The Association between Age and Support for Positive Government Action Toward Renewable Energy in the United States

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Introduction

- Over 150,000 mortalities occur per year due to climate change according to the World Health Organization (Kasotia, 2007).
- 75 percent of climate change-causing emissions originate from energy sources (Lotzof).
- Based on U.S. and regional survey data, Millennials are more likely than older generations to approve of renewable energy (Hamilton et al., 2019).
- Age is associated with support for different types of renewable energy, with younger individuals being more likely to support wind energy and solar energy such as large-scale solar farms, while older people are more likely to support hydro energy (Donald et al., 2021).

Research Questions

- Is there an association between age and support for positive government action toward renewable energy in the United States?
- Does the association between age and support for positive government action toward renewable energy in the United States differ when controlling for highest level of education completed?

Methods

Sample
- Data were drawn from the National Survey on Energy and the Environment (NSEE), a nationally representative sample of 929 U.S. residents aged 18 and older conducted via telephone surveys from 10/04/2017 to 11/19/2017.

Measures
- Participant age was measured in categories and coded in four levels, with 1 as 18—29 years old, 2 as 30—44, 3 as 45—64, and 4 as 65 and older.
- Support for positive government action toward renewable energy was assessed using the sum of participants' numerical reactions to five different statements. These statements are as follows: State governments should increase taxes on all fossil fuels (1—4); State governments should require set portion of electricity to come from renewables (1—4); Support for increasing subsidies for renewable energy (1—5); State governments should require more energy efficiency for buildings & appliances (1—5); State governments should support increased use of nuclear power to reduce greenhouse gas emissions (1—4). The meaning of each numbered response was flipped, so that 1 indicated least amount of support and 4/5 indicated highest amount of support. The government sum index ranged from 0—22.
- Highest level of education completed was measured with the ordinal variable "demog_edu", coded in five levels. 1 represents less than HS graduate, 2 represents HS graduate, 3 is some college or technical school, 4 is college graduate, and 5 is grad or professional degree.

Results

Univariate
- 17.98% of participants are ages 18—29, 19.89% are 30—44, 36.52% are 45—64, and 25.62% are 65 and older, with a skew toward older participants.

Bivariate
- A bivariate analysis test showed that **age was significantly and negatively associated** with participant support for positive government action toward renewable energy ($p < 0.001$).
- ANOVA analysis showed that there is a **significant association** between age and support for positive government action toward renewable energy (F=6.97, p=0.0001).

