# Analyzing Environmental Spending Trends: A Comparison Across Political Party Preference and Awareness

**Intro to Data Analytics**

**DATA220L-112**

**EcoTrackers**


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# Analyzing Environmental Spending Trends: A Comparison Across Political Party Preference and Awareness

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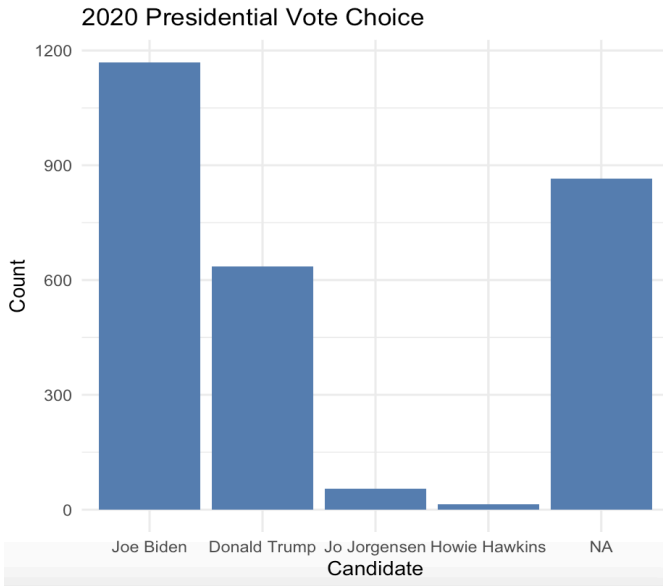
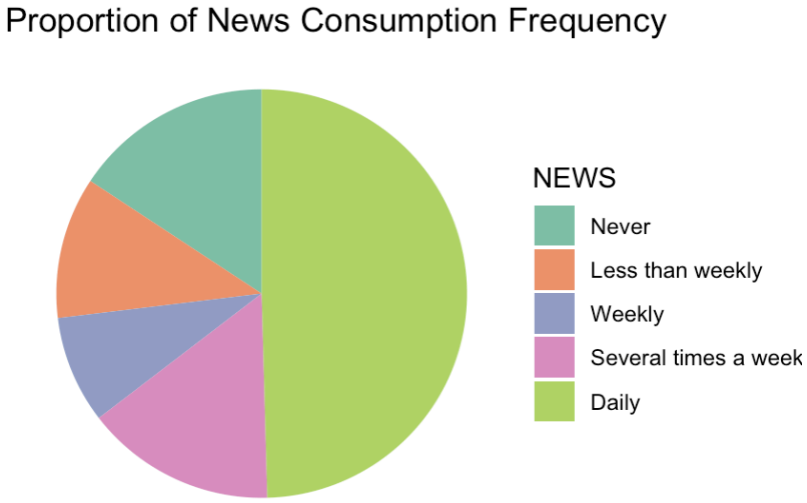
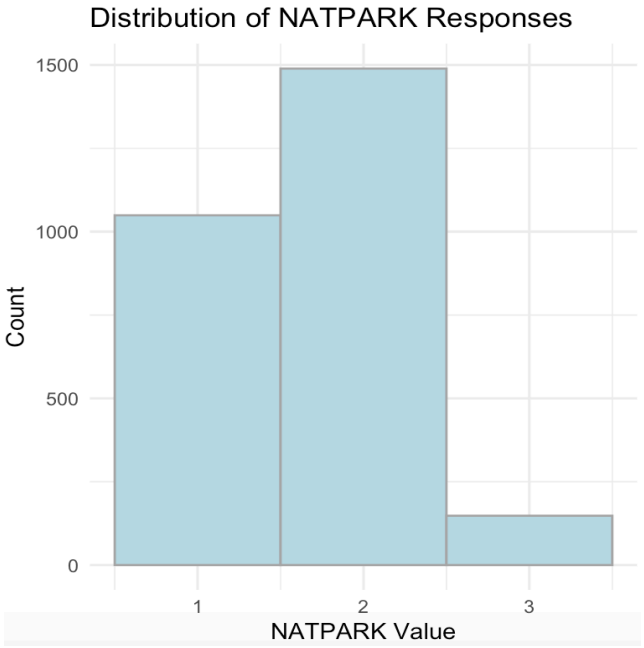
## PRES20:



