

GSS Education and Environment*

Attitude-behaviour gap in environmental protection by degree obtained

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The attitude-behaviour gap is a phenomenon in which individuals' claims do not align with their actions, often observed in the context of social change efforts. This paper investigates the relationship between respondents' attitude-behaviour gap towards environmental protection, and their education level obtained. Using data from the US 2021 GSS, we find that respondents whose highest obtained degree is highschool exhibit the largest attitude-behaviour gap; despite claiming a willingness to pay higher prices to protect the environment, they have not donated towards environmental protection in the past five years. These findings identify the groups of respondents who require more support in translating their positive attitudes towards environmental protection into action.

1 Introduction

As the condition of the natural environment continues to worsen, concerns regarding environmental challenges such as climate change, loss of biodiversity, and pollution, have intensified (Tollefson 2022). Environmental and social development initiatives emphasise the need for collective action and effort (Agency, n.d.), as environmental change is not solely a physical issue, but also a matter of social justice; individuals who are socially, economically, and politically disadvantaged are disproportionately impacted by the consequences of environmental problems (University, n.d.). However, there is often a discrepancy between people's attitudes and their behaviours (Agency, n.d.), known as the "attitude-behaviour gap" in social psychology (Hyun Jung Park 2020).

Education has been recognised and studied as a crucial tool in promoting social change as it provides individuals with knowledge and awareness, and equips them with the skills to actively engage in social change efforts (Pandey 2020). Despite this, there remains a gap in exploring the relationship between one's education level obtained and their tendency to claim to, or

*Code and data are available at: https://github.com/jueunkang12/environment_education

actually exhibit, environmentally responsible behaviour (Agency, n.d.). Thus, the estimand that we intend to investigate is the relationship between the level of education obtained and the attitude-behaviour gap regarding environmental protection.

This paper finds that the most number of respondents have high school as their highest education level, and that the most number of respondents state that they are fairly willing to pay higher prices to protect the environment in the GSS interview. However, by comparing the willingness to the actual donation behaviour of respondents in the past five years, across varying levels of education, we find that the highest mismatch is of respondents with a highschool education as their highest obtained degree. This study is important as it provides implications for the implementation of environmental education; our findings can assist in identifying education levels where the largest attitude-behaviour gap exists, allowing for more targeted approaches.

The remainder of this paper has four sections. In section 2, we explain the data source and methodologies used for data collection, data cleaning, variables used, potential biases and ethical issues. In section 3, we present a logistic regression model, estimating the relationship between a respondent's willingness to donate money, their education, and whether they actually donate money. In section 4, the final results and model is interpreted along with all findings regarding respondents' willingness and respondents' donation behaviour, in relation to their education level obtained. Finally, a discussion is carried out, providing the implications of this paper's findings, as well as the weaknesses and future steps of this investigation.

This paper uses R (R Core Team 2020) for data cleaning and analysis, R packages *tidyverse* (Wickham et al. 2019), *here* (Müller 2020), *dplyr* (Wickham et al. 2023), *labelled* (Larmarange 2022), and *ggplot* (Wickham 2016), to create the figures, and *haven* (Wickham, Miller, and Smith 2022) to read the dta files.

2 Data

2.1 Data Source and Methodology

The data used in this paper is obtained from the US General Social Survey (GSS), funded by the National Science Foundation and operated by the National Opinion Research Centre (NORC). In particular, this paper utilised data from the 2021 GSS Cross-section survey, which is available through the GSS website. The GSS has been providing nationally representative data of adults in the United States since 1972, employing a consistent sampling approach to ensure comparability of survey data overtime.

However, in response to the COVID-19 pandemic, the 2021 GSS implemented methodological adaptations for the safety of both respondents and interviewers. The survey utilised an address-based sampling push-to-web methodology, targeting adults aged 18 or older, residing in noninstitutional housing in the United States at the time of the interviews. Participants were selected using the last birthday method within each household, where 88.3 percent of respondents completed the survey through the web, while 11.7 percent of respondents completed it by phone interview. The fielding period was from December 1, 2020 to May 3, 2021, and the overall response rate for the 2021 cross-section data collection was 17.4 percent, with 4032 completed interviews from 27591 addresses.