Figure 1. Age and Corresponding Average Support for Positive Government Action Toward Renewable Energy
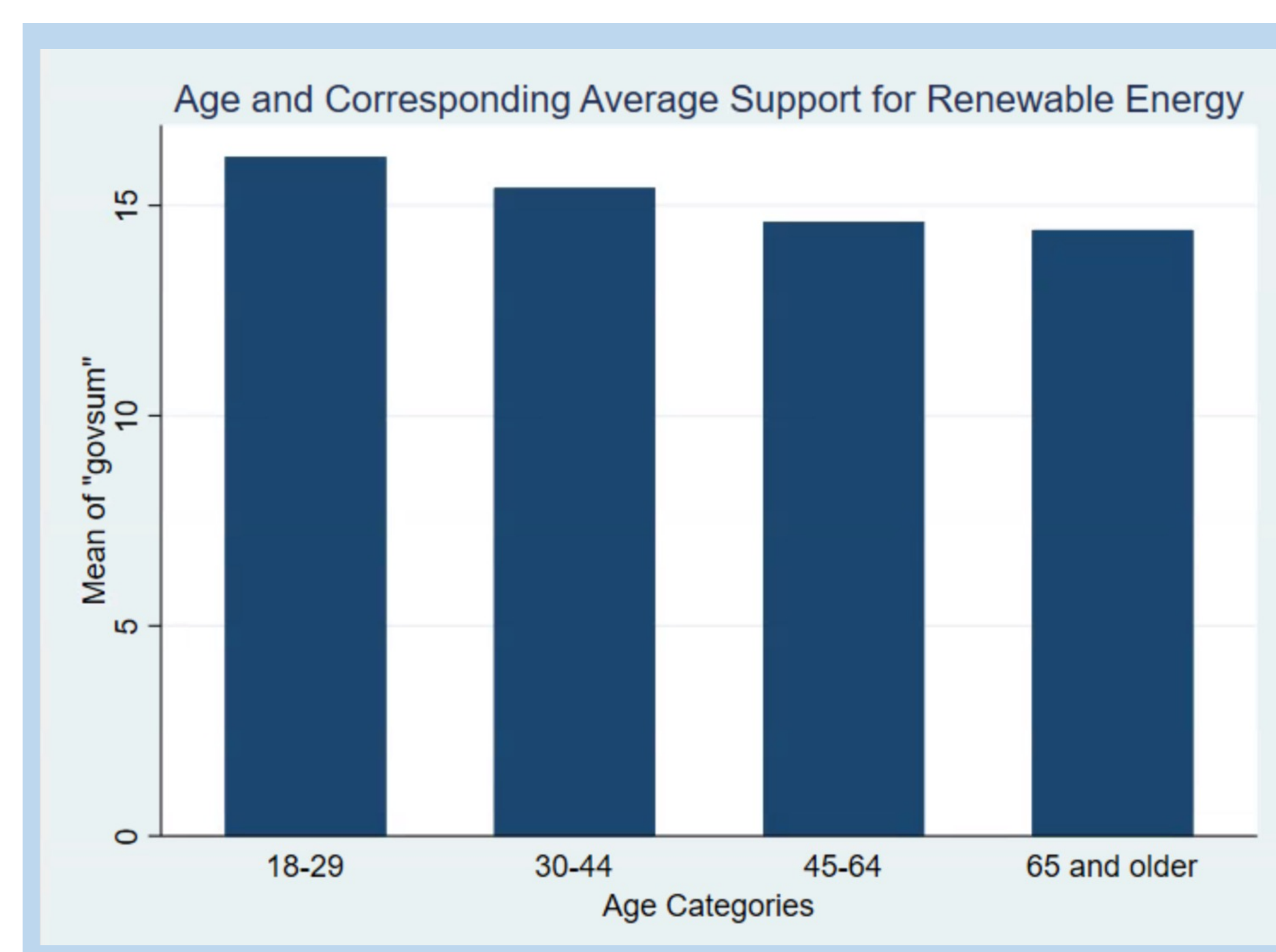

- Additionally, ANOVA analysis showed that participants in age groups 45—64 and 65+ **significantly lower support** for positive government action toward renewable energy when compared to age group 18—29, indicated by lower mean scores on the government sum index scale ($p < 0.001$, Figure 1).

Multivariate
- Highest level of education achieved is a **moderator** for the association between age and support for positive government action toward renewable energy.
- Controlling for highest level of education completed, age is **significantly associated** with support for positive government action toward renewable energy within the age categories of 45—64 ($p < 0.001$) and 65 and older ($p < 0.001$).