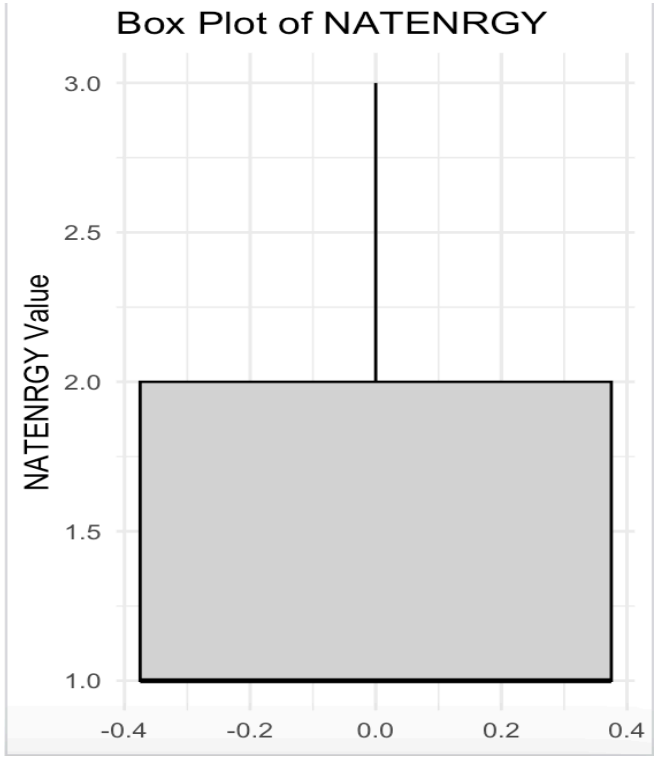

## NEWS:



**NATPARK:**




**NATENRGY:**



# Project Objective and Research Question

## Project Objective

The project objective is to analyze environmental spending data and examine how it correlates with political party affiliation. This includes identifying trends and patterns in data provided by the General Social Survey (GSS) as well as exploring differences in spending across political parties to gain a better understanding of this potential relationship. Specifically, we will incorporate variables such as voting behavior in the 2020 U.S. presidential election (PRES20), frequency of newspaper readings (NEWS), opinions on government spending for parks and recreation (NATPARK), and views on spending for alternative energy sources (NATENRGY).

## Research Question

Does political party affiliation influence environmental spending priorities and preferences and what role do voting behavior, consumption of news, opinions on spending for parks and recreational services, and views on spending for alternative energy sources play in shaping these spending prerogatives?

## Details:

### 1. Subset of GSS Data:

- Political party affiliation
- Environmental spending

### 2. Task to Investigate:

- Exploring whether there is a relationship between political party preference/political awareness and environmental spending

### 3. Four Related Variables:

- PRES20 1.000 Did you vote for Joe Biden or Donald Trump?
- NEWS 1.000 How often do you read the newspaper--every day, a few times a week, once a week, less than once a week, or never?
- NATPARK 1.000 (... are we spending too much, too little, or the right amount on …. Parks and recreation
- NATENRGY 1.000 (... are we spending too much, too little, or about the right amount on) Developing alternative energy sources

# Review the Related Work

## Samples

1. Pacca, L., Curzi, D., Rausser, G., & Olper, A. (2021). The Role of Party Affiliation, Lobbying, and Electoral Incentives in Decentralized US State Support of the Environment. *Journal of the Association of Environmental and Resource Economists*, *8*(3), 617–653. https://doi.org/10.1086/711583

Positives: States with abundant oil or high-polluting sectors tend to contribute more economically. Governors receiving higher contributions are associated with lower expenditures on environmental conservation efforts. Lobbying, specifically polluting lobbies, may affect a governor's decision-making. Environmentalists may become more active by persuading politicians and the voting public when polluting lobbies are stronger. Results suggest that environmental expenditures increase by about 10% under Democratic governors compared to Republican ones (Pacca et al., 2021).

Negatives: This article focuses on governors, which may limit variability due to a lack of data from other political systems and government organizations (Pacca et al., 2021).

2. Cruz, S. M. (2017). The relationships of political ideology and party affiliation with environmental concern: A meta-analysis. *Journal of Environmental Psychology*, *53*, 81–91. https://doi.org/10.1016/j.jenvp.2017.06.010
3.

Positives: Political party affiliation is demonstrated to have had a statistically significant positive relationship with environmental concerns. Political ideology has an even stronger relationship (Cruz, 2017).

Negatives: Studies were conducted at different times, so different political movements, shifts, or environmental concerns could have changed, which may have caused differences, a lack of trends/patterns, or unreliability in data (Cruz, 2017).

4. McCright, A. M., Xiao, C., & Dunlap, R. E. (2014). Political polarization on support for government spending on environmental protection in the USA, 1974–2012. *Social Science Research*, *48,* 251–260. https://doi.org/10.1016/j.ssresearch.2014.06.008

Positives: Provides history into the issue of polarization between the two parties and how they view environmental spending. Laying a strong basis for what each party believes in and what they want to spend money on (McCright et al., 2014).

