

Team 6 Research Topic Proposal

Most households in the United States rely on some type of energy source to run. As energy prices rise, they take greater proportions of household incomes (Chester and Morris, 2016). To understand how energy poverty relates to household demographics, such as race, gender, income, and education, we examine a national survey on energy consumption. Specifically, we look at energy costs for heating and cooling, medical responses to the lack of heating and cooling, as well as poverty status using energy metrics. Highlighting these factors will help address infrastructure improvements to uplift marginalized people out of poverty, and promote energy equity.

We are asking the following SMART questions:

How do poverty status in 2020 and other socioeconomic factors impact people's ability to manage their energy consumption and thus their health?

Does this energy poverty status relate to demographics such as race and income status? Did the COVID-19 pandemic affect the energy consumption of low-income households? Do respondents require medical attention due to extreme heat or cold in their homes?

To explore this question, we will be using the US Energy Information Administration's (EIA) Residential Energy Consumption Survey (RECS). RECS is a survey released every five years by EIA. There are over 700 variable columns in the survey, as well as over 9000 observations. RECS survey samples 18,500 households on their energy usage and energy-related decisions.

We are looking to use methods such as random forest, correlation matrix, and multilinear regression to examine the relationship between income status, socioeconomic demographics, and energy consumption. Additionally, we would like to be graded as a team for our presentation slides.

Dataset source: [Microdata - Residential Energy Consumption Survey \(RECS\)](#)

Access our GitHub repository [here](#).

References:

Chester, Lynne, and Alan Morris. "A New Form of Energy Poverty is the Hallmark of Liberalised Electricity Sectors." *The Australian journal of social issues* 46.4 (2011): 435-59. CrossRef. Web.