How Do Different Sources of Policy Analysis Affect Policy Preferences? Experimental Evidence from the United States

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Abstract

Analysis of policy options is often unavailable or only available from non-governmental research organizations ("think tanks") that may have explicit or implicit political biases. This paper experimentally examines how voters respond to policy analysis and how the response varies when the analysis is produced by a nonpartisan organization versus a liberal or conservative organization. The key result is that individuals, on average, are responsive to all types of analysis, but most strongly responsive to analysis produced by nonpartisan organizations. Analysis from an ideologically-slanted organization is less effective because individuals tend to ignore analysis that is produced by a partisan organization that does not share their own ideology. The results suggest that increasing the amount of information that the public receives based on nonpartisan analysis may increase the diffusion of information on policy features into the public and reduce polarization in public opinion.

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1 Introduction

Desirable policy outcomes in democratic societies depend critically on well-informed voters (Becker, 1958; Downs, 1957; and Black, 1948). Despite the importance of an informed voting population, most voters are not well-informed and have a tendency to favor poor policy options (Caplan, 2007).[1] While there are many reasons why voters are not well-informed, one of the reasons is that there are substantial limitations in the information available to voters on policies endorsed by candidates or placed on referenda during election cycles.

One of the ways in which information is limited is that careful evaluations of policy options often do not exist. For example, a major source of debate during the 2016 U.S. presidential election cycle related to immigration policy was whether a wall should be built along the southern border of the United States. A point of contention in this debate was how much the wall would cost to construct, but rigorous evaluations of the cost of the wall were not available. Reflecting the lack of credible evaluations, a *Washington Post* article that examined the costs of constructing the wall concluded that it was difficult to obtain "even a rough estimate of the total cost (Kessler, 2016)."[2] In addition to the lack of a pre-election analysis of costs, there were also no thorough analyses of the projected effect of the wall on other outcomes, such as rates of illegal immigration.

A second way in which information is limited is that even when thorough analyses exist, the evaluations are often produced by think tanks that aim to support either liberal or conservative agendas, such as the Center for American Progress or the Heritage Foundation. Voters may not respond to information produced by these organizations because they fear they are biased.[3] Difficulties in ascertaining whether evaluations are credible appear to have contributed to challenges in communicating objective information to voters. For example, less than half of registered voters trust fact-checking reports compiled by media outlets (Rasmussen Reports, 2016). Fact-checking is often conducted by comparing candidate statements

[1] Caplan (2007) focuses on four systemic biases in public opinion: antimarket bias, antiforeign bias, make-work bias, and pessimistic bias.

[2] An internal report later prepared after the election by the Department of Homeland Security concluded that the wall would cost $21.6 billion, not including maintenance (Ainsley, 2017).

[3] Even for centrist think tanks, fears about bias may not be unfounded. Recent reports in major newspapers, including the *New York Times* and *Boston Globe*, have highlighted the widespread role that funding sources have played in biasing the analyses of think tanks (Lipton and Williams, 2016; Bender, 2013).

to research reports from think tanks. While some of the public's distrust may be related to distrust in the media itself, it is likely exacerbated by the fact that the underlying research is produced by think tanks that the public has little familiarity with and may view as biased.

Limitations in the availability of unbiased policy analysis may have a substantial effect on election outcomes because studies have generally found that information matters to voters.[4] Shortcomings in the availability of analyses likely also affect the type of information that is conveyed through the media. In a theoretical model of media bias, Gentzkow and Shapiro (2006) show that bias emerges in media markets because firms slant their reports in order to build a reputation for quality and that this bias is harmful to all market participants.

Despite the potentially important role that the availability of policy analysis plays in election outcomes, little research has examined how voters respond to policy analysis and how they respond differently depending on the source of the analysis. This paper begins to fill this gap. I address two related questions. First, how effective is policy analysis at influencing voter preferences? Second, how much does the effectiveness of policy analysis depend on whether the organization producing the research is nonpartisan as opposed to aligned with a liberal or conservative political ideology? The specific design of the study, which I describe in more detail in Section 3, involved an experimental survey administered through Amazon's Mechanical Turk (mTurk). Subjects were asked to choose between two policy options in several different areas of public policy. For all treatment individuals, the subjects were also told that research indicated one of the options was more cost-effective. A control group received no information on cost-effectiveness. The organization that produced the research on cost-effectiveness was randomly varied to be either a conservative, nonpartisan, or liberal organization.

There are four key findings from the experiment. First, voters are responsive to policy analysis. All treatments increased the probability that the respondent chose the more cost-effective policy option. Second, policy analysis is most effective at changing public opinion when it is produced by a nonpartisan organization. Relative to a baseline level of 43%, research produced by the nonpartisan organization increased support by 12 percentage points.

[4] I describe the empirical literature on how voters respond to information in more detail in the next section.

Research produced by the liberal or the conservative organization only increased support levels by 6 percentage points and 4 percentage points, respectively. Third, individuals tend to respond to research from partisan organizations if their ideology matches the ideology of the organization and ignore policy analysis otherwise. This result indicates that biased research produced by partisan think tanks can contribute to political polarization because it predominantly reinforces preferences that are already left or right of center. Fourth, the overall responsiveness to policy analysis and the increased relative effectiveness of nonpartisan analysis, was largest for moderate voters, who are most likely to be pivotal in elections. All findings held consistently across a variety of areas of policy, including environmental, health, housing, development, and labor.

It is worth acknowledging that the experiment has several limitations, including: 1) the experimental exercise is based on stated as opposed to revealed preferences; 2) individuals were asked to make choices about public policy immediately after being given information directly related to public policy, which is not how voting decisions are typically made; 3) the experiment was implemented in the mTurk population, which may not generalize to the voting population, as I discuss further in Section 3.2; and 4) the survey population was limited to U.S. residents and therefore reflects opinions formed within the largely two-party U.S. political system and its unique tradition of think tanks and policy analysis. Despite its limitations, the experiment provides a tractable setting in which to investigate how individuals respond to policy analysis and whether they care about the type of organization the conducts the analysis. I discuss some of the ways in which future research might address the limitations of the current experiment in the conclusion of the paper.

2 Conceptual Framework and Testable Hypotheses

This study is an examination of how policy analysis affects voters, which is an issue that connects to multiple disciplines. The policy sciences field has developed a robust literature focusing on how policy analysis is generated through "policy advisory systems" that inform the policy-making process. The economics and political science literatures, in contrast, have focused primarily on evaluating how voters respond to various types of information. This section highlights key concepts and findings from these literatures and then develops testable

hypotheses that will be evaluated experimentally.

2.1 Policy Advisory Systems

Studies of "policy advisory systems" have produced theoretical and empirical analyses of the multiple sources of policy advice utilized by governments in the policy-making process, such as governmental analysts, think tanks, lobbyists, political advisors, and scientific, technical, and legal experts (Halligan, 1995).[5] Howlett and Wellstead (2009) describe policy advisory systems as part of a knowledge utilization system in government that represents a market for policy ideas and information. There are three components to the system: 1) knowledge producers, such as members of research institutes or academia, that provide data upon which analyses are based and decisions are made; 2) knowledge brokers, such as specialized research staff, who serve as intermediaries who repackage data into usable form; and 3) knowledge users, such as parliaments, legislatures, and congresses, who consume policy analysis and advice and have authority to make policy decisions.

Policy advisors generally operate in the sphere of knowledge supply and brokerage. Howlett and Wellstead (2009) classify four communities of policy advisors including core actors (central agencies, executive staff, professional governmental policy analysts), peripheral actors (commissions and committees, task forces, research councils/scientists), private sector insiders (consultants, political party staff, pollsters), and outsiders (public interest groups, business associations, trade unions, academics, think tanks, media). Most actors in the policy advisory system are primarily focused on providing information and advice to governments. Information provided by policy advisory systems can be focused on partisan political considerations, on more technical administrative issues, or on a combination of these two factors (Craft and Howlett, 2012).

As described in Craft and Howlett (2013), the literature on policy advisory systems has focused recently on the importance of "externalization" (i.e. the role of non-governmental external advisory systems, such as think tanks) and "politicization" (i.e. the role of partisan political advice within the government).[6] The present research indirectly relates to these

[5]See Craft and Halligan (2017) for a recent overview of the leading approaches to studying advisory systems.