Figure 2. Age and Corresponding Average Support for Positive Government Action Toward Renewable Energy by Highest Level of Education Completed
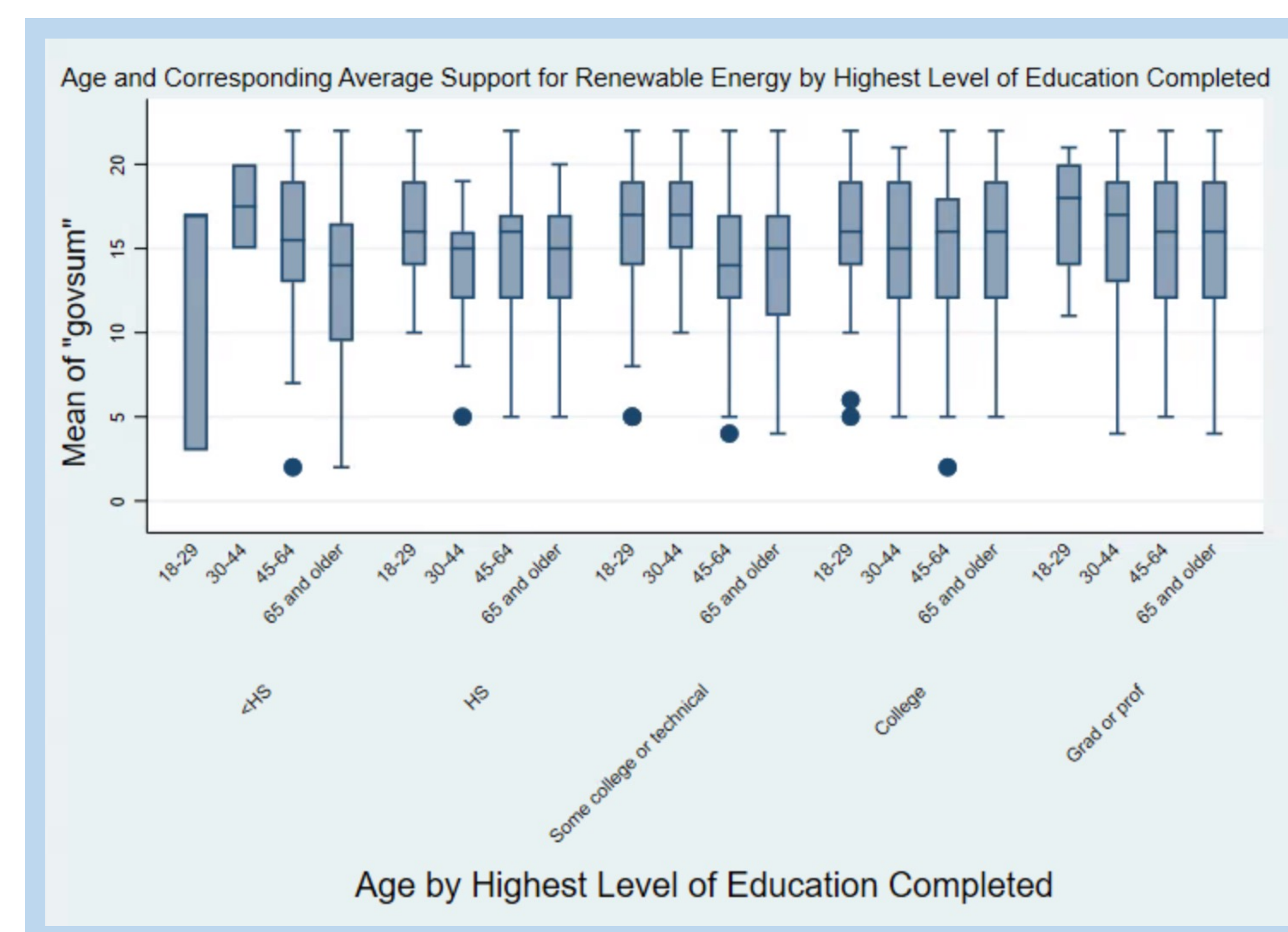
Discussion

- Age is associated with support for positive government action toward renewable energy for certain age groups when compared to age group 18 to 29.
- Notably, the NSEE contains certain biases, as the data was collected from a telephone survey. Therefore, participants self-reported their responses rather than the occurrence of outside observation. Additionally, it could be necessary to consider the impact of its format, over the phone, rather than an in-person survey.
- This dataset also has limitations. These include the limited sample population, the small time period in which the study was conducted (October—November 2017), and the particularities of the questions asked.
- Campaigners and organizations might use this information to improve campaigns for renewable energy and better understand what demographic groups should be target audiences for information on renewable energy.
- Further research is needed to determine what other factors could be associated with support for positive government action toward renewable energy, for example one's location.

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