

Government Spending perceptions and Support: Evidence from Higher Education Appropriations

Preamalysis Plan

Reuben Hurst, Michael Ricks and Andrew Simon

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1. Overview

We conduct a randomized survey experiment to understand how beliefs about the public provision of higher education affect support for state spending. This is a follow-up from “Do Perceptions of Public Good Quality Affect Support? Evidence from Higher Education Appropriations.”

Building on our previous experiment, we randomize participants into one of three groups: (G only) receive information about the state’s graduation rate and its rank, (S only) receive information about the average government spending per student at public colleges and its rank, and (Both S and G) receive information about both graduation rates and government spending.

2. Survey and Sample

Survey respondents will be a representative sample of US adults recruited through CloudResearch. We will recruit about 3000 individuals in May 2022. Upon beginning the survey, each participant will be randomized independently into one of three groups:

1. G only: Gives the six-year graduation rate for public four-year colleges and universities in the respondent’s state and its rank relative to other states..
2. S only: Gives the appropriations per student at public four-year colleges and universities in the respondent’s state and its rank relative to other states.
3. Both S and G: Gives the information from both G only and S only.

We first elicit subjects' priors regarding the levels and ranks (relative to other US states) of the following variables: six-year graduation rate at public four-year colleges and universities in the US (rate only); six-year graduation rate at public four-year colleges and universities in their state (rate and rank); and the average number of tax dollars spent per student to fund public four-year colleges and universities in their state. After eliciting these priors, participants receive their respective information treatments.

The next section of the survey includes questions measuring key outcomes and mechanisms. Specifically, respondents answer the following questions:

- **Outcome 1: Ideal Spending Level.** How much do you think [subject's state] should spend per student each year at public four-year colleges (in \$1000s)?

- **Mechanism 1: Beliefs about Marginal Spending.**

Imagine [subject's state] state spent an additional \$100 per student per year at public colleges. As a result of this additional spending...

- how much would you expect enrollment at public four-year colleges to increase (in percent)? A negative number indicates fewer students would enroll.
- how much would you expect the graduation rate for four-year colleges to increase (in percent)? A negative number indicates a lower proportion of students would graduate.

- **Mechanism 2: Beliefs about Marginal Costs to Taxpayers.**

Now instead imagine [subject's state] collected an additional \$1 in tax revenue each year from every resident in the state to spend on public four-year colleges in [subject's state]. To what extent do you agree with the following statements regarding this change? (5 point Likert scale)

- The average person in [subject's state] would be better off
- I personally would be better off
- New graduates from public four-year colleges would have better careers

- **Supplemental Outcomes:** 5 point Likert scale

- I trust that public four year colleges in [subject's state] use taxpayer dollars well
- Subject's state should shift the cost of public higher education from taxpayers to students by charging higher tuition

- The federal government should increase financial support for public four-year colleges

- **Behavioral Outcome 1a:** Share their preferences regarding spending on public education with state officials:

Thank you for sharing your opinions regarding state spending on public four-year colleges in [subject's state]. We'd now like to give you a chance to share those thoughts with your elected officials. We will compile any comments you make in a report for [subject's state] state officials. If you wish to make any comments, please provide them here:

[Text box for subject's response]

Recipient options

- Governor
- Senate Democrat Leader
- Senate Republican Leader
- House Democrat Leader
- House Republican Leader
- I do not wish to make any comments

- **Behavioral Outcome 1b:** Share their preferences with pre-specified options:

We will additionally allow respondents to add the following sentences to their message, or send the following sentences as a message if they did not previously write one:

I believe [State] should (select one):

1. increase its spending on public higher education
2. decrease its spending on public higher education
3. not change its spending on public higher education
4. I would not like to send any of these statements

because ... (select all that apply):

- it is important for [State] to be a leader on higher education
- it is not important for [State] to be a leader on higher education

State's spending on higher education generally strengthens the economy

State 's spending on higher education generally goes to waste

State is responsible for providing college education to students

State is not responsible for providing college education to students

- **Behavioral Outcome 2:** Donation to public higher education

We'd also like to give you a chance to directly support public higher education in [state]. As part of this survey, you can donate up to \$0.25 to higher education in [subject's state], keeping any money you do not donate as a bonus payment (for example, you could choose to donate \$0.10 and keep \$0.15). In the first box below, please type the name of the public university in Arizona that you would like to make a donation to.