[6]Craft and Howlett (2012) and Howlett and Wellstead (2009) also highlight the importance of considering

two issues because it sheds light on the role that partisan think tanks play in affecting how voters respond to information and also examines how the response of voters varies depending on whether policy analysis is produced by a partisan or nonpartisan organization.

Advisory systems are firstly aimed at advising policy-makers rather than informing or persuading citizens, but information produced or disseminated through advisory systems can either indirectly or directly influence voters. As described above, voters routinely receive information either directly or indirectly from actors within policy advisory systems, especially research organizations. For example, advertisements from political campaigns frequently cite reports or studies from think tanks or government research agencies that support their positions. Similarly, the media often highlight studies produced by think tanks or research agencies and such studies are often referenced in fact-checking compiled by the media that follow major political events, such as presidential debates. Research produced through think tanks is especially likely to influence the public because, unlike government research institutes, many think tanks actively target audiences beyond the policy process including the media (Kelstrup, 2017).

The primary contribution of this paper to the policy advisory systems literature is that it considers how policy advisory systems influence the general public. As I described at the end of Section 1, there are variety of limitations with respect to how much one can infer about this relationship between policy advisory systems and voters from this single study. Nonetheless, the study is helpful for informing how policy advisory systems in general and research organizations in particular influence voters. Understanding the influence of research organizations is increasingly important in a "world filled with post-factual inputs and influences (Perl et al., 2018)."

2.2 Economics and Political Science

The interplay between information and voter preferences has been examined by political scientists and economists in many settings. Studies on information and voting in the economics literature have mostly fallen under the umbrella of the "persuasion" literature. In political science, research on information provision and voter preferences has been connected

non-governmental components of policy advisory systems, such as think tanks and research institutes.

to the "preference change" and "framing" literatures. These literatures complement large literatures that have examined how internal individual characteristics, such as demographic traits or personal beliefs, affect voting (e.g., Settle and Abrams, 1976; Kahn, 1997) and how individual or social circumstances affect voting (e.g., Avdeenko, 2018).

The economics literature on persuasion and voter preferences has largely examined the effect of the media on voter actions, focusing especially on the role of media bias.[7] Chiang and Knight (2011) examine how newspapers endorsements of political candidates affects voters and how the effect varies depending on whether the newspaper has a left or right leaning bias. They find that endorsements increase support for endorsed candidates and that endorsements have a stronger effect when coming from a newspaper that has a bias that is opposite of that of the endorsed candidate. Similarly, to the present paper, they find that the effect of information is strongest among moderate voters. Gerber et al. (2009) also study the effect of media slant on voting patterns, in their case an experimental study of newspaper readership, and find that receiving a subscription to either a liberal or conservative newspaper tended to increase Democratic vote share. DellaVigna and Kaplan (2007) show that Republican vote share increases when Fox News, which is a well-known conservative news network, is introduced into a cable market.[8] The general implication from these studies is that voters respond to changes in their informational environment when brought about through a change in the media market.

Other papers in the economics literature have examined how information conveyed in ways not directly related to the media affect political outcomes. Ferraz and Finan (2008) examine how disclosures of federal audits investigating corruption in municipalities of Brazil affected election outcomes. They find that the disclosure of the audits affected incumbent performances in subsequent elections. Kuziemko et al. (2015) use mTurk to present experimental subjects with information on inequality. They find that preferences for policies related to redistribution are responsive information on inequality, though the response is small for

[7] See DellaVigna and Gentzkow (2010) for a review of the persuasion literature. See Islam (2008) for a review of media markets and policy making.

[8] A number of studies have looked at voter turnout, as opposed to party share. Gentzkow (2006) and Campante and Hojman (2013) provide evidence that increases in access to television decrease voter turnout, whereas radio increases voter turnout. Gentzkow et al. (2011) provide evidence that the introduction of a local newspapers increases turnout.

all redistribution policies considered except for the estate tax. Hopland (2014) examines how information on fiscal performance influences the election of incumbents in Norway. He finds evidence that a local government being listed on a registry that records poor fiscal performance reduces the share of votes cast for the incumbent's party and the probability that the incumbent stays in office. Thompson and Whitley (2017) present evidence that state financial intervention systems that make financial problems more salient to residents are associated with changes in election outcomes. Repetto (2018) examines the effect of an Italian reform that increased the availability of pre-election information on municipality spending. He finds that the reform reduced manipulative spending during election years by incumbent officials.[9]

Druckman and Lupia (2016) provide a review of the political science literature on how information affects voter preferences, which has focused on how information processing by voters depends on cues (e.g., party labels), values (e.g., free speech), value-framing (i.e. attempts to persuade voters to place a stronger weight on certain values), and identities (e.g., race, gender). I outline two particularly relevant papers here. The first, Kuklinski et al. (2000), is notable because it is one of the seminal articles in the political science literature on voter response to information and because it demonstrates that voters are not always responsive to information, as has been the case with all of the studies that have been discussed thus far. Kuklinski et al. (2000) show that individuals are misinformed regarding the characteristics of welfare programs in the U.S. and that providing individuals with correct information has no effect on their preference for welfare programs. The second paper to highlight, Chong and Druckman (2007), is perhaps the most closely related study in the political science literature to the present study. Chong and Druckman (2007) show that individuals respond more strongly to information described as coming from a major newspaper than information described as coming from a high school newspaper. The results are consistent with the notion that individuals are more responsive to information coming from more credible informational sources.

[9]One of the key features of Hopland (2014), Thompson and Whitley (2017), and Repetto (2018) is that they focus specifically on measures designed to convey information (e.g. registries, labels). Earlier literature shows evidence that spending is associated with election outcomes. For example, Sakurai and Menezes-Filho (2008) present evidence that higher capital spending in the years preceding elections and current expenditures in election years are beneficial to incumbent Brazilian mayors.

Two recent books in the political science literature are also closely related to the present study. Klar and Krupinov (2016) show that many Americans increasingly have a distaste for strong partisans and prefer to view themselves as independent non-partisans. Arceneux and Johnson (2013) examine how partisan news affects public opinion and present evidence that the increasing availability of varieties of cable news channels has dampened the influence of the media environment on voters.

2.3 Testable Hypotheses

Based on the concepts and findings above, I develop three testable hypotheses that I examine using the experimental data. First, based on the broad responsiveness of voters to various types of information (e.g., Kuziemko et al., 2015; Kuklinksi et al. 2000; DellaVigna and Kaplan, 2007), I generate the following hypothesis:

Hypothesis 1 (H3): *The provision of policy analysis influences voter preferences.*

Secondly, based on the distaste of the public for partisan information (e.g., Klar and Krupinov, 2016) and the increased responsiveness of individuals to more credible sources (e.g, Chong and Druckman, 2007), I hypothesize that:

Hypothesis 2 (H3): *In aggregate, voters are more responsive to policy analysis produced by nonpartisan research organizations than partisan research organizations.*

Thirdly, because party cues are effective at influencing voters' preferences for candidates (Druckman and Lupia, 2016) and are therefore also likely to influence their preferences for research organizations, I hypothesize that:

Hypothesis 3 (H3): *Voters are more responsive to partisan research organizations that share their personal ideology than partisan research organizations that do not share their ideology.*

I conduct an experiment to test the hypotheses outlined above. The general setup of the experiment is to randomly expose treated subjects to information on cost-effectiveness for different policy options and see how their policy preferences respond depending on whether

the research organization was nonpartisan, conservative, or liberal. Cost-effectiveness was chosen as the criteria by which to compare policy options (e.g., a carbon tax vs. a biofuel standard) because it is a metric that most individuals likely view as an important policy trait. Cost-effectiveness is also a metric that can be applied to most policy options across a wide array of policy areas. Focusing the experiment on cost-effectiveness is helpful for the experimental setup, but it of course abstracts from the reality that policy are often weighed and chosen based on many different factors. I revisit the issue of limitations in the experimental design in Section 6. In the next section, I describe the experimental design and data collection in detail.

3 Experimental Design and Data Collection

3.1 Experimental Design

The key features of the experimental design are presented in Table 1. Precise survey language can be found in the Appendix.