2.2 Attributes

Talk about strengths and weaknesses of GSS.

2.3 Terminology

This paper uses an individual year dataset, summarising variables specific to 2021. Through data cleaning the following variables are kept: DEGREE, GRNPRICE, and GRNMONEY. For variable DEGREE, respondents of the 2021 GSS Cross-section survey, were asked to provide the highest degree obtained: ranging from 0-4, corresponding to less than high school, high school, associate/junior college, bachelors, and graduate, respectively. GRNPRICE refers to the level of willingness expressed by an individual to pay higher prices to protect the environment, with values ranging from 1 (very willing) to 5 (very unwilling). GRNMONEY refers to whether the participant has actually donated money to an environmental group in the past five years, with values 1 (yes) and 2 (no).

2.4 Data Visualisation

2.4.1 Respondents' Degree of Education by 2021

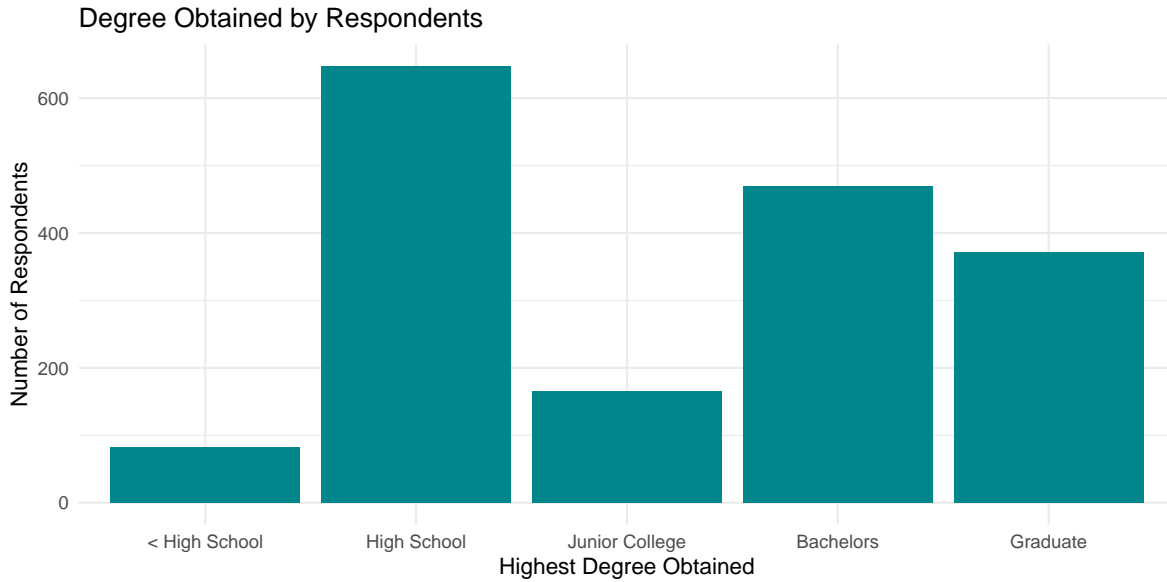


Figure 1: Highest Degree of Education Obtained by Respondents

Figure 1 shows the degree of education obtained by survey respondents, by 2021. We immediately notice that the most number of respondents, comprising over 600 individuals, have high school as their highest degree obtained. Next is a bachelor's degree with close to 500 respondents, followed by a graduate degree with close to 400 respondents. In comparison, the number of respondents with less than high school or junior college as their highest degree of education, remain relatively low with less than 100 and 200 respondents, respectively.

