



The Association Between Support for Renewable Energy Initiatives and Views of the Severity of Global Warming



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Introduction

- In 2021, renewable energy made up 12.2% of US energy consumption, and 19.8% of US electricity generation (US Energy Administration 2021). The largest renewable energy end-use sectors are in electric power (59%) and industries (19%) (US Energy Administration 2021).
- The current scientific literature has studied the association between support for renewable energy initiatives and belief in global warming at length. However, there is a lack of research in the specific study of the relationship between support for renewable energy and views of the severity of global warming, as well as other factors such as gender and whether someone's region has experienced the impacts of global warming.
- There is also a lack of research in the relationship between support for renewable energy and gender, which will also be explored in this project.

Methods

Sample

- Data from the National Survey on Energy and the Environment (NSEE) is based on a group of 929 randomly selected individuals, ages 18 or older. Individuals were reached in 2017 by phone, either on a landline or cell phone, and were asked questions pertaining to the study in English only. Individuals were called up to ten times, and the response rate was 9%.
- The margin of error for surveys was calculated to be $\pm 3.2\%$ at a 95% level of confidence. The sample was also weighted by age, race, education levels, income, and gender to reflect the larger population.

Measures

- Support for renewable energy, views of the severity of global warming, gender, and all other variables in the dataset were all measured with questions according to the variable levels.
- Ex. In your view, is global warming a very serious problem (coded as 1), somewhat serious (2), not too serious (3), or not a problem (4)?
- Support for renewable energy was coded dichotomously in terms of either high or low support across multiple variables representing different renewable energy initiatives.

Research Questions

- Is there a relationship between support for renewable energy initiatives and views of the severity of global warming?
- Does the relationship between support for renewable energy initiatives and views of the severity of global warming differ based on gender and whether someone's state has already felt the negative effects of global warming?

Results

Univariate

- The percentage of individuals with low support for renewable energy initiatives was 59%, and the percentage of individuals with high support for renewable energy initiatives was 41%.
- The percentage of individuals who believe that global warming is a serious problem is 60.5%, and the percentage of individuals who believe that global warming is not a serious problem is 39.5%.

Bivariate

- When examining the association between support for renewable energy (binary categorical response) and views of severity of global warming (categorical explanatory), a chi-square test of independence revealed that among those who held views that global warming is **less severe**, more people **held low support** for renewable energy initiatives (82%). Among those who held views that global warming is **more severe**, more people held **high support** for renewable energy (72%). This association is shown in **Figure 1**.
- $\chi^2=128.76$, 3 df, $p<2.2e^{-16}$

Multivariate

- Views of the severity of global warming and whether an individual's state has already felt the effects of global warming **were both associated** with support for renewable energy after controlling for gender.
- People who **somewhat agreed** that their state has already felt the effects of global warming, and people who believed that global warming was a **somewhat serious** problem were **not** found to be significantly associated with support for renewable energy.
- The **more serious** a problem an individual believes global warming is, the **more likely** they are to support renewable energy initiatives. Specifically, the odds of someone having high support for renewable energy is **halved** for each level in the severity variable. This association, while controlling for gender, is shown in **Figure 2**.

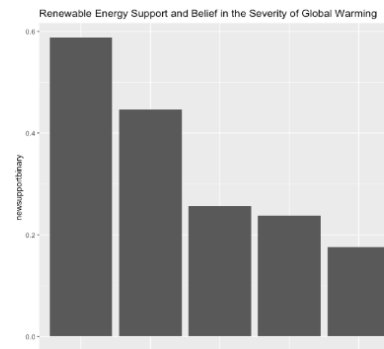


Figure 1: Association between support for renewable energy and beliefs of the severity of global warming. 1&2 represent high severity, 3&4 represent low severity.

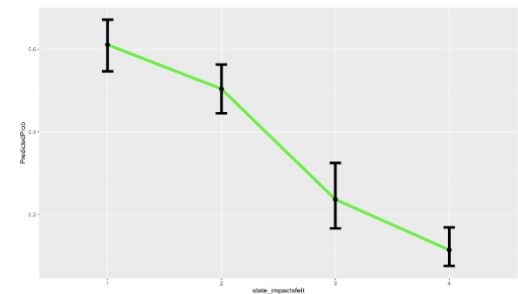


Figure 3: Association between support for renewable energy (y-axis) and whether an individual's state has already felt the effects of global warming (x-axis). 1&2 on the x-axis represent that the state has already felt the negative effects of global warming, 3&4 represent that they haven't yet.

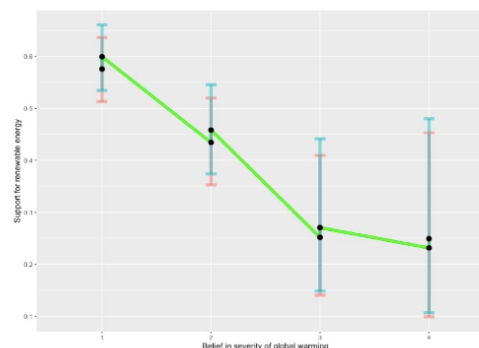


Figure 2: Association between support for renewable energy and beliefs of the severity of global warming while controlling for gender.

Discussion

- Overall, results suggest that there could be a positive association between belief that global warming is a severe problem and high support renewable energy.
- Overall, results suggest that there could be a positive association between someone's state feeling the effects of global warming and high support for renewable energy.
- Further research is needed to determine whether differences in gender are based on other factors such as socioeconomic differences.

Fraune, C. (2015). Gender matters: Women, renewable energy, and citizen participation in Germany. *Energy Research & Social Science*, 7, 55-65. <https://doi.org/10.1016/j.erss.2015.02.005>

Myers, Teresa A., et al. "The Relationship between Personal Experience and Belief in the Reality of Global Warming." *Nature Climate Change*, vol. 3, no. 4, 2012, pp. 343-347. <https://doi.org/10.1038/nclimate1754>.

Sambrook, Kate, et al. "The Role of Personal Experience and Prior Beliefs in Shaping Climate Change Perceptions: A Narrative Review." *Frontiers in Psychology*, vol. 12, 2021, <https://doi.org/10.3389/fpsyg.2021.669911>.

Multivariate (cont.)

- Similarly, an individual who believes their state has already **felt** negative effects of global warming is **more likely** to support renewable energy initiatives (1.6 times) than an individual who believes their state has **not felt** negative effects of global warming (**Figure 3**).