Participants in the experiment first provided background information on their demographic, economic, and political traits (e.g., year of birth, political affiliation). Subjects were then informed that they would be presented with information on various policies. All "treatment" individuals were also told that some of the information would be about the cost-effectiveness of two policy options.[10] All treatment individuals were randomly told that the research on cost-effectiveness was produced by one of three sources: a conservative organization, a liberal organization, or a nonpartisan organization.[11] Next, all participants were presented with information on five different policy options in the areas of environment, health, housing, development, and labor.

For the sake of exposition, I will first describe the way that policy options were presented

[10] A definition of cost-effectiveness was also provided for all treatment individuals. The definition was as follows, "Cost-effectiveness is a measure of the expenditures required to achieve a certain outcome. As a general example, consider two options: 'A' and 'B'. If A is more cost effective than B, then A can be used to achieve a similar result as B at a lower overall cost."

[11] Respondents in the conservative treatment group were informed that conservative organizations are "Republican-leaning," respondents in the liberal treatment group were informed that liberal organizations are "Democrat-leaning," and respondents in the nonpartisan treatment group were informed that that nonpartisan organizations are "politically neutral, they are not aligned with a politically party."

to participants in the context of environmental policy. Participants were told that lowering carbon emissions has often been considered a public policy priority and that there are a variety of options that could be used to lower emissions. Two options were then briefly described: a carbon tax and biofuel standard. Next, participants were told that the carbon tax would be a more cost-effective policy according to research produced by either a liberal, conservative, or nonpartisan organization depending on the treatment group to which the individual was assigned. Participants in the control group received no information on cost effectiveness. Participants were then asked which policy option they prefer.

The survey was designed analogously for the other policy areas. The specific policy options that were presented in each case were aligned with the general topic area. In particular, the choices for health policy, housing policy, development policy, and labor policy, respectively, were as follows: health insurance tax credits vs. government-provided insurance, housing vouchers vs. public housing, earned income tax credit vs. minimum wage, and cash transfers vs. traditional aid programs (in-kind assistance, supply-side policies). In each of the comparisons above, the first option listed is a market-based policy while the second is not. The market-based policies were always described as more cost-effective in the surveys. The rationale for this structure is that economists tend to believe that market-based policies are more efficient (Whaples, 2009; Whaples, 2006).[12,13]

Two additional features of the experimental design were attention checks and randomized ordering. Attention checks were administered at several points throughout the survey. These attention checks were meant to confirm that respondents carefully completed the survey. There were six different attention checks. First, individuals were asked which type of organization (liberal, conservative, or nonpartisan) conducted the cost-effectiveness research

[12]With respect to the experimental variation in the type of organization that produced the cost-effectiveness research, individuals are assigned to a treatment group at the outset that is held constant across policy questions. That is, across policy questions, the research on cost-effectiveness is always produced by the same type of organization within each individual survey.

[13]The key feature of the experimental design is to examine how random variation in the type of research organization affects the way individuals respond. The policy that is designated as more cost-effective is held constant across all surveys to isolate the effect of this treatment. Because the information on cost-effectiveness is not based on any specific analysis, participants were informed that the information on cost-effectiveness presented during the survey was non-factual (i.e. neither correct nor incorrect) on a debriefing page at the end of the survey. The design of the experiment was approved by the University of Oregon's institutional review board.

that would be presented. Secondly, after the two policy options were described for each of the five policy areas, participants were presented with three different policy options and asked to identify which one was not described. Randomized ordering was embedded in most parts of the survey. In particular, the order in which the policy issues were presented was randomized (e.g., environment did not always come first). For response questions, the order of the policy options was always randomized (i.e. the market-based policy option was not always presented as the first option).

3.2 Data Collection and Descriptive Statistics

The experiment was implemented using randomized surveys administered through Amazon's Mechanical Turk. MTurk is a crowdsourcing platform. Requesters post "human intelligence tasks (HITs)," which are then completed by workers for piece-rate payments.[14] In the context of experimental surveys conducted on mTurk, each survey represents a HIT.[15,16] MTurk has recently become a popular platform for social experiments (see Horton et al. (2011) for a discussion of using mTurk for economic experiments). The primary appeal of using mTurk is that the costs per subject are substantially lower than other platforms. While uncertainty remains regarding the extent to which results from mTurk can be generalized to the broader population, there is growing evidence that the results from studies performed on mTurk are similar to the results obtained in conventional laboratory or field settings (Horton et al., 2011; Amir et al., 2012; Goodman et al., 2013).

Experiments were run in batches over a two-week period in February 2017. Subjects were required to be located in the United States. Each mTurk worker was only allowed to complete the survey once.[17] In order to obtain high quality subjects, subjects were typically

[14]The four most common mTurk requests are collecting information from pictures (37%), transcription (26%), content classification or matching (13%), and surveys (13%) (Hitlin, 2016).

[15]In the present study, mTurk workers were re-directed to an external Qualtrics survey instead of taking the survey directly on mTurk. To ensure that workers who accepted the HIT completed the survey, workers were required to submit a code to mTurk that was issued after completing the Qualtrics survey. The code was randomly generated after each completed survey and stored in the Qualtrics database. The Qualtrics codes and the codes entered in mTurk could then be compared to ensure that workers clicking on the HIT completed the survey.

[16]In addition to being used for experimental surveys, mTurk has also been used for real effort experiments and other types of labor experiments (e.g., DellaVigna and Pope, 2017) and for coding non-numerical content, such as newspaper transcripts (e.g., Schroeder and Stone, 2015).

[17]Workers were limited to one survey by installing the "Unique Turker" script, which is available from

required to have an approval rate above 95% for previously completed HITs and to have completed at least 100 prior HITs.[18] Experiments were usually initiated before 10am PST and completed within two hours. The mTurk population tends to have a smaller proportion of individuals with a conservative ideology than the U.S. population (Lefgren et al., 2016). In order to achieve a sample with a more balanced distribution of political ideologies, two batches were sometimes run contemporaneously, with one of the batches restricted to workers with a conservative political ideology. Subjects were paid $1.75 to take the survey. Tasks were completed in about 9 minutes on average. In total, 1,443 surveys were successfully completed.

One concern with experimental surveys, including those completed on mTurk, is whether subjects carefully complete the survey. To address this issue, the care in which individuals completed the survey was assessed in two ways. First, as mentioned earlier, attention checks were administered throughout the survey to ensure that subjects were carefully reading the survey prompts. The results of these attention checks were encouraging. Subjects correctly answered the attention check questions between 96% and 98% of the time depending on the attention check.[19] Secondly, political responses were examined for consistency. In particular, the preferences of individuals for presidential candidates was compared to their stated political ideology. If respondents were carelessly completing the survey, there might be little correlation between an individual's stated ideology and their preferred candidate. The data reveal the opposite. Mean support for Trump, for example, was 77%, 35%, and 3% across conservatives, moderates, and liberals, respectively.[20]

Summary statistics are reported in Table 2 for the full sample as well as by an individual's political ideology. With respect to policy preferences, about half of the sample supported the market-based option for environmental policy, health policy, and labor policy. There was stronger support for market-based housing policies, perhaps due to the well-documented problems with public housing (Schill, 1993). In the area of development, there was less

www.uniqueturker.myleott.com.

[18]Some early batches were restricted to mTurk workers with the "master" qualification, but this limitation significantly slowed the time in which batches were completed.

[19]In order to completely preserve the randomization of the treatment, no observations were dropped based on the responses given to the attention checks; however, results are robust to excluding these observations.

[20]The variable recording preference for presidential candidates in the 2016 election was only used for evaluating the credibility of the political ideology responses. It is not used elsewhere in the analysis.

support for cash transfers than for traditional aid programs. Across ideologies, conservatives tended to be more likely to choose the market-based policy option, especially in the case of labor policy and health policy. The divide on health policy may be connected to the strong debate about health policy that has taken place in recent years and the polarization related to the Affordable Care Act.

With respect to individual characteristics, about 38 percent of the sample is liberal. The sample includes a nearly equal proportion of conservatives, which is by design, due to the sampling procedure described earlier. The remaining quarter of the sample has a moderate ideology. Most respondents are registered voters. About half are male, the typical age is thirty-seven, and four-tenths have children. Almost all were born in the United States. Four-fifths of the sample is white and about half have at least a bachelor's degree. Most have some type of employment. Income tends to fall between fifteen and fifty thousand dollars. Relative to liberals, conservatives in the sample are older, have higher rates of marriage, are more likely to have children, are more likely to be white, and have greater incomes.