2.4.2 Respondents' Willingness to Pay for Environmental Protection

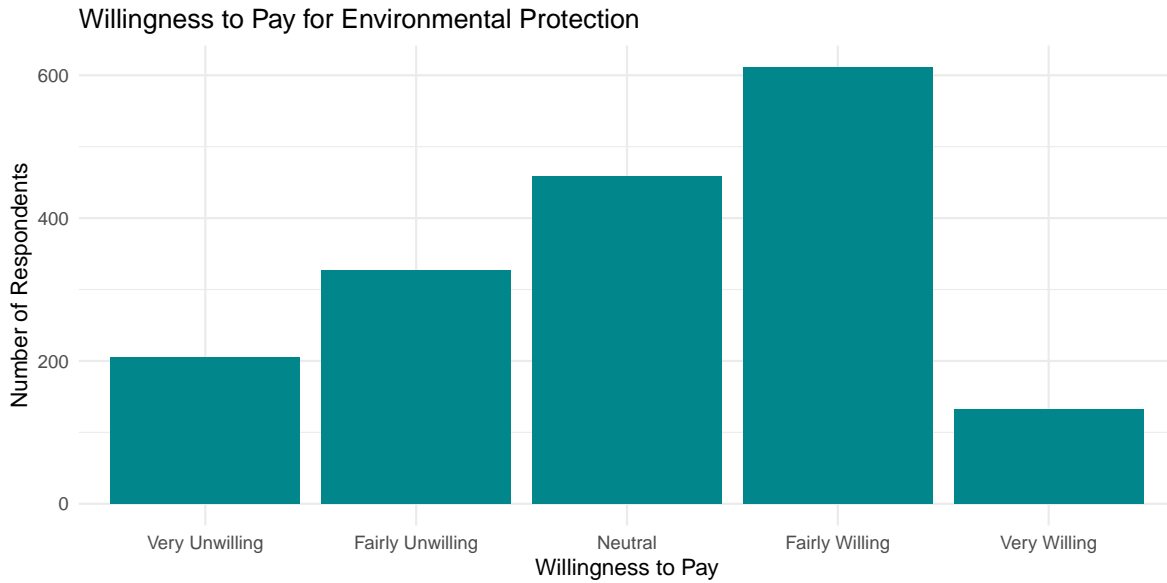


Figure 2: Respondents' willingness to pay to protect the environment

Figure 2 presents a trend where the number of respondents per level of willingness to pay for environmental protection, steadily increases from very unwilling to fairly willing, with the exception of very willing. The majority of respondents, comprising over 600 individuals, claim that they are fairly willing to pay higher prices to protect the environment. In contrast, the least number of respondents, of around 130 individuals, state that they are very willing to pay higher prices for environmental protection. This gap between respondents who are fairly willing versus very willing, may suggest the attitude-behaviour phenomenon, where individuals want to contribute towards environmental change, but do not follow through in action.

3 Model

The final logistic regression model is:

$$\begin{aligned}y_i|\pi_i &\sim \text{Bern}(\pi_i) \\ \text{logit}(\pi_i) &= \beta_0 + \beta_1 x_i + \beta_2 z_i \\ \beta_0 &\sim \text{Normal}(0, 2.5) \\ \beta_1 &\sim \text{Normal}(0, 2.5) \\ \beta_2 &\sim \text{Normal}(0, 2.5)\end{aligned}$$

The output of this logistic model estimates the relationship between a respondent's willingness to pay higher prices to protect the environment, their education level obtained, and whether they have actually donated money to an environmental group in the past five years.

In the model:

- y_i is a binary variable indicating whether the individual donated (1 if the individual donated, and 0 if they did not).
- x_i is a categorical variable indicating the individual's willingness to pay for environmental protection. The observations include very willing, fairly willing, neutral, fairly unwilling, and very unwilling.
- z_i is a categorical variable indicating the individual's highest level of education obtained by 2021. Observations include less than high school, high school, junior college, bachelors, and graduate.
- π_i is the probability that observation i donated.

3.1 Model Justifications

Talk about categorical variables.

Two paragraphs for each categorical variable.

Why did you build this model!