Negatives: It provides important background information on the topic and why and how each political party goes through their thought process on economic spending however, it only references our governmental system from pre-2012 so it would be before the Paris Agreement, which had a massive change on our governmental views with regards to economic spending (McCright et al., 2014).

## The Merits of Your Project

Based on the previous step, this project provides different advantages since it builds upon previously existing research. These advantages include:

1. A comprehensive understanding of political party affiliation and political influence on environmental spending
2. Additional factors, such as lobbying, may influence environmental spending
3. Extends beyond a presidential or governor's role, including policymakers, legislators, and additional levels of government
4. Tracking of historical trends and patterns in environmental spending
5. Help to shape public policy and increase advocacy

An end user should report this project because it will provide data-driven results of political party affiliations on environmental spending. This project will address limitations to previous studies, such as the Pacca et al. (2021) study, which focuses solely on a governor's role in environmental spending. Additionally, this project can inform legislators, advocacy groups, etc., on different environmental efforts and initiatives, further help citizens to have a better understanding of environmental spending and concerns on a political scale, and increase public awareness and decision-making.

## GitHub Repository Address

Github link: Data-220-112-Analyzing-environmental-spending-trends-Ecotrackers

## Descriptive Statistics

### PRES20:

| Min. | 1st Qu. | Median | Mean | 3rd Qu. | Max. | NA's |
|---|---|---|---|---|---|---|
| 1.000 | 1.000 | 1.000 | 1.428 | 2.000 | 4.000 | 1352 |

Interpretation:

These statistical values summarize the distribution variable PRES20. The distribution is skewed right based on the minimum, 1st quartile, median, and 3rd quartile, indicating that most values are concentrated around 1.0 and 2.0. The median (1.000) is slightly lower than the mean (1.428), suggesting a right-skewed tendency. The upper limit of the data is shown by the maximum value of 4.000, while a substantial amount of incomplete data is indicated by the 1,325 missing values (N/As).

### NEWS:

| Min. | 1st Qu. | Median | Mean | 3rd Qu. | Max. | NA's |
|---|---|---|---|---|---|---|
| 1.000 | 2.000 | 4.000 | 3.717 | 5.000 | 5.000 | 1397 |

Interpretation:

These statistical values summarize the distribution variable of NEWS. The distribution appears slightly left-skewed based on the minimum, first quartile, median, and third quartile, suggesting that most values are concentrated around 2.000 and 4.000. The mean (3.717) is slightly lower than the median (4.000), reinforcing this left-skewed tendency.

**NATPARK:**

| Min. | 1st Qu. | Median | Mean | 3rd Qu. | Max. | NA's |
|---|---|---|---|---|---|---|
| 1.000 | 1.000 | 2.000 | 1.667 | 2.000 | 3.000 | 73 |

Interpretation:

These statistical values summarize the variables of NATPARK. The minimum value is 1.000, and the maximum is 3.000, indicating a relatively small range. The 1st quartile (1.000) and median (2.000) suggest that at least half of the data is concentrated between 1.000 and 2.000. The mean (1.667) is slightly lower than the median, which suggests a slight left skew in the distribution. The 3rd quartile (2.000) indicates that most values do not exceed 2.000, with only a few reaching 3.000. There are 73 missing values (NAs) in the dataset.

**NATENRGY:**

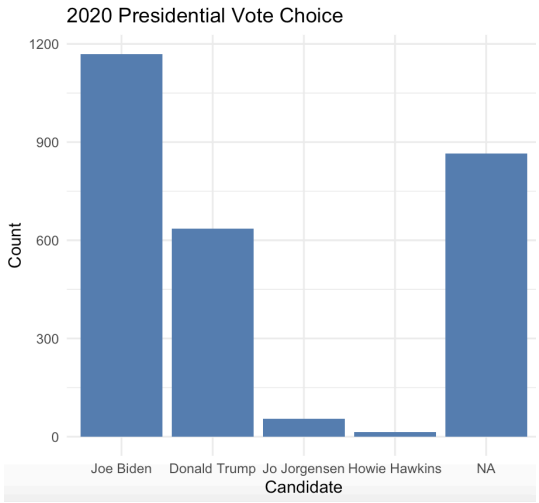
| Min | 1st Qu. | Median | Mean | 3rd Qu. | Max | NA’S |
|---|---|---|---|---|---|---|
| 1.000 | 1.000 | 1.000 | 1.561 | 2.000 | 3.000 | 123 |

Interpretation:

These statistical values summarize the variables of NATENRGY. The minimum (1.000), 1st quartile (1.000), and median (1.000) indicate that a large portion of the data is concentrated at the lowest value. The mean (1.561) is slightly higher than the median, suggesting a slight right skew in the distribution. The 3rd quartile (2.000) and maximum (3.000) show that while most values are low, a portion extends to higher numbers. Additionally, there are 123 missing values (NAs) in the dataset.