In order to assess the extent to which the experimental population resembles the broader population, Table 3 reports the means from the sample to the means of the U.S. population based on the 2011-2015 5-year estimates from the American Community Survey. Comparable measures are not available for all variables reported in Table 2 and some categories of education and employment were aggregated for purposes of comparison. The mTurk sample has more men, is younger, is less likely to be married, is more likely to be native-born, is more likely to be white, tends to be more educated, and is more likely to be employed. Median income in the mTurk sample falls somewhere between $\$15k$ and $\$50k$, which includes the median worker income reported in the ACS, which is $\$31k$. Due to the socio-demographic differences between the mTurk sample and the U.S. population, it is unclear whether the results of the survey are representative of the broader population. A further concern in this regard is that the mTurk respondents are often survey specialists that regularly complete academic surveys and may have, as a result, developed habits that reduce the validity of their responses. On net, the mTurk sample provides a setting in which to initially examine the hypotheses outlined in Section 2, but the unique nature of the mTurk sample is a limitation of the empirical setting and future research conducted with different populations

will be helpful for assessing the extent to which the results are representative of the general population.

Two tables in the Appendix report statistics that help demonstrate that the experiment was administered correctly. Table A.1 reports means for each treatment variable and shows that each experimental group appeared at equal rates in the sample. Table A.2 tests for differences in covariates across treatment groups. The number of significant differences is equivalent to what would be expected based on random chance.

4 Analysis and Results

I analyze the results of the experiment using linear probability models of the following form,

$$\text{Outcome}_i = \alpha + T_i'\beta + X_i'\gamma + \epsilon_i, \tag{1}$$

where T_i is a vector of treatment variables, X_i is a vector of control variables, and ϵ_i is an error term. Linear probability models are chosen due to ease of interpretation, but results are similar for probit regression models. The vector of control variables includes gender, age, marital status, having children, U.S. born, registered voter, race, education, employment, and income. I also estimate models in which control variables are not included and the results are similar.[21] Responses were not required for some of the background questions, so estimates based on models that include covariates are limited to the 1,403 observations with complete data. White-corrected standard errors were computed for most models.[22]

I begin by analyzing the data in a pooled format in which each response to a policy choice question is a separate observation. Because there are five different policy questions, the pooled data has five-times more observations than the number of observations in the other sets of results. Figure 1 presents mean support levels for the more cost-effective policy option across experimental groups based on the pooled data. Absent any research on cost-effectiveness, respondents support the more cost-effective option 43% of the time.

[21] Results from probit models and models that exclude control variables are included in the Appendix.

[22] The only exception with respect to the computation of the standard errors was the pooled analysis, which is described further in the next paragraph. In the pooled analysis, standard errors are clustered by respondent.

When supplied with research on cost-effectiveness produced by a nonpartisan organization, support levels increase by 12 percentage points to 55%. When supplied with research on cost-effectiveness produced by an organization with a political bias, support for the more cost-effective policy option also increases, but by only 6 and 4 percentage points for the liberal and conservative organizations, respectively.

Table 4 reports results from regression models based on the pooled data. In these regressions, the dependent variable is a binary variable equaling one when the individual chose the more cost-effective option. All estimates in the table indicate the estimated effect of being in the corresponding treatment group relative to the control group that received no information on cost-effectiveness. The results that are reported in column 1, which use the full sample, mirror those presented in Figure 1. All treatments increase the probability that an individual supports the more cost-effective option, but the increase is statistically greatest for the nonpartisan research organization. There is not a statistically significant difference between the response to the conservative organization and the response to the liberal organization.[23]

In order to investigate how responses differ across an individual's political ideology, columns two through four in Table 4 report results from samples restricted to liberals, moderates, or conservatives. The key pattern is that individuals across all ideologies are responsive to research produced by the nonpartisan organization. Liberals respond to research produced by either the liberal or nonpartisan organization. Perhaps surprisingly, there is some evidence that the response of liberal individuals to the nonpartisan organization is stronger than their response to the liberal organization, but the difference is not quite significant ($p = .12$). Moderates respond to both the liberal and nonpartisan organizations, but significantly more strongly to the nonpartisan organization. Conservatives respond about equally to the conservative and nonpartisan organization. The general lessons from Figure 1 and Table 4 are that public opinion responds to policy analysis, especially when the research is produced by a nonpartisan organization and that research produced by partisan organizations is less effective at moving public opinion because it is ignored by individuals with the opposing political ideology.

[23]The coefficient on *Org.: Nonpartisan* is statistically significantly different than the coefficient on *Org.: Conservative*, as well as the coefficient on *Org.: Liberal*. The coefficients on *Org.: Liberal* and *Org.: Conservative* are not statistically distinguishable.

Table 5 provides estimates of how the treatment affected preferences in each area of policy. In each of these models, there is only one observation per survey respondent. As with the prior set of results, column one reports results for the full sample and columns two, three, and four report results for subsamples as determined by an individual's political ideology. While there is some variation across topics, the same general pattern depicted in Table 4 emerges in most policy areas. Research produced by the nonpartisan organization remains the most effective at swaying opinions, especially for moderate voters. The results are least pronounced for housing policy, which is the area where there is the most baseline support for the market-based option, as well as the least difference across ideologies in support for the market-based option. Collectively, the results in Table 5 indicate that the overall effectiveness of policy analysis and the relative advantage of producing policy analysis through nonpartisan organizations is consistent across a variety of areas of public policy.

To evaluate the robustness of the results to modeling assumptions, results that are analogous to the results from Table 4 except that they are either based on a probit model or omit control variables are reported in Tables A.3 and A.4. The results are very similar to those reported earlier. The other results in the paper are similarly qualitatively unaffected by modeling assumptions.

5 Policy Implications

The elevated responsiveness of voter preferences to nonpartisan policy analysis raises the question of whether public policies should be enacted that improve the informational environment facing voters by expanding the availability of nonpartisan analysis. For example, increased funding could be provided for research and public dissemination to existing nonpartisan research agencies, such as the Government Accountability Office or the Congressional Budget Office. Such policies might allow voters to more easily support policies that match their preferences and decrease political polarization. Political polarization has increased dramatically over the past several decades (Boxell et al., 2017; Sunstein, 2017) and been associated with governmental dysfunction (Persily, 2015). More broadly, neutral policy analysis represents a public good and therefore is unlikely to be provided at adequate levels absent government intervention. There are, however, also reasons why such policies might be

ill-advised or ineffective. For example, even nonpartisan research agencies may develop their own biases. Further, media markets may not communicate information from nonpartisan research agencies even if it were more readily available. Below, I expand on considerations related to public investment in nonpartisan policy analysis. The goal of this section is not to advocate for or against increased investment, but rather to highlight important factors that should be considered in such a debate.

With respect to consideration of whether investment in nonpartisan analysis and public dissemination should be increased, it is helpful to first characterize how policy analysis is presently provided. Current governmental efforts to inform the public through nonpartisan policy analysis are not unprecedented, but are small in scope. The Governmental Accountability Office (GAO), which is the primary nonpartisan government research agency, describes part of its mission as providing "nonpartisan, objective, and reliable information to Congress, federal agencies, and to the public (GAO, 2016)." However, the primary objective of the GAO is to serve Congress. The GAO has an annual budget of about $600 million. This figure is about one-seventh of one percent of the overall U.S. federal budget. The Congressional Budget Office (CBO) and Congressional Research Service (CRS) are also sources of nonpartisan policy analysis. The CBO has an annual budget of about $50 million and the CRS has a budget of about $100 million, collectively equal to about one-quarter that of the GAO. Elected officials have recently proposed to decrease the role of nonpartisan research agencies and the resources dedicated to them.[24] At the state level, referenda are often supported by pamphlets that describe the impact of the proposed measures, but these descriptions are typically limited in scope and focus on fiscal impacts.