- Amount

- College name

We then survey individuals to learn basic demographic information such as age, gender, race, educational attainment, political affiliation, and whether they or their children participated in the state's four year college system.

Next, we ask two open ended questions:

- Before we finish, we're interested in how you think about state spending on higher education. When you said that [State] should spend \$[X] per student annually on public higher education, what were the main considerations that came to your mind?
- What do you think the graduation rate and its rank relative to other states says about public higher education in [State]?

Finally, at the end of the survey, we will test how participants update when given information.

- For participants in condition 1: we will remind them of the graduation rate and rank information, and then ask for their posteriors on the spending level and rank.
- For participants in condition 2: we will remind them of the spending level and rank information, and then ask for their posteriors on the graduation rate and its rank.

3. Variables and Coding

The following is a list of variables we will create and coding decisions:

- Priors: continuous variable measuring `prior - truth` and indicators for whether the error is greater than or less than zero.
- Main outcomes: preferred spending per student; whether donated to a public college; whether wrote a message to elected official; whether wrote a message to an elected official of the opposite party; whether wrote a message to elected official indicating a preference for more spending on public higher education
- Likert questions: generate indicator for whether agree or strongly agree.
- Demographics will be converted into binary variables:
 - Republican = lean republican, not very strong republican, lean republican.
 - Family ties = generate indicator for subject or child has previously attend, is currently attending, or child will likely attend a public four-year college in state.

4. Hypotheses and Estimating Equations

We estimate the following regression equations to answer our research questions. For hypothesis tests of this main regressions, we will report EHW robust standard errors.

4.1 The Effect of Information on Preferences for Public Expenditure

We will first estimate a Poisson regression to measure the effects of our treatments on preferred spending, controlling for demographics.

$$\mathbb{E}(\text{Preferred Spending Level}_i) = \exp(\tau_0 + \tau_1 D_{1i} + \tau_2 D_{2i} + X_i \tau_3)$$

We will also estimate heterogeneous treatment effects along:

- Prior beliefs:
 - Sign of graduation rate and rank errors: create 4 bins based on the sign of the bias, e.g. prior grad rate - true grad rate < 0 & prior grad rank - true grad rank > 0.

- Sign of spending level and rank errors: create 4 bins based on the sign of the bias, e.g. prior spending level - true spending level < 0 & prior spending rank - true spending rank > 0.

- Demographics:

- Political affiliation (Republican vs Independent and Democrat)
- Elderly (65 and older)
- Family ties to the public college system (respondent or child attended).

Effects on additional measures of support and preferences We will estimate treatment effects on indicators for agree or strongly agree (linear probability model) and beliefs about marginal spending (OLS).

Effects on political engagement

We will conduct three exercises:

- We will estimate treatment effects on whether the respondent wrote their own message; whether the respondent wrote a message to someone of her own or other party (among partisans); the sentiment score (Syuzhet); and the length of the message.
- We will also estimate the treatment effects of sending a pre-specified option as a message.
- We will additionally estimate the likelihood of writing and sending a message by prior beliefs (B) and state policies (S) separately by treatment (D):

$$\mathbb{P}(\text{Sent Message}_i = 1 | D_i = d, B_i, S_i, X_i) = B\alpha + S\gamma + X\beta$$

We will re-estimate the above specification for a positive or negative message based on the Syuzhet score.

Effects on donations to public colleges Estimate the treatment effects on whether the respondent donated to a public college in her state in a linear probability model.

5. Descriptive Results

In addition to our research questions, we also want to measure taxpayer knowledge about public investment in higher education.

- **What beliefs do people hold?** Describe the relationship between individual beliefs over the truth for graduation rates, graduation ranks, spending levels, and spending rank.
- **What are baseline preferences?** Show the expected outcomes in the control group for ideal spending, mechanisms, and supplemental outcomes.