

Data Documentation

“The relationship between the number of trams and greenhouse gas emissions”

Abstract

"Washington State Electric Vehicle and Greenhouse Gas Emissions Data" is a dataset that provides a comprehensive analysis of the relationship between the adoption of electric vehicles (EVs) and greenhouse gas (GHG) emissions in the state of Washington. It comprises a variety of data obtained from two primary sources and spans the period from November 10, 2020, to November 17, 2023. The GHG Reporting Program Publication detail emissions data for multiple regions of Washington State, whereas the Electric Vehicle Population Data offers insights into the model years, manufacturers, and geographic distribution of electric vehicles.

Central to this dataset are GHG emissions totals, categories, and geographic information, in addition to EV model year, make, and location (county and city), which constitute the dataset's core. The relationship between EV adoption and greenhouse gas emissions in the state can be comprehensively examined through the utilization of these variables.

With its utility in policy development and environmental research, this dataset is particularly advantageous for assessing the ecological consequences of electric vehicle (EV) implementation. This method cannot, however, be used to establish a causal relationship between the adoption of electric vehicles and the reduction of statewide emissions as a whole.

1. Dataset Overview

- **Title:** "Washington State Electric Vehicle and Greenhouse Gas Emissions Data"
- **Description:** A comprehensive dataset combining information on electric vehicle populations and greenhouse gas emissions in Washington State, aiming to analyze the environmental impact of EV adoption.
- **Time Period:** November 10, 2020 to November 17, 2023
- **Geographic Scope:** Washington State, USA

2. Data Sources and Provenance

- **Electric Vehicle Data:** Sourced from the "Electric Vehicle Population Data", covering model years, makes, and geographic details of EVs in Washington.
- **Greenhouse Gas Emissions Data:** Derived from the "GHG Reporting Program Publication", detailing emissions data across various regions in Washington State.
- **Data Processing:** Data were filtered, merged, and aggregated to focus on the relationship between EV adoption and GHG emissions.

3. Key Variables and Their Descriptions

- **EV Data:** Model year, make, county, city.
- **GHG Data:** Emission totals, year, county, city.
- **Derived Metrics:** Total EV count per region and year, total GHG emissions per region and year, emission categories based on mean values.

4. Data Quality and Limitations

- **Completeness:** Addresses EV adoption and GHG emissions, but may not encapsulate all factors influencing emissions.
- **Limitations:** Potential underrepresentation of certain vehicle types or geographical areas; emissions data may not include all sources.

5. Ethical Considerations

- **Privacy and Anonymity:** Ensured by not including personally identifiable information in the EV dataset.
- **Representation and Bias:** Efforts to accurately represent EV distribution and GHG emissions, but acknowledges potential biases due to data scope and limitations.
- **Environmental Impact:** Data used to assess and inform policies for environmental sustainability.

6. Usage and Applications

- **Intended Use:** Analysis of EV adoption impact on GHG emissions, policy formulation, environmental studies.
- **Not Suitable For:** Drawing definitive conclusions on causality between EV adoption and overall state-wide emissions reduction.

7. Contact Information

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Design Considerations:

- **Visual Elements:** Use charts or graphs for key metrics like EV distribution or emission trends.

- **Accessibility:** Ensure the label is easily readable with clear headings, bullet points, and a logical flow of information.
- **Creative Elements:** Incorporate design elements that make the label visually engaging without sacrificing clarity.