While governmental efforts to provide policy analysis are modest, non-governmental sources of nonpartisan analysis are abundant, primarily through think tanks.[25] As of 2015, there were about 7,000 global think tanks and 2,000 think tanks in the United States (McGann, 2016) and these think tanks are often cited in the media and by policymakers (Grose-

[24]In July of 2017, Representative Morgan Griffith offered an amendment to an appropriations bill to cut the Congressional Budget Office's staff from 235 to 146 (Becker, 2017). In September of 2017, Senate Republicans proposed a budget that included language that eliminated a senate rule requiring a full Congressional Budget Office estimate of the cost of the legislation at least 28 hours before a vote budget that included eliminating a provision (Wasson, 2017).

[25]Academic researchers also undertake policy analysis and offer another channel for non-governmental analysis.

close and Milyo, 2006). However, think tanks may not be an adequate source of policy analysis because think tanks face incentives related to funding that likely limit their capacity to provide unbiased analysis. Due to the incentives for think tanks to provide biased reports, the public may have difficulty discerning whether information provided through think tanks can be considered credible and unbiased.[26] This paper is largely an investigation of whether concerns about bias matter. The main finding is that bias does matter, because perceptions of bias limit the extent to which the public responds to information.

While expanding investment in nonpartisan analysis may seem appealing in light of current funding levels for nonpartisan research agencies and the incentives for think tanks to produce biased research, there are arguments to be made against expanding government investment in nonpartisan analysis. A major concern is that government research agencies may become biased themselves or at least be perceived as biased. While government agencies do not face the financial conflict of interest facing think tanks, they may be subject to sources of bias due to political forces or agency capture. Further research that examines whether nonpartisan government agencies can be relied on to produce unbiased research and the ways in which they can be structured to support neutrality would be helpful in ascertaining the social benefits that they provide.

Even under the assumption that nonpartisan research agencies would remain unbiased and could be bolstered through additional funding, it is not obvious that information produced through these agencies would meaningfully filter into the public. In particular, the extent by which the availability of information from nonpartisan sources would affect the informational environment facing voters depends crucially on whether it would change the incentives for media sources to distort their coverage.[27] Gentzkow and Shapiro (2006) present a theoretical model that shows that increasing the availability of unslanted information can

[26]The difficulty that the public faces in evaluating information based on reports produced by think tanks is reflected in an article from National Public Radios' (NPR) Ombudsman/Public Editor that described readers as being disappointed that "NPR often does a lousy job of identifying the background of think tanks or other groups when quoting their experts (Shepherd, 2011)."

[27]The effect of nonpartisan analysis on mainstream media coverage is likely to be crucial in determining the effect of investment in nonpartisan policy analysis because information conveyed through the mainstream media can be obtained by voters with relatively low costs. Evidence suggests that voters are often hesitant to acquire costly information due to "rational ignorance" stemming from the low probability of a single vote determining an election outcome (Lopez de Leon and Rizzi, 2014; Downs, 1957).

limit the extent of bias in media markets. In practice, however, it is possible that slanted media sources would choose to ignore nonpartisan policy analysis even if more of it became available.

Ultimately, determining optimal public investment in nonpartisan analysis is a challenging task due to the complex web of actors involved in policy advisory systems and the multitude of factors involved in formulating policy. Many questions arise when considering the role of nonpartisan research agencies, both with respect to informing the public and informing the policy-making process. How much should nonpartisan agencies actively disseminate their research to public? Should nonpartisan agencies be working to more actively foster relationships with the media? How effective, in practice, is nonpartisan information provision at reducing polarization? Is further investment in nonpartisan research agencies necessary for the government to adequately evaluate policy options and inform policy-making? Are non-governmental think tanks better suited to evaluate certain areas of policy analysis than nonpartisan agencies? To what extent are nonpartisan agencies exposed to political pressures that bias their analyses? Consideration of these and other factors are important as policymakers and the public evaluate optimal funding levels for nonpartisan research agencies.

6 Conclusion

This paper experimentally tests the hypotheses that the provision of policy analysis influences voter preferences; that voters, in aggregate, are more responsive to policy analysis produced by nonpartisan research organizations than partisan research organizations; and that voters are more responsive to partisan research organizations that share their personal ideology than partisan research organizations that do not share their ideology. I find support for each of these hypotheses. The results indicate that the current informational environment, in which policy analysis is often unavailable or only available from think tanks, may lead to limited diffusion of information on policy features into the general public and increased political polarization relative to a system in which nonpartisan analysis was more readily available.

There are many open questions about how voters respond to policy analysis. As described

at the end of Section 1, the current experiment has a variety of limitations and was designed in part to provide an empirical setting where the differential responsiveness of the public to various sources of policy analysis was likely to be statistically detectable. It would be valuable for future research to investigate the extent to which voters respond to policy analysis in other settings, both in terms of political context (i.e. outside of the U.S. political setting) and survey settings (i.e. in a survey setting other than mTurk). For example, a field experiment that mimicked the setup of the current experiment, but applied it in the context of real voters during elections in multiple different countries would be a very helpful contribution. Other valuable potential contributions include examining how long the effects of various sources of policy analysis persist; evaluating how voters respond to policy analysis focused on factors other than cost-effectiveness, such as effects on employment, the budget, the environment, national security, or equity; and examining whether voters can effectively process more complex summaries of policy analysis than those presented in the present study.

More broadly, there is a general gap in the literature with respect to the role that the government should play in providing the public with information about policy options. While the provision of unbiased analysis of policies is a public good, there has been less attention within the academic literature to appropriate management of this type of informational public good than to more traditional types of public goods, such as environmental resources. Given the current political environment–in which objective analyses appear to constitute an increasingly smaller part of political discourse–there is a possibility that research that furthers understanding of optimal government investment in nonpartisan policy analysis would be of tremendous value.

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8 Figures and Tables

Table 1: Overview of Key Experimental Features

Experimental Groups (4): Source of Research on Cost-Effectiveness

- Control: No information on cost effectiveness throughout survey
- Treatment 1: Cost-effectiveness research produced by a liberal (Democrat-leaning) organization.
- Treatment 2: Cost-effectiveness research produced by a nonpartisan organization.
- Treatment 3: Cost-effectiveness research produced by a conservative (Republican-leaning) organization.

Outcome Question

Research conducted by a _____ organization indicates [policy option 1] is more cost-effective than [policy option 2]. Which type of policy do you prefer?
(Blank filled in according to treatment group. Entire first sentence omitted in control.)

Policy comparisons (first option always described as more cost effective):
Environmental Policy: carbon tax vs. biofuel standard
Health Policy: health insurance tax credits vs. government-provided insurance
Housing Policy: housing vouchers vs. public housing
Labor Policy: earned income tax credit vs. minimum wage
Development Policy: cash transfers vs. traditional aid programs

Notes: Experimental design is described in detail in Section 3.1. Precise language available in Appendix.

