions of the country that during winter they consume more energy. Yes, there are current trends that show quarterly in specific states energy consumption is significantly higher based from the production technology of electricity during the cold seasons. *(EIA, 2020)*.

**Have advancements in technology reduced energy consumption?**

Absolutely, current Trend data shows that wind became the third-largest source of U.S electricity generation capacity in 2019, surpassing nuclear capacity in 2019. The data also shows that 12 U.S states more than 30% of the electricity from nuclear power including Illinois, Pennsylvania, and South Carolina. It would seem that nuclear technologies and solar and wind Technologies are adventitious to facilitating energy needs for those States who employ them. It would seem that there is significant evidence to support advancements in technology reduce consumption.

# References

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