4 Results

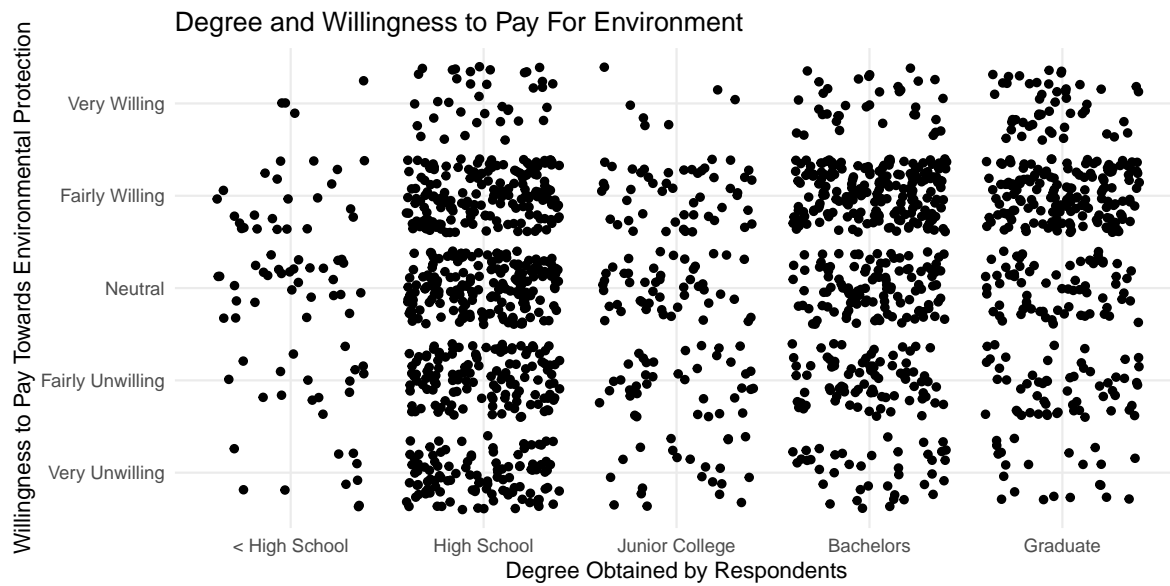


Figure 3: Respondents' degree and willingness to pay to protect the environment

Figure 3 talks about.

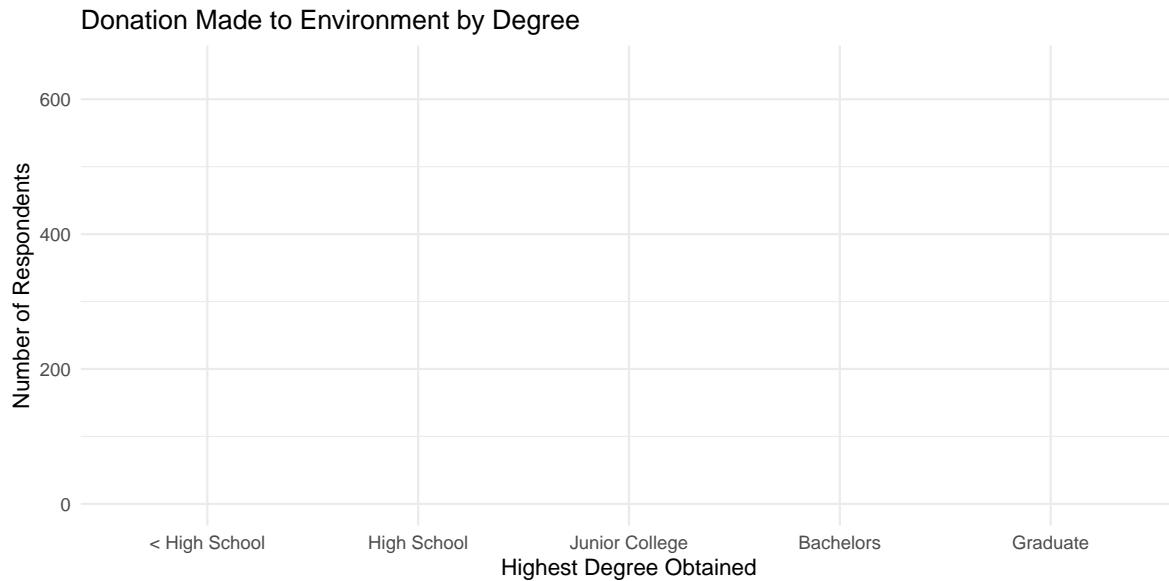


Figure 4: Respondents' degree and donation made for environmental protection

Figure 4 talks about.

5 Discussion

My discussion here. Model, data, results :) everything.

5.1 First discussion point

If my paper were 10 pages, then should be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

Appendix

A Additional details

References

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