Table 2: Summary Statistics

	Full Sample		Sample Restricted by Ideology		
			Conserv.	Moderate	Liberal
Variable	Mean	Std. Dev.	Means		
Outcomes					
Env. Pref. (1 = Carbon Tax)	0.50	0.50	0.42	0.49	0.58
Health Pref. (1 = Tax Credits)	0.47	0.50	0.71	0.52	0.20
Housing Pref. (1 = Vouchers)	0.70	0.46	0.72	0.73	0.65
Labor Pref. (1 = EITC)	0.48	0.50	0.61	0.49	0.33
Dev. Pref. (1 = Cash Transfers)	0.28	0.45	0.25	0.28	0.31
Individual Characteristics					
Ideology: Liberal	0.38	0.48	0.00	0.00	1.00
Ideology: Moderate	0.26	0.44	0.00	1.00	0.00
Ideology: Conservative	0.36	0.48	1.00	0.00	0.00
Vote: Trump	0.38	0.49	0.77	0.35	0.03
Vote: Clinton	0.44	0.50	0.10	0.38	0.80
Vote: Other	0.18	0.39	0.14	0.27	0.17
Registered Voter	0.95	0.22	0.97	0.91	0.96
Gender (1 = Male)	0.55	0.50	0.51	0.63	0.53
Age	36.96	11.55	39.90	35.60	35.09
Marriage Status (1 = Married)	0.38	0.49	0.53	0.35	0.27
Children (1 = Has Children)	0.42	0.49	0.58	0.40	0.28
US Born (1 = US Born)	0.97	0.16	0.98	0.96	0.97
Race: African American / Black	0.06	0.23	0.05	0.07	0.06
Race: Asian / Asian American	0.07	0.25	0.03	0.09	0.09
Race: European American / White	0.81	0.39	0.89	0.75	0.77
Race: Hispanic / Latino	0.06	0.23	0.03	0.06	0.08
Race: Other	0.00	0.00	0.00	0.00	0.00
Educ: Less than High School Degree	0.00	0.07	0.01	0.01	0.00
Educ: High School Graduate / GED	0.12	0.33	0.13	0.14	0.11
Educ: Some College	0.26	0.44	0.24	0.25	0.29
Educ: Associate's Degree	0.14	0.35	0.15	0.15	0.12
Educ: Bachelor's Degree	0.37	0.48	0.35	0.37	0.39
Educ: Master's Degree	0.07	0.26	0.09	0.05	0.08
Educ: Doctoral Degree	0.01	0.08	0.01	0.01	0.01
Educ: Professional Degree	0.02	0.13	0.02	0.02	0.01
Emp: Full-Time	0.59	0.49	0.59	0.61	0.57
Emp: Part-Time	0.10	0.30	0.11	0.10	0.10
Emp: Self-Employed	0.15	0.36	0.12	0.13	0.20
Emp: Unemployed	0.05	0.22	0.04	0.06	0.06
Emp: Student	0.03	0.16	0.02	0.03	0.03
Emp: Not in Labor Force	0.08	0.27	0.12	0.08	0.05
Income: Less than 15k	0.22	0.41	0.18	0.23	0.25
Income: 15k-50k	0.51	0.50	0.47	0.50	0.56
Income: More than 50k	0.27	0.45	0.36	0.27	0.19

Notes: Each observation represents a unique survey respondent. Data based on experiment outlined in Table 1. Experiment implemented through Amazon's Mechanical Turk. There are 1,443 observations and 543, 380, and 521 liberals, moderates, and conservatives, respectively.

Table 3: Comparison of mTurk sample to U.S. population based on 2011-2015 5-year estimates from the American Community Survey

Variable	mTurk	ACS
Gender (1 = Male)	0.55	0.49
Median Age	34.00	37.60
Marriage Status (1 = Married)	0.38	0.50
US Born (1 = US Born)	0.97	0.87
Race: African American / Black	0.06	0.13
Race: Asian / Asian American	0.07	0.05
Race: European American / White	0.81	0.62
Race: Hispanic / Latino	0.06	0.17
Race: Other	0.00	0.03
Educ: Less than High School Degree	0.00	0.13
Educ: High School Graduate / GED	0.12	0.28
Educ: Some College	0.26	0.21
Educ: Associate's Degree	0.14	0.08
Educ: Bachelor's Degree	0.37	0.19
Educ: Graduate Degree	0.10	0.11
Emp: Employed	0.84	0.58
Emp: Unemployed	0.05	0.05
Emp: Not in Labor Force (including students)	0.11	0.36

Notes: Unless otherwise indicated, all figures reported are means. Some education and employment categories from Table 2 have been aggregated for the purposes of comparability. Not all variables from Table 2 are available in the ACS. Age is reported as a median for both samples for purposes of comparability.

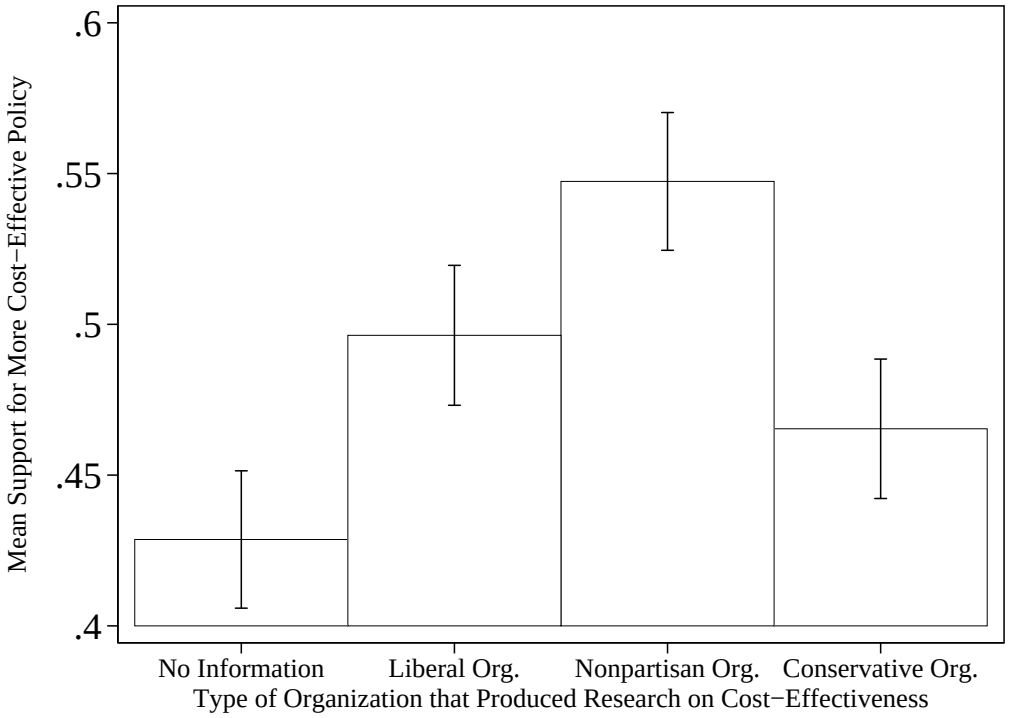

Figure 1: **Mean Support for More Cost-Effective Policy by Treatment Group.** Means and 95-percent confidence intervals computed from pooled data in which each response to a policy question is treated as a separate observation.

Table 4: The Effect of Policy Analysis on Policy Preferences by Source - Pooled Analysis

	All	Liberal	Moderate	Conservative
	(1)	(2)	(3)	(4)
Org.: Liberal	0.063***	0.089***	0.081**	0.022
	(0.017)	(0.029)	(0.037)	(0.026)
Org.: Nonpartisan	0.122***	0.137***	0.178***	0.079***
	(0.018)	(0.028)	(0.041)	(0.027)
Org.: Conservative	0.042**	0.002	0.055	0.089***
	(0.017)	(0.027)	(0.036)	(0.028)
R-squared	0.025	0.021	0.027	0.017
Obs.	7015	2670	1830	2515

Notes: Each observation represents a response to a policy preference question. There are five observations per survey respondent. The dependent variable in all models is whether the individual supported the more cost-effective policy (i.e. carbon tax, tax credits for health insurance, housing vouchers, EITC, cash transfers). The omitted experimental group is the control group that received no information on cost-effectiveness. Samples in columns 2 through 4 are restricted to individuals with the ideology reported in the column headings. All models are linear probability models. All models include controls for gender, age, marital status, having children, U.S. born, registered voter, race, education, employment, and income. Standard errors are clustered by survey respondent. One, two, and three stars indicate 10 percent, 5 percent, and 1 percent significance, respectively.