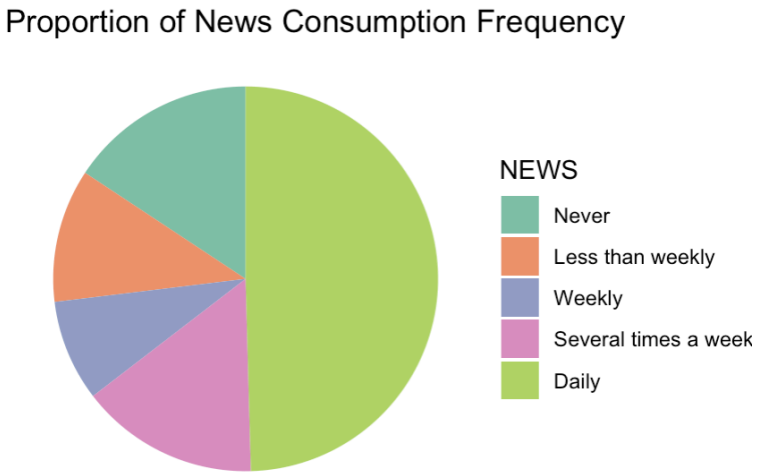
## Data Visualization

### PRES20: Bar Chart



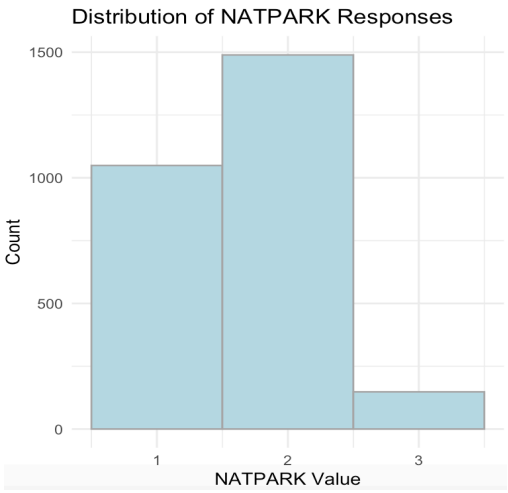

The bar chart for the PRES20 variable shows survey respondents's voting choices in the 2020 U.S. presidential election. Each bar represents the number of survey respondents who voted for each candidate in 2020, with President Joe Biden having the tallest bar. This indicates that most respondents voted for President Joe Biden while the least amount of respondents voted for Howie Hawkins. The N/A bar column represents respondents who did not vote or chose not to express who they voted for.

### NEWS: Pie Chart



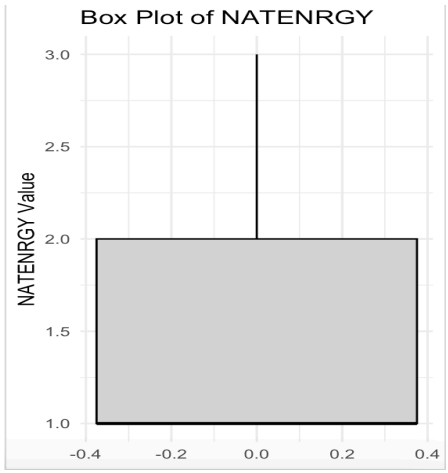
The pie chart for the NEWS variable represents the frequency of news consumption across survey respondents. The largest response is daily, indicating that almost half of survey respondents consume the news daily, while the smallest response is weekly, indicating that less than a quarter of respondents consume news weekly. This distribution helps to understand the survey respondent's engagement with current news.

**NATPARK: Histogram**




The histogram for the NATPARK variable represents the distribution of responses related to national park engagement. The largest response category is 2, indicating that the majority of the survey respondents fall into this group, followed by category 1 with a slightly lower count. The smallest response is category 3, showing significantly fewer respondents in this group. This distribution helps to understand the level of engagement or visitation patterns among survey participants.

**NATENRGY: Boxplot**



The boxplot for NATENRGY variable represents the distribution of responses related to national energy attitudes. The median response is around 2, with most responses falling between 1 and 2, indicating a relatively concentrated distribution. The upper whisker extends to 3, suggesting some higher values, but no extreme outliers are present. The distribution helps to understand survey respondents' general sentiment or preference regarding national energy topics.