Table 5: The Effect of Policy Analysis on Cost-Effectiveness on Policy Preferences by Source - By Policy Area

Topic: Environment	All	Liberal	Moderate	Conservative
Org.: Liberal	0.062*	0.145**	0.068	-0.042
	(0.037)	(0.060)	(0.077)	(0.062)
Org.: Nonpartisan	0.101***	0.115*	0.159**	0.077
	(0.037)	(0.060)	(0.081)	(0.062)
Org.: Conservative	0.060	-0.021	0.093	0.129**
	(0.038)	(0.061)	(0.078)	(0.064)
R-squared	0.045	0.094	0.069	0.059
Obs.	1403	534	366	503
Topic: Health	All	Liberal	Moderate	Conservative
Org.: Liberal	0.087***	0.117**	0.084	0.071
	(0.034)	(0.048)	(0.076)	(0.058)
Org.: Nonpartisan	0.154***	0.165***	0.250***	0.073
	(0.033)	(0.047)	(0.078)	(0.057)
Org.: Conservative	0.049	0.011	0.059	0.098*
	(0.032)	(0.040)	(0.076)	(0.058)
R-squared	0.247	0.093	0.124	0.065
Obs.	1403	534	366	503
Topic: Housing	All	Liberal	Moderate	Conservative
Org.: Liberal	0.023	0.048	0.062	-0.031
	(0.035)	(0.060)	(0.074)	(0.057)
Org.: Nonpartisan	0.055	0.083	0.156**	-0.039
	(0.035)	(0.057)	(0.073)	(0.056)
Org.: Conservative	0.008	-0.064	0.097	0.023
	(0.035)	(0.061)	(0.073)	(0.056)
R-squared	0.038	0.061	0.085	0.084
Obs.	1403	534	366	503
Topic: Labor	All	Liberal	Moderate	Conservative
Org.: Liberal	0.059	0.109*	0.089	-0.024
	(0.037)	(0.058)	(0.080)	(0.065)
Org.: Nonpartisan	0.147***	0.201***	0.113	0.119*
	(0.036)	(0.057)	(0.083)	(0.061)
Org.: Conservative	0.020	-0.006	0.043	0.045
	(0.036)	(0.053)	(0.080)	(0.063)
R-squared	0.087	0.078	0.055	0.038
Obs.	1403	534	366	503
Topic: Development	All	Liberal	Moderate	Conservative
Org.: Liberal	0.085**	0.026	0.103	0.134***
	(0.033)	(0.057)	(0.067)	(0.051)
Org.: Nonpartisan	0.155***	0.118**	0.211***	0.167***
	(0.034)	(0.057)	(0.075)	(0.051)
Org.: Conservative	0.072**	0.088	-0.017	0.149***
	(0.033)	(0.057)	(0.065)	(0.053)
R-squared	0.035	0.040	0.085	0.083
Obs.	1403	534	366	503

Notes: Dependent variables are whether the individual supported the more cost-effective policy (i.e. carbon tax, tax credits for health insurance, housing vouchers, EITC, cash transfers) in each policy area, as indicated by the panel headings. The omitted experimental group is the control group that received no information on cost-effectiveness. Samples in columns 2 through 4 are restricted to individuals with the ideology reported in the column headings. All models are linear probability models. All models include controls for gender, age, marital status, having children, U.S. born, registered voter, race, education, employment, and income. White-corrected standard errors are reported in parentheses. One, two, and three stars indicate 10 percent, 5 percent, and 1 percent significance, respectively.

A Appendix

A.1 Appendix Tables

Table A.1: Summary Statistics for Treatment Variables

Variable	Mean	St. Dev.
Org.: Liberal	0.25	0.43
Org.: Nonpartisan	0.25	0.43
Org.: Conservative	0.25	0.43
Org.: No information	0.25	0.43

Notes: Each observation represents a unique survey respondent.

Table A.2: Results (p-values) of Balance Tests of Equivalent Means across Experimental Groups for Each Covariate

Variable	p-value
Gender (1 = Male)	0.83
Registered Voter	0.09
Age	0.82
Marriage Status (1 = Married)	0.71
Children (1 = Has Children)	0.53
US Born (1 = US Born)	0.15
Ideology	0.38
Race	0.40
Education	0.55
Employment	0.04
Income	0.18

Notes: The null hypothesis for each test is that means of the corresponding covariate are equal across experimental groups. For age, the p-value is computed using an ANOVA. For all other variables, the p-values are computed using a Chi-Square test.

Table A.3: The Effect of Research on Cost-Effectiveness on Policy Preferences by Source - Pooled Analysis - Probit

	All	Liberal	Moderate	Conservative
	(1)	(2)	(3)	(4)
Org.: Liberal	0.064***	0.091***	0.082**	0.021
	(0.017)	(0.029)	(0.037)	(0.026)
Org.: Nonpartisan	0.124***	0.138***	0.178***	0.080***
	(0.018)	(0.029)	(0.039)	(0.027)
Org.: Conservative	0.043**	0.002	0.056	0.088***
	(0.017)	(0.028)	(0.036)	(0.028)
Obs.	7015	2670	1830	2515

Notes: Each observation represents a response to a policy preference question. There are five observations per survey respondent. The dependent variable in all models is whether the individual supported the more cost-effective policy (i.e. carbon tax, tax credits for health insurance, housing vouchers, EITC, cash transfers). The omitted experimental group is the control group that received no information on cost-effectiveness. Samples in columns 2 through 4 are restricted to individuals with the ideology reported in the column headings. All models are probit models. Marginal effects are reported. All models include controls for gender, age, marital status, having children, U.S. born, registered voter, race, education, employment, and income. Standard errors are clustered by survey respondent. One, two, and three stars indicate 10 percent, 5 percent, and 1 percent significance, respectively.

Table A.4: The Effect of Research on Cost-Effectiveness on Policy Preferences by Source - Pooled Analysis - No Covariates

	All	Liberal	Moderate	Conservative
	(1)	(2)	(3)	(4)
Org.: Liberal	0.068***	0.092***	0.090***	0.024
	(0.017)	(0.028)	(0.034)	(0.026)
Org.: Nonpartisan	0.119***	0.127***	0.172***	0.081***
	(0.018)	(0.028)	(0.038)	(0.027)
Org.: Conservative	0.037**	0.001	0.056*	0.066**
	(0.018)	(0.027)	(0.034)	(0.028)
R-squared	0.008	0.013	0.014	0.004
Obs.	7215	2710	1900	2605

Notes: Each observation represents a response to a policy preference question. There are five observations per survey respondent. The dependent variable in all models is whether the individual supported the more cost-effective policy (i.e. carbon tax, tax credits for health insurance, housing vouchers, EITC, cash transfers). The omitted experimental group is the control group that received no information on cost-effectiveness. Samples in columns 2 through 4 are restricted to individuals with the ideology reported in the column headings. Standard errors are clustered by survey respondent. One, two, and three stars indicate 10 percent, 5 percent, and 1 percent significance, respectively.

A.2 Language of Survey

This section reports the language used in the survey. Each subsection represents a survey page. All information on a survey page was presented simultaneously. Respondents clicked an arrow after completing a page to move to the next page. For survey questions, possible answers are included in brackets. Any boldface that appears below was also used in the survey. No italicized font appeared in the survey. Italics are used below to either indicate language that varied by treatment or to insert comments to clarify survey structure (in which case, the sentence is preceded by "Note:").

A.2.1 Disclosure and Consent Page

This research is conducted by academic researchers. The goal of the research is to enhance understanding of how individuals form their views on public policies. Regardless of your political ideology, this is an important area of research and you are contributing toward to our knowledge as a society by completing this survey.

In this survey, you will be provided with some information about public policy and will be asked questions related to your opinions about public policy, as well as some general demographic questions.

It is very important that you:

1) Answer honestly

2) Carefully read the information presented throughout the survey

You should be able to comfortably complete the survey in 15 minutes.

Additional details related to informed consent:

There are no foreseen risks to your participation in this survey. While it is hard to completely eliminate any possibility of a breach in confidentiality or privacy, no personally identifiable information will be collected in this survey and all data will be stored on password-protected computers. The information that you give in the study will be anonymous (your name will not be recorded and we will not collect detailed geographic information or IP addresses).

If you have any questions about the research, you may contact us at econpolicylab@gmail.com. If you have questions regarding your rights as a research subject, please contact the University of Oregon's Research Compliance Services at researchcompliance@uoregon.edu.

You have the right to withdraw from the study at any time without penalty. Because data are anonymous, you may not withdraw after the data is submitted. Payment will not be given for incomplete or unfinished surveys or surveys completed abnormally quickly.

How to withdraw from the study: Your participation in this study will not be finalized until you have completed it. You can withdraw at any time by closing the browser window or exiting to a different web site.

You may print or save a copy of this page for your own records.

A.2.2 Background Information - Page 1

What is your gender? [Male; Female; Other]
What is your year of birth? [Drop down menu comprised of 1916-1988]

What is your marital status? [Single; Married]
Do you have children [Yes; No]
How would you describe your ethnicity/race?[European American / White; African American / Black; Hispanic / Latino; Asian / Asian American; Other]
Were you born in the United States? [Yes; No]
In which state do you currently reside? [Drop down menu of 50 states, DC, PR]

A.2.3 Background Information - Page 2

What is the highest level of school you have completed or the highest degree you have received? [Less than high school degree; High school graduate (high school diploma or equivalent including GED); Some college but no degree; Associate degree in college (2-year); Bachelor's degree in college (4-year); Master's degree; Doctoral degree; Professional degree (JD, MD)]
Which statement best describes your current employment status? [Full-time employee; Part-time employee; Self-employed or small business owner; Unemployed and looking for work; Student; Not in labor force (for example, retired of full-time parent)]
In what range does your income fall? [$0-$15,000; $15,000-$50,000; Over $50,000]
Who did you vote for in the 2016 election? Or who would you have voted for if you had voted? [Hillary Clinton; Donald Trump; Other]
On policy matters, where do you see yourself on the liberal/conservative spectrum? [Conservative; Moderate; Liberal]
Are you registered to vote? [Yes; No]

A.2.4 Survey Preview

The remainder of the survey consists of information and questions about your preferences in 5 different areas of public policy. There are also two more general questions at the end of the survey. **Please take your time and complete your responses carefully.**

A.2.5 Treatment - Cost Effectiveness

In the following portions of the survey, you will be presented with information on various policies. Some of this information includes information on the cost-effectiveness of different policy options. Cost-effectiveness is a measure of the expenditures required to achieve a certain outcome. As a general example, consider two options: "A" and "B". If A is more cost effective than B, then A can be used to achieve a similar result as B at a lower overall cost.

The cost-effectiveness information that is presented in this survey is based on research and analysis conducted by a [*liberal (i.e. Democrat-leaning); non-partisan; conservative (i.e. Republican-leaning) organization*]. *Note 1: For the "non-partisan" treatment group, the following was also included at the end of this section "(Non-partisan organizations are politically neutral, they are not aligned with a political party)." Note 2: This page was omitted from survey for control group.*

What type of organization conducted the cost-effectiveness research that will be presented as part of this survey? [Conservative organization; Non-partisan organization; Liberal organization]

A.2.6 Climate Change Policy - Page 1 - Attention Check

Limiting greenhouse gas (GHG) emissions–and the associated negative effects from climate change–has been a policy goal for many governments.

There are a variety of policy options available that could be employed to reduce the amount of GHG emissions.

One option is to implement a carbon tax. Because a carbon tax would require firms to pay a fee if they released GHG emissions, it would give firms an incentive to find alternative methods of production that led to lower levels of GHG emissions.

Another option is a biofuel standard. Biofuels are alternatives to gasoline or oil that are derived from plants. Powering a vehicle through biofuels typically leads to the release of fewer GHG emissions than powering a vehicle through a conventional fuel such as gasoline or oil. Biofuel standards require a certain fraction (i.e. 20%) of fuel for automobile sources must come from biofuels.

Research conducted by a [*liberal (i.e. Democrat-leaning); non-partisan; conservative (i.e. Republican-leaning) organization*] organization indicates that a carbon tax is more cost-effective than a biofuel standard. *Note: This paragraph omitted from survey for control group.*

Which of the following is NOT a climate change policy option that was described above? [Carbon Tax; Endangered Species Act; Biofuel Standard]

A.2.7 Climate Change Policy - Page 2 - Preference

Note: This page also included the background information on the two policies. That is, all of the language from the previous page, with the exception of the question at the bottom of the previous page, was also included on this page.

Which climate change policy do you prefer?[Carbon Tax; Biofuel Standard]

A.2.8 Health Policy - Page 1 - Attention Check

Governments often implement programs to increase health care coverage, especially for low-income households.

There are a variety of policies that can be used to increase access to health care.

One option is to provide tax credits to individuals that buy private insurance. These tax credits would cover a significant portion of the costs of health care coverage.

Another option is to directly provide low-income households with government-provided insurance.

Research conducted by a [*liberal (i.e. Democrat-leaning); non-partisan; conservative (i.e. Republican-leaning) organization*] organization indicates tax credits are more cost-effective than government-provided insurance. *Note: This*

paragraph omitted from survey for control group.

Which of the following is NOT a health policy option that was described above?[Health Insurance Tax Credits; Government-Provided Insurance; HMOs]

A.2.9 Health Policy - Page 2 - Preference

Note: This page also included the background information on the two policies. That is, all of the language from the previous page, with the exception of the question at the bottom of the previous page, was also included on this page.

Which health policy do you prefer?[Health Insurance Tax Credits; Government-Provided Insurance]

A.2.10 Housing Policy - Page 1 - Attention Check

Providing affordable housing for low-income households has often been considered a public policy priority.

There are a variety of policy options available that could be employed to increase the affordability of housing to low-income households.

One option is to provide housing vouchers. Households that receive vouchers do not need to pay the full amount of their rent. Instead, they pay the difference between the actual rent and the amount of the voucher. The voucher amount is paid to landlords by the government.

Another option is for the government to provide public housing. Public housing is built by the government. Rental prices in public housing are set at a below-market rate in order to keep prices affordable.

Research conducted by a [*liberal (i.e. Democrat-leaning); non-partisan; conservative (i.e. Republican-leaning) organization*] organization indicates housing vouchers are more cost-effective than public housing. *Note: This paragraph omitted from survey for control group.*

Which of the following is NOT a housing policy option that was described above?[Housing Vouchers; Public Housing; Property Taxes]

A.2.11 Housing Policy - Page 2 - Preference

Note: This page also included the background information on the two policies. That is, all of the language from the previous page, with the exception of the question at the bottom of the previous page, was also included on this page.

Which housing policy do you prefer?[Housing Vouchers; Public Housing]

A.2.12 Labor Policy - Page 1 - Attention Check

Increasing the earnings of low-income workers has often been a labor policy objective for many governments.

There are a variety of policies that can be used to increase the earnings of low-income workers.

One option is the earned income tax credit. The earned income tax credit effectively subsidizes low-income earnings (i.e. for each $1 earned, the government gives the household an additional $0.40 dollars in their tax refund).

Another option is a minimum wage. The minimum wage sets the minimum allowable hourly rate that workers are allowed to be paid.

Research conducted by a [*liberal (i.e. Democrat-leaning); non-partisan; conservative (i.e. Republican-leaning) organization*] organization indicates the earned income tax credit is more cost-effective than the minimum wage. *Note: This paragraph omitted from survey for control group.*

Which of the following is NOT a labor policy option that was described above?[Minimum Wage; Earned Income Tax Credit; Corporate Tax]

A.2.13 Labor Policy - Page 2 - Preference

Note: This page also included the background information on the two policies. That is, all of the language from the previous page, with the exception of the question at the bottom of the previous page, was also included on this page.

Which type of labor policy do you prefer?[Minimum Wage; Earned Income Tax Credit]

A.2.14 Development Policy - Page 1 - Attention Check

Developed countries often provide funding to organizations to implement aid programs to reduce poverty in poor nations.

There are a variety of policies that can be used to reduce poverty in poor nations.

One option is to provide cash transfers. Cash transfers are direct monetary payments to low-income households.

Another option is to use traditional aid programs based on in-kind assistance or supply-side policies. Examples of traditional aid programs include building schools, adult literacy campaigns, de-worming programs, and the provision of agricultural technology.

Research conducted by a [*liberal (i.e. Democrat-leaning); non-partisan; conservative (i.e. Republican-leaning) organization*] organization indicates cash transfers are more cost-effective than traditional aid programs. *Note: This paragraph omitted from survey for control group.*

Which of the following is NOT an aid policy option that was described above?[Cash Transfers; Traditional Aid Programs; Elections]

A.2.15 Development Policy - Page 2 - Preference

Note: This page also included the background information on the two policies. That is, all of the language from the previous page, with the exception of the question at the bottom of

the previous page, was also included on this page.

Which type of aid policy do you prefer?[Cash Transfers; Traditional Aid Programs]

A.2.16 Debriefing

Thank you for your participation. Depending on the survey you completed, you may have been presented with information on the cost-effectiveness of the policy options described earlier in this survey. This cost-effectiveness information was non-factual (i.e. neither necessarily correct nor incorrect). It was added to the survey as part of an experimental examination of how individuals respond to different sources of information.

A.2.17 Opportunity for Comments

If you have any comments on this survey, please enter them here: