How and When Democratic Values Matter: Challenging the Effectiveness Centric Framework in Program Evaluation

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Word Count: 9201

Abstract

Performance information is overwhelmingly used in program evaluation by both public managers and external stakeholders. In the market-based New Public Management movement, public programs and services are the government's product and effectiveness becomes government's major selling point. However, this approach may marginalize the role of democratic values in governance. In the current complex society with low public trust in government, we embrace the idea of New Public Service to reiterate the importance of democratic values in program implementation, and we examine school sustainability efforts that incorporate multi-dimensional social factors. In this study, we conducted a pre-registered conjoint experiment to examine: (1) whether effectiveness or democratic values display larger explanatory power to explain citizens' program adoption support; and (2) when citizens have low trust in government, would they increase the priority of democratic values in program evaluation? Our results ($N = 1154$) show that effectiveness and democratic values are equivalently compelling in predicting citizens' policy preferences, and the effect size of democratic values is significantly increased in the low trust treatment group. Our findings challenge the prevalent view that effectiveness is centric to win public program support. Alternatively, we suggest that public managers should not only rely on performance management tools, but also employ inclusive and open values in governance.

Keywords: New public service, Democratic values, Conjoint experiment, Sustainability programs

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We thank Gregory Porumbescu and Chengxin Xu for feedbacks during different stages of this project. We thank technical advice from Ivan Lee and Chien-shih Huang. We are also grateful to insightful comments from participants at the 2019 Annual Conference of the Association of Public Policy Analysis & Management (APPAM).

Introduction

When evaluating a public program, do citizens act like "customers" who only pay attention to the service effectiveness? Or, do citizens view themselves as the "owners" of the government and care not only about effectiveness but also the democratic values behind the program? Further, do citizens have different priorities between democratic values and effectiveness in different situations? These questions are associated with the debate between two impactful governance approaches: New Public Management (NPM) and New Public Service (NPS), which discuss the role of citizenship and how citizens and the government should interact with each other in achieving public interests (Bryson et al. 2014; Denhardt and Denhardt 2007; Frederickson 1996; Wichowsky and Moynihan 2008).

In NPM, citizens are customers and public interest is often presented as the aggregation of individual interests (Dagger 1997; Walzer 1995). Under this approach, government's core goal is to implement market-oriented policies and programs, which achieves "outcomes desired by broad groups of citizens seen as customers" (Bryson et al. 2014, 447). The NPM movement in the last three decades may have marginalized public managers' attention on democratic "non-mission-based" values when effectiveness and efficiency have become central to gain citizens' support for public programs (Moore 2014; Radin 2006; Rosenbloom 2007). The major problem of NPM is its oversimplification of citizen-state interaction, which overlooks citizens' shared values but emphasizes customers' aggregated individual interests (Denhardt and Denhardt 2007). This approach may raise social conflicts when the performance information on the aggregated program effectiveness is not universally effective and unbiasedly delivering the same message for every social subgroup (James and Van Ryzin 2017; Moynihan et al. 2011; Wichowsky and Moynihan 2008). In addition, the current American society is cynical about the motivation of politicians and distrusts government's performance information. Public programs therefore face greater difficulties to gain legitimacy only through "managing for results" (Denhardt and Denhardt 2007, 26). These

challenges reflect Waldo's classical critique: "One major obstacle in the way of further development of democratic theory is the idea that efficiency is a value-neutral concept or, still worse, that it is antithetical to democracy" (Waldo 1952, 97).

Different from NPM, NPS defines public interests as "the result of a dialogue about shared values rather than the aggregation of individual interests" (Denhardt and Denhardt 2007, 45). So, communication among citizens, communities, and the government is prominent. Rather than only reporting a public program's effectiveness information, government should enable diverse groups of citizens to access a program's implementation information (openness) and actively participate in a program's decision-making process (inclusiveness) (Christensen et al. 2011; Grimmelikhuijsen and Feeney 2017; Rossmann and Shanahan 2012). So, NPS moves beyond the consumerism performance management and integrates democratic values, effectiveness and efficiency to reduce social frictions (Bryson et al. 2014). Enlightened by these thoughts, we extend our research questions: (1) Do citizens care primarily only about public programs' effectiveness, or do they consider both democratic values and effectiveness in their evaluation of a program? (2) How does low trust in government affect citizens' perceptions towards both democratic value and program effectiveness information?

Regarding the drawbacks of NPM to face complex social problems in the current "era of low trust", we adopt the NPS approach from Denhardt and Denhardt (2015, 2007) to examine the importance of democratic values in citizen-state interactions. We attempt to answer both research questions above by simultaneously involving multi-dimensional public program information in a conjoint design experiment. We compare the impacts of democratic values and effectiveness on citizens' preferences for a public program, conditional on citizens' exogenous trust levels in government. Our experiment uses a school sustainability program, an area in which Americans often have polarized views on the environmental and economic impacts of green policies. In our vignette, democratic values are represented by decision-making inclusiveness and information openness; program effectiveness is categorized by environmental and economic dimensions. We find that democratic values and effective-

ness are equally important in affecting citizens' support for adopting school sustainability programs. Narrative cues suggesting low trust in government lead individuals to attribute more priority to decision-making inclusiveness. Meanwhile, the importance of effectiveness is not moderated by individuals' low trust in government.

Our findings make three contributions to public administration theory. First, democratic values can be viewed not only as normative considerations but also as practical tools and results in program implementation and environmental management. This finding corresponds with Denhardt and Denhardt's (2015, 669) idea of public serving, which argues that "an increasingly important role of the public servant is to serve citizens and communities by helping them articulate and meet their shared goals rather than attempting to control or steer society in new directions." Second, democratic values become central to public administration, when neither the efficiency-based traditional public administration or the market-oriented NPM is helpful to alleviate the current complex tensions between citizens and government (Bryson et al. 2014). Especially, including diverse communities in the decision-making process may be helpful to rebuild confidence for cynical citizens in supporting public programs. Finally, since effectiveness and democratic values are both important in citizens' eyes, public managers, should therefore ideally combine performance management tools and deliberative problem-solving techniques in public program governance.

Theory

Democratic Values and Effectiveness

Abraham Lincoln's Gettysburg Address summarizes democracy as: "a government of the people, by the people, and for the people." Accordingly, government should uphold democratic values through citizens' participation in decision-making and active engagement in the political life (DeLeon 1995; Denhardt and Denhardt 2007). In a public program, if democratic values are the principles to follow in the implementation process (Rossmann and

Shanahan 2012), effectiveness is the achievement of the program with quantifiable measures (Boyne 2002; Boyne et al. 2005). Democratic values and program effectiveness are both important for citizens to understand public programs (Rossmann and Shanahan 2012). On the one side, citizens have "public spirit" that concerns broader public interests than their own individual interests, so they care about democratic values in the process of public programs; on the other side, performance information on effectiveness often serves as an evidence-based reference for citizens to evaluate public programs (Denhardt and Denhardt 2007; Frederickson 1982, 1991). However, the NPM approach and current academia put more emphasis on studying effectiveness than democratic values to understand citizens' public program perceptions (Bryson et al. 2014; Cohen 1993; Hood 2012). Even though this approach provides managerial efficiency and technical development for improving the expression of performance information, NPM fails to consider its impact on citizenship.

One can argue two related but different strands of the impact of information availability regarding democratic values on program evaluation. One strand is instrumental that asserts citizens will be more positive towards a program framed by democratic values. A second strand argues that normatively, government should promote the visibility of democratic values as a goal in building citizenship and not just impacting a citizen's perception of one program's evaluation.

Several policy theories support the normative view of democratic values' importance in messages within a democracy to its citizens. Central to policy feedback theory, public opinion is not only the aggregation of individual policy preferences, but also the result of institutional interactions between citizens and government (Moynihan and Soss 2014; Wichowsky and Moynihan 2008). Pierson (1992) argues that public policies create resources and incentives that change mass opinion and behavior, including influencing their votes, their policy preferences, and their views of themselves within the public sector. Schneider and Ingram (1997) argue that the social construction of public policies' outcomes and influence on groups in society affects citizens by conveying messages regarding their civic identity within

the political community. So, if the government overwhelmingly publishes performance information related to effectiveness but overlooks information about democratic values, citizens will identify themselves as customers. The information imbalance between effectiveness and democratic values may contribute to the alienation of citizens from their civic obligations as citizens (Wichowsky and Moynihan 2008). This problem calls for an awareness within government and academia to systematically consider democratic values as well as effectiveness as attributes for program evaluation and the development of democratic citizenship.

Democratic Values: Openness and Inclusiveness

Although there is a long list of concepts within democratic values, openness and inclusiveness are the fundamental grounds of the democratic process in public program implementation (Denhardt and Denhardt 2007; Grimmelikhuijsen and Feeney 2017; Rossmann and Shanahan 2012). Governments should follow both values to restore and highlight democratic citizenship. Denhardt and Denhardt (2007) suggest that open and inclusive public programs provide the possibility to activate authentic citizen involvement in the policy process. Likewise, open government advocates argue that policy information and decision-making processes should be accessible and transparent to citizens (Grimmelikhuijsen and Feeney 2017). Therefore, this article keeps in alignment with Rossmann and Shanahan's (2012, 57) argument that "openness and inclusiveness are two democratic values espoused as key components of a legitimate, democratic government." Next, we consider both the normative prescriptive and empirical literatures to demonstrate why openness and inclusiveness are both essential in citizens' program evaluation.

Openness of implementation information

We define openness as the government delivering information for citizens and guaranteeing transparency of process (Denhardt and Denhardt 2007; Grimmelikhuijsen and Feeney 2017; Meijer et al. 2012; Piotrowski and Rosenbloom 2002; Rossmann and Shanahan 2012).

Normatively, an open implementation of a public program provides information on how the program is going to be executed and the expected consequences after implementation. On the government side, the government achieves legitimacy by being transparent on its operation. It sidesteps government's black-box operation by revealing process information to the public (James 2011; Walker et al. 2018). When government information is disclosed and citizens have access to it, administrative behaviors are likely to be more ethical and follow the publics' expectations rather than running against the publics' interests (Piotrowski and Rosenbloom 2002). On the citizens' side, decision-making and procedural information disclosure builds public trust toward the government, which reduces information asymmetry and facilitates citizen-state interaction (Grimmelikhuijsen et al. 2013). Openness enables citizens to be a part of political life and it is the prerequisite of authentic civic engagement (Denhardt and Denhardt 2007). With accessible and transparent government information, citizens will have clearer and more accurate understandings from which to provide their opinions on policies (Meijer et al. 2012).

Several empirical studies on the relationship between openness and public opinion provide grounds for this study. Literature finds that when public decision-making is open, citizens are more willing to accept the decision and support it (e.g., De Fine Licht et al. 2014; Porumbescu and Grimmelikhuijsen 2018). Based on the normative argument and empirical evidence, we expect:

H1a: Individuals are more likely to prefer that the program implementation information be available to the public rather than available to the government's internal review.

Inclusiveness of program

Inclusive programs enable citizens to actively engage in the overall policy making process from agenda setting through dialogue and discourse (Denhardt and Denhardt 2007; Rossmann and Shanahan 2012).

Normatively, inclusive programs offer opportunities to reflect diverse interests which helps resemble ideal democracy and broad citizenship. Inclusive governance provides legitimacy to a policy or program (Irvin and Stansbury 2004), represents the diverse interests of citizens, and finally enhances the value of representative democracy (Fung 2015). One example of inclusive governance is representative bureaucracy, which reflects citizens' interests in decisions made by bureaucrats whose demographics represent the population. Through this representation of citizens within management, we expect that decisions are more likely to take into account the needs and consequences of a wide range of citizens (Meier 2019; Riccucci and Van Ryzin 2017). At the same time, organized interest groups around a policy are likely to champion their own goals in policy decisions (Golden 1998). Stakeholders, including social organizations, community groups, and interest groups, speak for diverse and heterogeneous interests (Carpenter 2002; Kettl 2006; Sharp et al. 2011). The co-existence of numerous interest groups performs checks and balances as well as letting stakeholders voice their interests (Reenock and Gerber 2008), and is a core strength of a pluralist and republican democracy (Dahl 1956; Golden 1998; Hamilton et al. 2008). More direct forms of citizen participation in policy making complement the electoral representative system of policy making across the three branches of government (Fung 2015). Citizens have the right and duty to be involved in policy design and implementation, and their participation ensures representativeness in the policy making process (Berry 2009; Nabatchi 2010; Nabatchi and Leighninger 2015; Whitaker 1980).

If a public program has multiple purposes and needs to balance diverse interests from different groups of people, inclusiveness of a wide range of citizens becomes salient. Empirically, civic engagement and public understanding not only shape the legitimacy of the policy (Wallner 2008), but also affect how the public perceives government (Ingrams et al. 2020). Most relevant to our study, Herian et al. (2012) test the relationship between perceived fairness and the information about public participation in governance. When this information is available, citizens perceive the government to be fairer and they are more likely

to support government actions. Based on the above theories and evidence, we construct our hypothesis of inclusiveness.

H1b: Individuals are more likely to prefer government programs that involve diverse local communities rather than government agencies in the decision-making process.

Program effectiveness

Performance information of program effectiveness affects citizens' perceptions towards government, and this argument is heavily driven from recent empirical evidence (e.g., James 2011; James et al. 2020; Olsen 2017; Walker et al. 2018). Performance information of effectiveness affects citizens by comparing it with different reference points (James 2011; James and Moseley 2014; Olsen 2017; Van Ryzin 2013), the positive or negative expression of the same outcome (Deslatte 2020; Olsen 2015), and third, even the information source of performance (Walker et al. 2018). A summary of these studies generally shows that the linkage between effectiveness information and public support is straightforward: individuals are more likely to support a program with strong effectiveness outcomes (Hypothesis 2a).

Scant research confirms the equal importance of democratic values and program effectiveness. However, in some cases outcome favorability outweighs values in citizens' policy evaluation. For example, Esaiasson et al. (2019) compare the role of decision-making arrangements and outcome favorability on people's policy acceptance in diverse contexts. Their results report that outcome favorability is the stronger factor for policy acceptance than the decision-making arrangements in most of the situations. Similarly, Graham and Svolik (2020) demonstrate that Americans are willing to trade-off democratic principles to achieve favorable policies. In addition, Ruder and Woods (2020) find that people do not increase their favorability toward an agency based on procedural fairness information, and people's perception of procedural fairness is context dependent. The previous studies use different policy categories to indicate the outcome favorability, but we compare program

effectiveness and democratic values in the current study using the same program. From a fundamental cognitive psychological perspective, people can easily direct their attention to effectiveness information in a numerical format since it is more explicit and understandable than other types of information (Grosso et al. 2017; Olsen 2015, 2017). Combining the above evidence, we assume that program effectiveness will contribute a stronger effect than democratic values in impacting citizens' evaluation process (Hypothesis 2b).

H2a: Strong program effectiveness has a positive effect on citizen's public program adoption support.

H2b: In explaining citizens' public program adoption support, program effectiveness information has a more positive effect on citizen views than democratic values.

Trust

Although democratic values and program effectiveness can both affect citizens' public program perceptions, different levels of trust in government moderate the effects of these two factors in different directions. We argue that low trust citizens will discredit the accountability of a public program's effectiveness information, so the positive effect of effectiveness on program evaluation will be reduced. In contrast, low trust citizens will increase their preference for democratic values. Thus, low trust citizens will view democratic values as more important to evaluate programs.

We follow Rousseau et al. (1998, 395) to define trust as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another." This cross-disciplinary definition is widely used by social scientists (Grimmelikhuijsen et al. 2013; Ostrom and Walker 2003). The current study focuses on institutional trust, which is based on citizens' expectations of government's intentions and behaviors. These expectations are affected by social capital, in which citizens interact with the government through civic activities (Keele 2007), so that communities and individuals with higher social capital are expected to have more trust in government and its programs

(Fukuyama 2000). Specifically, trust in government derives from three dimensions: competency, commitment, and honesty (Mayer et al. 1995). Accordingly, a trustworthy government should have the ability to deliver effective services, have commitment to the public interest, and have the integrity to tell the truth to citizens (Berg and Johansson 2020; Grimmelikhuijsen et al. 2013; Grimmelikhuijsen and Welch 2012).

Trust is a function of both long-term and short-term factors. Long-term factors such as culture are deeply connected with people's trust, and these are not easy to change (Grimmelikhuijsen et al. 2013). However, factors like government transparency, program performance, and bureaucrats' ethical behaviors can change people's trust in the short-term (Berg and Johansson 2020; Peyton 2020; Van Ryzin 2011). Moreover, trust can be an exogenous variable that influences citizens' policy opinion, but fewer studies are constructed using this perspective (Peyton 2020; Van de Walle and Bouckaert 2003). Evidence from the real world indicates that government is falling short of citizens' expectations. According to the Pew Center (2019), Americans' public trust in government has decreased continuously since 1958. Only 17 percent of Americans today say they trust the Federal government. The prevalent public distrust leads citizens to question the government's means and motivation, and this phenomenon further challenges the effectiveness centric NPM approach as the best way to manage citizen-state interaction (Denhardt and Denhardt 2007).

Our study involves trust in government as an important exogenous and moderating variable to disentangle the theoretical complexity among democratic values, program effectiveness, and citizens' public program perception. We theoretically explain why public administration should move beyond NPM and embrace democratic values in public program management in the current "era of low trust".

Low trust and program effectiveness

When Citizens have low trust in government, they may doubt whether the performance information of effectiveness is reliable to evaluate programs. One criticism about

NPM is directed to its argument that strong program performance creates high levels of trust in government (Im et al. 2014; Vigoda-Gadot and Yuval 2003). In fact, the causality between performance and trust can be the reverse. Citizens' trust levels affect their perception of the actual performance, and this so-called perceived performance does not always accurately reflect reality (Im et al. 2014). Therefore, strong program effectiveness may not always lead to a positive evaluation from the public. Moreover, if public distrust does not result from program ineffectiveness but from other reasons such as government's unethical behaviors and dishonesty, citizens are not likely to use program effectiveness information to judge government's programs. Denhardt and Denhardt (2007) use an example of a welfare program to explain this phenomenon. Not all citizens are welfare program recipients, but all citizens have to pay taxes. So, every citizen has the right to question the legitimacy of the welfare program if public officials act unethically in program management. Effectiveness, therefore, is not a panacea to restore citizenship, unless this effectiveness information is from external sources rather than from a government's internal report (Walker et al. 2018).

American citizens generally hold negative views about their governments, but the relationship between public low trust and perceived performance is yet to be confirmed. Van de Walle and Bouckaert (2003) assert that trust affects citizens' perception of government performance. However, there are few attempts to empirically test this relationship. Most relevant to the current study, James and Van Ryzin (2017) prime subjects with several political ideology questions. After being primed into antigovernment sentiments, Republicans evaluate the positive and effective Obamacare performance as weak evidence. Although this study does not directly test the relation between public low trust and performance perception, it shows the possibility that citizens' general perceptions toward the government affect their judgement of performance information of effectiveness. According to this study and the above theoretical argument, we make the following exploratory hypothesis:

H3a: Citizens will be less likely to support the public program adoption as a result of strong program effectiveness when they have low trust in government.

Low trust and democratic values

Normatively, low trust citizens will have stronger motivation to hold the government accountable. Democratic values such as openness and inclusiveness encourage nongovernmental actors to be involved in program decisions and implementation processes. The involvement of nongovernmental actors improves legitimacy and accountability of public programs. Therefore, low trust citizens are likely to increase their attribution on democratic values to evaluate public programs.

Both public administration and political science literature discuss citizens' awareness and concern about democratic values in the context of low trust (Kim 2005; Van de Walle and Six 2014; Parry 1976). In the classical liberal theory, a certain level of public distrust in government is not necessarily a problem in democratic society, because citizens have strong intentions to exercise their rights of checks and balances (Parry 1976; Van De Walle and Six 2014). On the contrary, a high level of trust may be risky when it is purely generated from NPM's efficiency and effectiveness, because policy feedbacks from these utilitarian concepts reduce citizens' motivation to question the government's actions, and citizens may gradually view themselves as pure customers in public affairs (Wichowsky and Moynihan 2008).

With information accessible, citizens and external actors can monitor implementation processes and hold the governments accountable (Grimmelikhuijsen and Welch 2012). Citizens prefer trustworthy political entities to implement public programs; if not, citizens may require government actions to be overseen by entities outside of government (Jacobs and Matthews 2017). Since government's capacity to monitor the policy implementation process is already in doubt, citizens may be even more skeptical when they have low trust in government (Conrad and Daoust 2008). Similarly, Mabillard and Pasquier (2015, 2016) argue that the recent negative trend of public trust drives government information disclosure, and open government. Combining these ideas, we ask, does the decline of trust in government generate demands for openness (Hypothesis 3b)?

Moreover, low trust in government may increase citizens' demands for government

inclusiveness, through which citizens hope to have their voices heard in policy implementation and services delivery processes (Meijer et al. 2012). Studies empirically test the relationship between trust and inclusiveness. Cooper et al. (2008) discover a correlation between citizens' trust level and their preference over whom to engage in zoning decisions. If citizens have a high level of trust in local government, they are more likely to support local governments' discretion on zoning decisions. Otherwise, they prefer their governments negotiate with other entities. Scholars also have repeatedly tested the relationships between trust and inclusiveness in tax policy and welfare programs (Chanley et al. 2000; Hetherington and Husser 2012). These studies reveal that if citizens have low trust in their government, they are more willing to reduce government's discretion and allow more social organizations to be involved in policy implementation. Based on the normative liberal theory and the above evidence, we construct our Hypothesis 3c. Figure 1 summarizes the relationship between trust, democratic values, effectiveness, and citizens' program evaluation.

H3b: Citizens will be more likely to support the public program adoption as a result of program information openness when they have low trust in government.

H3c: Citizens will be more likely to support the public program adoption as a result of decision-making inclusiveness when they have low trust in government.

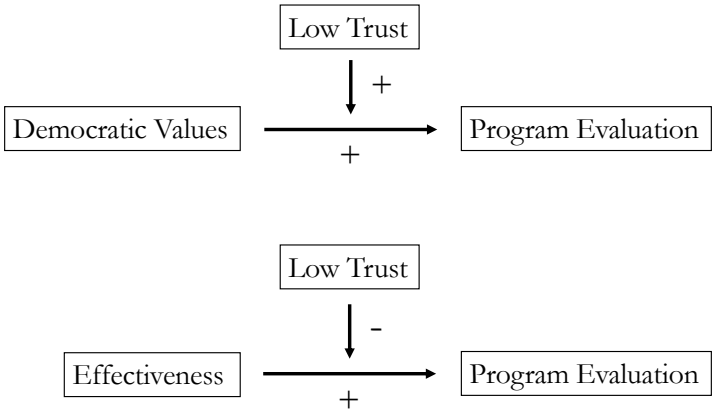

Figure 1: Theoretical Framework

Context: Local Sustainability Effort

We set our vignette in a local sustainability effort scenario for hypothesis testing: a solar panel installment project in public schools. There are two benefits of using a local sustainability program in comparing effects between democratic values and effectiveness. First, sustainability programs pursue both economic and environmental goals. According to the U.S. National Environmental Policy Act 1969, the definition of sustainability is "to create and maintain conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations" (Environmental Protection Agency 1969). Sustainability programs thus have performance information of effectiveness in multiple social dimensions such as economic and environmental, which provide researchers a chance to see how citizens trade off different information. Second, different social subgroups may have diverse demands and conflicts in sustainability issues (Deslatte 2020). To satisfy demands and overcome conflicts, sustainability programs often need to collaborate with local interest groups or interorganizational agencies (Lubell and Fulton 2008). Therefore, how citizens perceive these different allocations reflect their value preferences.

For example, the "solar school program" among the United States local governments fits well with the multi-dimensional concept as its program attributes involve both subjective value elements and objective program effectiveness. By implementing solar panels in public schools, solar school programs aim to save electricity expenses in schools and improve local air quality. According to the 2017 annual report from the Solar Energy Industries Association (SEIA), solar school programs have various implementation strategies used by different local school districts (Solar Energy Industries Association 2017). At the decision-making stage, some school districts get their state's financial assistance, some school districts developed third-party ownership of the solar system to save schools' upfront capital fees, and other school districts worked with local communities to develop their own installation plans.

During the implementation stage, schools made different decisions to involve diverse groups of citizens, technical experts, and/or government officials to oversee the project's processes. At the evaluation stage, solar school projects need to be measured by both economic and environmental outcomes, such as saved costs at the school and local air quality improvement, respectively. Therefore, the multi-dimensionality of solar school programs provides researchers a good opportunity to study how citizens trade off democratic value and effectiveness in assessing this public program.

Experimental Design

This study tests public support of local sustainability programs conditional on democratic values and program effectiveness (pre-registration at: Appendix A). After exogenously separating participants into either a control or low trust (LT) condition, we first assessed whether democratic values or program effectiveness had stronger effects on citizens to support a solar school project adoption. Second, we compared project adoption support between the two experimental groups to explore whether individuals were more likely to give priority to democratic values if they had low trust in government.

Constructing the Low Trust (LT) Instrument

To construct low trust in government as an exogenous variable and causally link it to democratic values, program effectiveness and program adoption acceptance, we randomized our participants into either the control or LT treatment group. As aforementioned, scholarship on studying trust as a dependent variable is more common than studies that use it as an explanatory variable, because of its endogeneity in traditional survey methods. The use of self-reported trust as a covariate in regression models is suspected of producing common source bias and reverse causality issues, which can weaken the causal inference between trust and the dependent variable of interest (Meier and O'Toole 2012; Peyton 2020; Van de Walle

and Bouckaert 2003). To overcome this issue, we employed a novel identification strategy to measure trust. Participants in the LT treatment group received negative information cues about the local government, while participants in the control group received no information about the local government (Peyton 2020). We then asked all participants to rate their trust toward American local governments by staking out a position on a $0 - 100$ slide bar ($0 =$ "definitely not", $100 =$ "definitely yes") that corresponds to their level of trust in government. We involved this randomized trust condition (coded 1 for LT group, 0 for control group) as the exogenous variable in regression models.

The negative information cues correspond to the 3-factors theoretical concepts of trust: competency, commitment, and honesty (Grimmelikhuijsen et al. 2013; Mayer et al. 1995). Accordingly, we define low competency as government's inability to delivery services, low commitment as public nonconfidence in government's intention, and dishonesty as the government's unethical behaviors. We carefully constructed these information cues to avoid potential ethical issues. All information cues were borrowed from real world reports with credible sources (summary in Table 1 and detailed presentation in Appendix B), and there is no deception in them. Moreover, we included a debriefing at the end of the survey to clarify the purpose of this study to the participants.

Table 1: Negative Information Cues of American Local Governments

Factors of low trust	Information delivered	Source
Low competency:	local government employees have low engagement rates in their work	Gallup (2017)
Low commitment:	American citizens perceive little confidence for elected officials to act in the public's interests	Pew Center (2018)
Dishonesty:	Local governments' corruption statistics	Harvard Political Review (2018)

In addition, such priming manipulation often raises issues related to experimenter demand effects, which occurs when subjects infer the experimental purpose and respond in a way to help researchers confirm their hypotheses (Mummolo and Peterson 2019). We address this issue with the following rationales. First, the experiment did not measure participants' program adoption attitudes right after the LT treatment. Rather, participants received the

LT treatment, went through the conjoint tasks and received the dependent variable questions below each task. This process serves as a filter to reduce participants' memory attention on the negative information cues (Druckman and Leeper 2012). Second, the conjoint experiment design itself is an effective tool to reduce demand effect by its information-rich and multiple tasks environment (Hainmueller et al. 2014; Mummolo and Peterson 2019). We discuss the mechanisms of the conjoint experiment in the next section. Finally, evidence indicates that MTurk respondents are less susceptible to experimenters than other more compliant subjects such as a representative sample or students in the lab (Mummolo and Peterson 2019; Peyton 2020).

Conjoint Analysis

We combined the LT instrument with a conjoint experiment. After asking the trust question, we presented four pairs of hypothetical local sustainability project profiles and asked our participants in each pair to indicate their support for the projects' adoption by moving two $0-100$ slide bars (0 = totally dislike, 100 = totally favor) and choose their preferred profile out of the two profiles offered. We employed the rating scale as our main dependent variable in our analysis, which is common in other environmental policy conjoint studies (Dermont 2019; Rinscheid and Wüstenhagen 2019; Stokes and Warshaw 2017). We rescaled the continuous rating variable into 1 if the rating was above 50 and 0 otherwise (Hainmueller et al. 2014), which indicated the probability of supporting project adoption[1]. This strategy allows us to dichotomize project adoption support into either a positive or negative attitude, which simplifies the interpretation of the marginal effect and identifies individuals with indifferent attitudes[2] (Bansak et al. 2019; Beiser-McGrath and Bernauer

[1]We also compared the rescaled rating results with the continuous ratings and choice measurements as a robustness check in the following section. Overall, the rescaled dummy variable and the continuous rating variable produced similar results.

[2]If a subject accepts or rejects both project profiles in a pair conjoint profile evaluation task, this subject has an indifferent attitude toward both profiles. For example, A participant rated project A 80 score and project B 83 score. This participant viewed both projects with positive attitudes, thus his or her response in this pair is indifferent.

2019; Rinscheid and Wüstenhagen 2019).

Project profiles were carried out by adapting information from the Solar Energy Industries Association (2017) national solar school report. We nested both democratic values and effectiveness attributes into each project profile. Democratic value attributes are composed by inclusiveness and openness; effectiveness attributes contained economic and environmental dimensions. Table 2 shows our conjoint attributes and possible components (Appendix B gives an example of the conjoint task interface). We used decision-making involvement and implementation transparency to separately reflect the concepts of inclusiveness and openness. High inclusiveness meant that diverse local communities can voice their interests in project decisions; high openness reflected that the implementation information is accessible to the public. Performance attributes were presented through high and low outcomes.

Table 2: Attributes for Project Profile in Conjoint Experiment

Attributes	Components
Democratic values	
Inclusiveness	(1) Government agencies
(Decision-making involves)	(2) Diverse local communities
Openness	(1) Government internal review
(Implementation information is available to)	(2) The public
Program effectiveness	
Environmental indicator	(1) 715 tons
(Reduce annual CO2 emission)	(2) 320 tons
Economic indicator	(1) $720k
(Save schools' annual expenses)	(2) $359k

All attributes were independently randomized in every profile comparison task, so every component in each attribute was an independent treatment in a between and within subject design (Hainmueller et al. 2014). In addition, we randomized the order of attributes across participants and fixed them within participants to avoid order effects and reduce confusion (Jilke and Tummers 2018). Overall, the benefits of the conjoint design are twofold. First, it effectively identifies what project attributes individuals prioritize in profile evaluations (Hainmueller et al. 2014). Second, it gains realism and reduces social desirability responses from the confronting information environment (Bansak et al. 2019; Horiuchi et al.

2020).

Sample

In total we recruited 1,323 participants from the Amazon Mechanical Turk (MTurk) platform. After removing incomplete responses and participants who used either virtual private servers (VPS) or answered the survey from outside of the United States, the final sample size was 1,154 (49% female, 75% whites, Mage = 39). In the conjoint comparison setting, the total observation was 9,232 project profiles ($1154 \times 2 \times 4$). Appendix C summarizes the full information of the sample characteristics and the p-value (t-test) for the randomization check. Our sample was generally balanced across experimental groups except for liberals and conservatives ($p < 0.05$). We had 44% liberals and 31% conservatives in the control group, but these numbers respectively changed to 51% and 23% in the LT group. To diagnose any confounding effect from the ideology unbalance, we report subgroup analysis in the results part and covariate adjusted models in Appendix D.

Other than the imbalance between different ideological groups, using a sample from MTurk also raises concerns of representation (Stritch et al. 2017). We partially overcome this problem by reweighting the outcome variable using American population distribution in the robustness check. In general, MTurk is a suitable platform for our experiment, since we target the general public and not a special sample such as public managers. In addition, MTurk is a cost-effective tool for scholars to refine variable measurement, such as the novel identification we implemented on constructing LT (Stritch et al. 2017).

Experimental Procedure

Figure 2 lays out a diagram of the experimental procedure. Before entering any intervention stage, we asked participants their ideology inclination on a 5-point scale from "very liberal" to "very conservative". After that, we randomly assigned participants into the LT treatment group and control group. Then, we asked participants to rate their trust in

American local government. Next, we provided the "solar school" vignette. After informing the reader about the purposes of solar schools, we asked all participants to assume that government is about to implement this project in their own school district. We then asked them to complete four pairs of comparisons for potential solar school project proposals. After the profile comparison tasks, we included a manipulation check question to test any non-compliance for the LT treatment, and an attention test to detect distraction or random selection behaviors. Demographic questions were asked at the end of the survey. We report the full survey protocol in Appendix B.

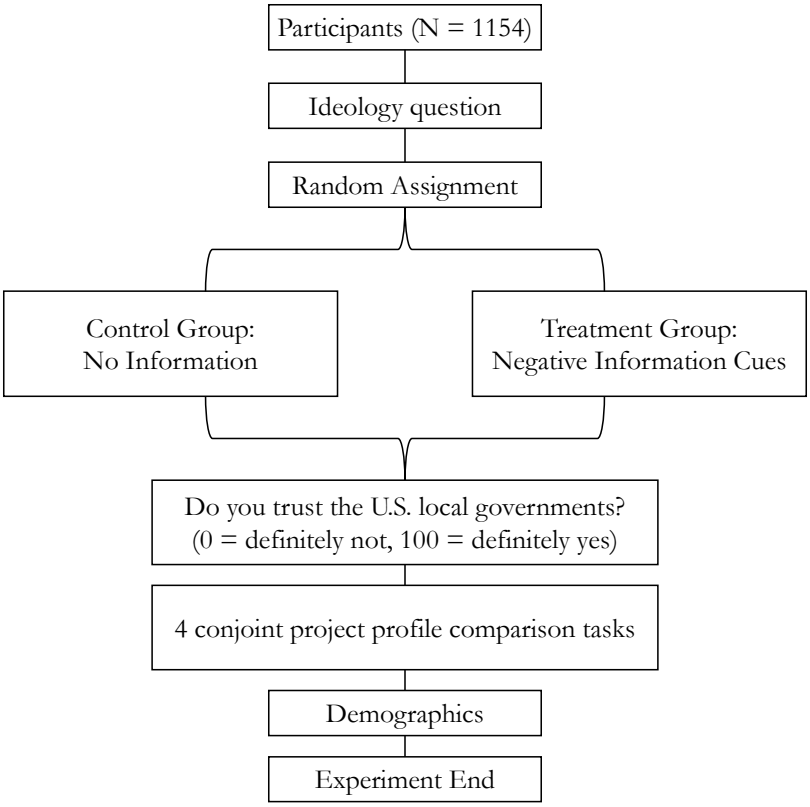

Figure 2: Experimental Procedure

Empirical Analysis

Descriptive Summary

We begin with an initial analysis of the LT instrument. Figure 3 shows the trust distributions for both experimental groups. The mean trust of the control and LT groups are respectively 57.42 ($S.D. = 23.85$) and 42.91 ($S.D. = 24.25$). The negative information cues result in a reduction of 14.25 points ($S.E. = 1.42$, $p = 0.00$) in the participants' trust in U.S. local governments, so our LT instrument is validated.

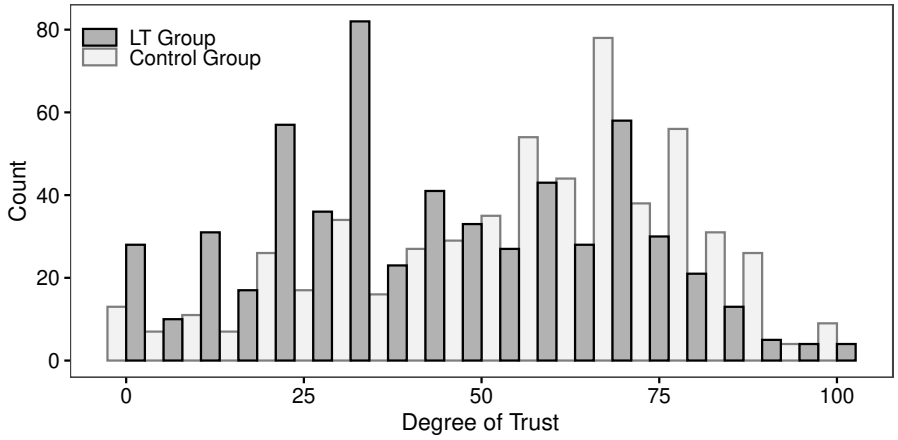

Figure 3: Distribution of Trust in U.S. Local Governments

Table 3 reports the descriptive summary of project support answers. We used marginal means (MM) to identify the probability of supporting a project adoption when it contained a particular attribute component (Jankowski et al. 2020; Leeper et al. 2020). Our participants prevalently hold positive opinions toward solar school projects (the supporting rate for each attribute component is higher than 0.5), but variations among different components are noticeable. For example, 83% of participants in the control group support the solar school project if its decision-making involves diverse local communities, but only 79% of them support a project if its decision-making involves government agencies. In the next section, we interpret the differences between components in each attribute to test our hypotheses.

Table 3: Marginal Mean Estimates for Project Adoption Support

	Control Group ($N = 4,496$)			LT Group ($N = 4,736$)		
Attribute Component	Est.	SE	95% C.I.	Est.	SE	95% C.I.
Decision-making involves:						
Government agencies	0.787	0.009	(0.770, 0.804)	0.719	0.009	(0.701, 0.737)
Local communities	0.833	0.008	(0.818, 0.849)	0.816	0.008	(0.800, 0.832)
Implementation information is available to:						
Government internal review	0.768	0.009	(0.750, 0.786)	0.719	0.009	(0.701, 0.737)
The public	0.848	0.007	(0.833, 0.862)	0.815	0.008	(0.799, 0.831)
Reduce annual CO2 emission:						
320 tons	0.772	0.009	(0.754, 0.789)	0.728	0.009	(0.711, 0.746)
715 tons	0.850	0.008	(0.835, 0.865)	0.806	0.008	(0.790, 0.822)
Save schools' annual expenses:						
$359K	0.804	0.009	(0.787, 0.821)	0.763	0.009	(0.745, 0.780)
$720K	0.815	0.008	(0.799, 0.831)	0.771	0.009	(0.754, 0.788)

Note: Standard errors (S.E.) are clustered by individual. 95% confidence intervals are in brackets.

Main Findings

The Average Marginal Component Effect (AMCE) was our primary identification strategy, which predicted the change in average project support when switching one attribute component for another (Hainmueller et al. 2014). For example, we compared the marginal effect on project support between "government agencies" and "diverse local communities", holding all other possible attribute components at average levels. Since our attribute components were fully randomized, the AMCEs were coefficients from a benchmark linear probability model. To control potential non-independence between profile ratings from the same participant, we clustered standard errors by individuals.

Figure 4 displays the overall probability of supporting solar school projects in both the control and LT groups. We begin by assessing AMCEs in the control group to interpret project support by each attribute, because these participants reflect general opinions toward each attribute without the LT priming intervention. Supporting **H1a**, inclusiveness matters in project adoption support, as individuals are 5% ($S.E. = 0.01$, $p = 0.00$) more likely to support project adoption when it involves diverse local communities rather than government

agencies in the decision-making process. We also find strong support for **H1b**. With regard to openness, individuals are 8% ($S.E. = 0.01$, $p = 0.00$) more likely to support project adoption when its implementation information is available to the public rather than to the government internal review.

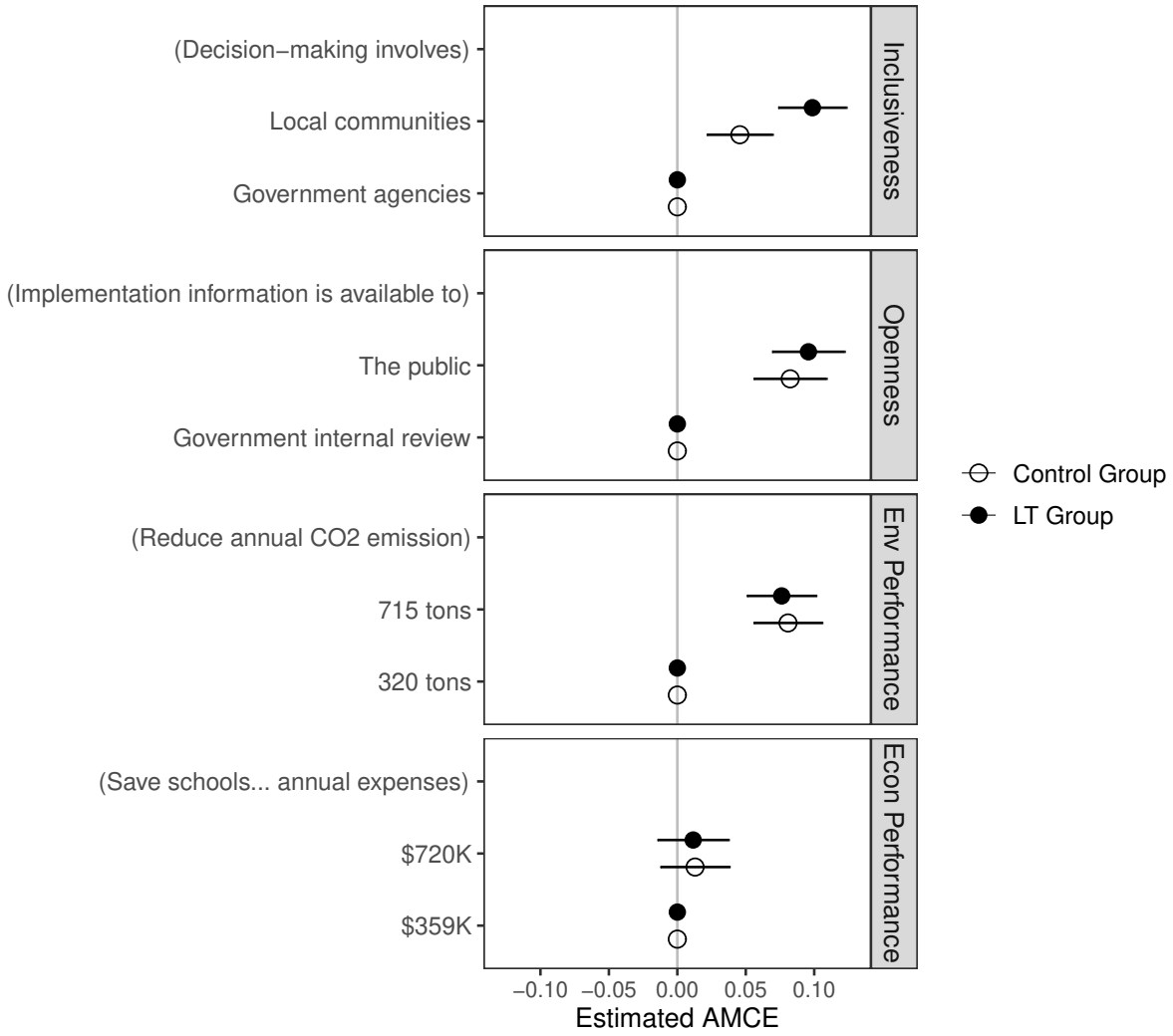

Figure 4: Public Support Change for Project Adoption
Note: Bars are 95% confidence intervals.

Turning to program effectiveness, our participants have strong preferences for better effectiveness performance in the environmental dimension (supporting **H2a**). Improving the local annual carbon emission significantly increases the probability of project adoption support by 8% ($S.E. = 0.01$, $p = 0.00$). However, our participants are insensitive to the

economic indicator, as saving more school expenses has a null effect on project adoption support. Our sample's lean liberal condition (48% liberals and 27% conservatives) may correlate with this pro-environmental performance result. Therefore, we report subgroup analyses results in the next section to explore whether liberals and conservatives received heterogenous treatment effects.

When comparing effect sizes between democratic values and effectiveness attributes, we reject **H2b**. Democratic values and program effectiveness have similar explanatory power to predict project adoption support. More specifically, the effect sizes between openness and environmental performance are nearly identical. This finding reveals that citizens do not only consider program outcomes in their program evaluation; rather, both the process characteristics and outcomes of the program are equivalently important.

We next examine the differences in AMCE between the two experimental groups for all attributes (Figure 5). The AMCE results of the control and LT groups are similar. Citizens' preferences on both high program effectiveness measures are not moderated by the low trust condition (rejecting **H3a**), which suggest that low trust citizens do not necessarily discredit the accountability of public program's effectiveness information. When examining the democratic values, openness has little impact between the control and LT groups (rejecting **H3b**). However, the effect of inclusiveness increases the probability of project adoption support by 10% in the LT treatment group ($S.E. = 0.01$, $p = 0.00$). Compared to the control group, the LT instrument shows a 5% ($S.E. = 0.02$, $p = 0.00$) increase in the effect size of inclusiveness, which indicates that if citizens do not trust in local governments, they rely more on decision-making inclusiveness to evaluate sustainability programs (supporting **H3c**).

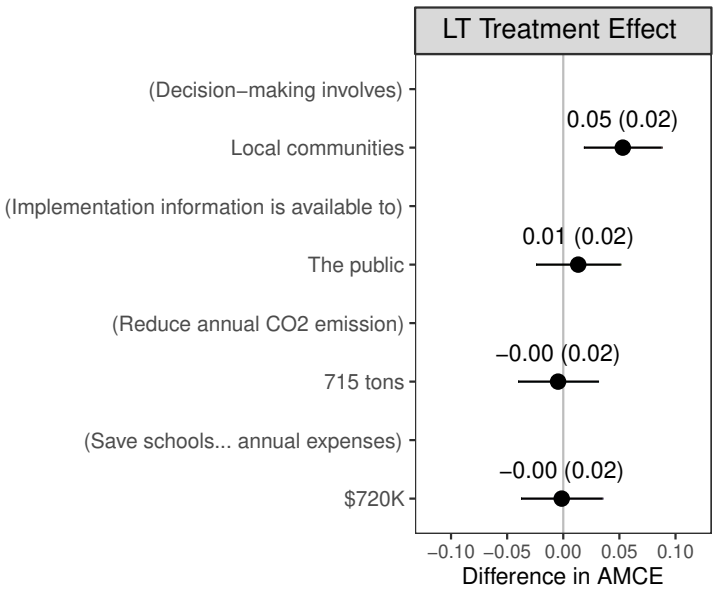

Figure 5: The Low Trust Treatment Effect

Note: Bars are 95% confidence intervals, standard errors are in brackets.

Liberal and Conservative Subgroups

Regarding any potential heterogenous effects between the two ideology groups, we ran AMCE and differences in AMCE analyses for both liberals and conservatives. Overall, these analyses demonstrate similar results in magnitudes and significance levels. The upper panel in Figure 6 shows that liberals and conservatives both champion inclusiveness, openness, and good environmental performance. Economic performance is insensitive across both ideological groups. Therefore, the pro-environmental performance result is not solely attributed to preferences held by liberals. The lower panel in Figure 6 shows that both ideological groups received similar magnitudes of LT treatment effects. The effect sizes of inclusiveness in project support are increased by 6% ($S.E. = 0.02$, $p = 0.01$) for liberals and 5% ($S.E. = 0.04$, $p = 0.19$) for conservatives. In summary, the heterogeneity of preferences based on political ideology is much less obvious in this study than in some others.

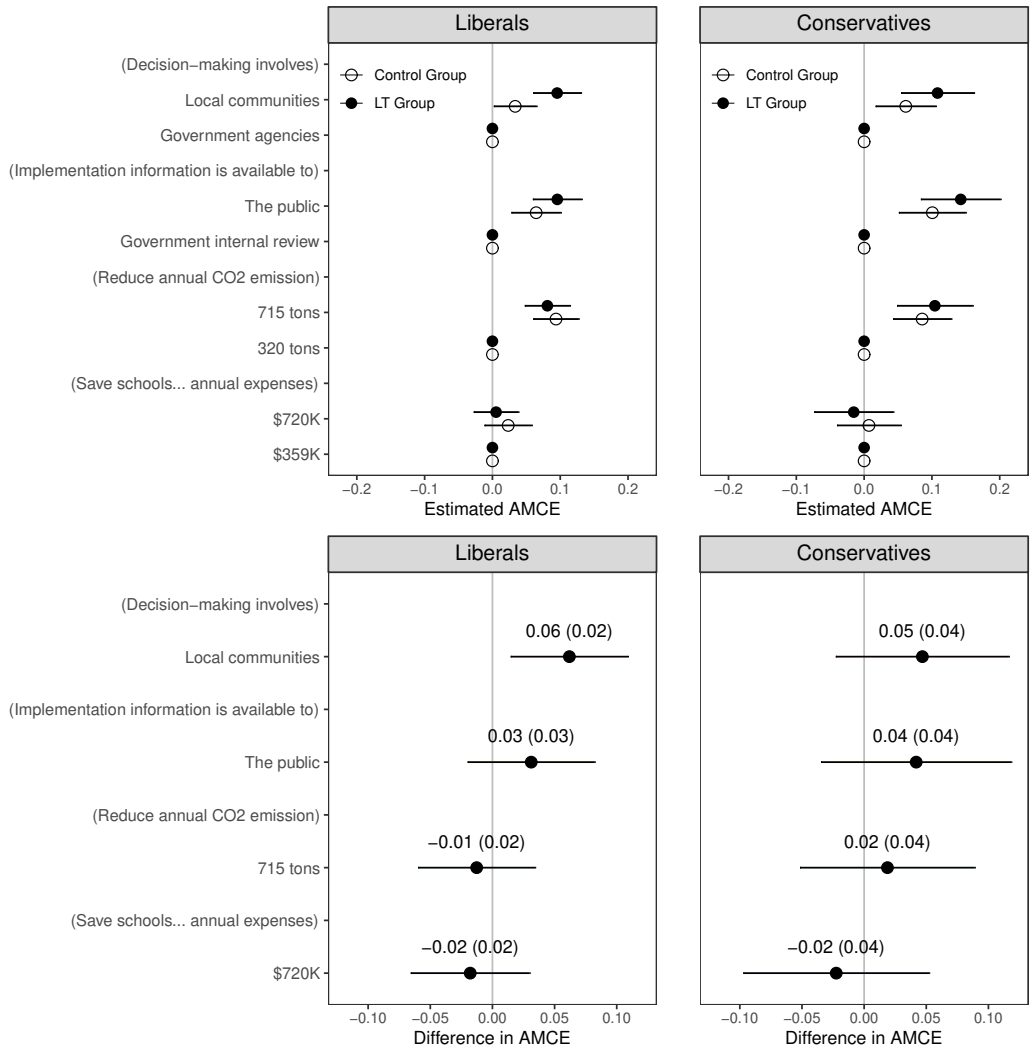

Figure 6: Heterogenous Treatment Effects by Ideology Subgroups
Note: Bars are 95% confidence intervals, standard errors are in brackets.

Robustness Checks

The supplementary information reports additional analyses, which all confirm the robustness of our findings. Crucially, we address the liberal-conservative randomization unbalanced problem. Comparing the unadjusted AMCE results with covariate adjustment solutions in linear models, we find similar treatment effects (Appendix D). We further diagnose any ideological heterogenous effect by comparing trust distributions between liberals and conservatives in both the control and LT groups (Appendix E). We do not find salient differences in their trust distributions. Based on these two analyses, there is no evidence that

political ideology has a confounding effect in our study's causal identification. In addition, we reweighted our sample on US population distribution of ideology with the iterative proportional fitting technique to gain external validity (Bergquist et al. 2020). The re-weighted results are consistent with our main findings (Appendix F).

Next, we test the sensitivity of our rating dependent variable by estimating models using the continuous rating and the forced choice (Appendix G). Overall, both the continuous rating and forced choice models output similar results as the rescaled rating dummy variable. However, different from the rating models, participants do not change their strategies to choose a project even when conditioned with low trust: democratic values and program effectiveness are equally significant under both the control and low trust conditions. The mechanisms of making a choice were different when subjects had to make a forced choice and rating. When choosing a preferred profile out of each pair, participants may not necessarily hold negative attitudes toward the other project. Therefore, the forced choice measurement may bias the results, because some profiles were coded as 0 but subjects expressed positive attitudes about them and vice versa. The bias was even stronger when we examined the difference in AMCEs between the two experimental groups, because a portion of the attitude change failed to be recorded[3]. As an alternative, both the rating dummy and continuous measures allowed participants to express positive/negative attitudes towards every project profile without constraints. Thus, we were able to accurately observe treatment effects from LT. As Hainmueller et al. (2014, 17) suggest, "The value of employing ratings, forced choices, or other response options will be domain-specific." In some contexts, such as political

[3]For example, project A had stronger program effectiveness than B, and both had strong democratic values. A subject in the control group rated 80 to the project A and 40 to the project B. Accordingly, she or he chose A rather than B. So, we coded: continuous rating: $A = 80$ and $B = 40$; rating dummy: $A = 1$ and $B = 0$; forced choice: $A = 1$ and $B = 0$.

Another subject (we assume these two subjects were the same person by randomization) in the LT treatment group rated 80 to the project A and 70 to the project B. Accordingly, she or he chose A rather than B. So, we coded: continuous rating: A=80 and B=70; rating dummy: A=1 and B=1; forced choice: A=1 and B=0. In this situation, the subject held the same attitude to project A but changed her or his opinion on the project B. In the continuous rating, this change was $B_\Delta = 70 - 40 = 30$; in the rating dummy, this change was $B_\Delta = 1 - 0 = 1$; in the forced choice, this change was $B_\Delta = 0 - 0 = 0$.

In this example, we clearly see that the forced choice method fails to record a portion of survey participants' attitude changes.

candidate selection, researchers prefer a forced choice answer to simulate voter behaviors. However, citizens are not usually "forced" to choose local project implementation in the environmental policy context. Therefore, results from rating outcomes are more robust to reality in our study.

Furthermore, we dropped 269 (23%) participants who failed the manipulation check or attention test. This practice restricted the analyses to the sample that understood the experimental intervention and chose more cautiously (Aronow et al. 2019). The AMCE and difference in AMCE results from this sample are consistent with those of the full sample (Appendix H). It is worth noting that the LT effect not only triggers participants in this smaller sample to focus 6% ($S.E. = 0.02$, $p = 0.00$) more on inclusiveness in project adoption support, but also slightly increases the importance of openness by 4% ($S.E. = 0.02$, $p = 0.09$) over the full sample.

Conclusion and Discussion

Theoretical Implications

The theoretical connection between democratic values and program effectiveness as the means and ends in shaping public evaluation of programs has been empirically unknown. Therefore, this study attempts to build a model to compare democratic values and program effectiveness by asking citizens to evaluate a public program. Our findings indicate that both democratic values and program effectiveness are equivalently compelling for predicting public program support. Our results contradict conventional knowledge in the NPM approach; individuals are not always outcome-driven in judging public programs. Values inherent in government's actions are also prominent in people's consideration. In addition, we successfully induced a situation in which respondents were primed to have low trust in local governments. Under such conditions, we argued that respondents might pay more attention to democratic values, such as decision-making inclusiveness. Therefore, the NPS approach

to underline democratic values is not only a normative statement, but also a practical tool to rebuild the relationship between citizens and the government. Our results provide three main contributions for public administration theories on performance management and incorporation of values in public program design, described in the following paragraphs.

First, our empirical findings justify the normative argument of democratic values. Openness and inclusiveness are meaningful and indispensable values for citizens, even when they have to trade off other information such as environmental and economic effectiveness. Therefore, public opinion is not only a function of favorable outcomes, but also the results of citizen-state interaction (Wichowsky and Moynihan 2008). Our results align with the policy feedback theory, and challenge Esaiasson et al.'s (2019) and Ruder and Woods's (2020) arguments that increasing the visibility of democratic values does not necessarily increase the legitimacy of public programs. Our study's results demonstrate that citizens care about whether the public program decision-making process is inclusive to diverse community members, and whether the implementation process is open to the public. Accordingly, we argue that governments should promote the visibility of democratic values. As Denhardt and Denhardt (2015, 665) suggest: "public service should focus on creating opportunities for citizenship by forging trusting relationships with members of the public and working with them to define public problems, develop alternatives, and implement solutions."

Second, associating program processes and outcomes with democratic values may be a remedy to rebuild citizens' confidence in public program. Although citizens' prevalent low trust in government has been associated with a decrease in public program support, this decrease seems to be moderated in our study by the program's inclusive decision-making process. As Cooper et al. (2008) mention in their research between public trust and local zoning, public trust and local governance are reciprocal. Participatory governance, inclusive institutions and civic participation "...demonstrate the values of public participation for democratic governance", which can relieve tensions between citizens and government (Cooper et al. 2008, 465). Therefore, public managers should deliberate with citizens to find out the

reasons behind their mistrust. Citizens then move beyond the roles of constituents in election cycles or customers in receiving government services, and become public goods' co-producers who solve problems with government managers to achieve shared goals for society (Bryson et al. 2014).

Third, we are not suggesting managers replace performance management frameworks with democratic values alone in governing public programs. Instead, our findings correspond to the NPS approach and show that program effectiveness is an essential element for a public program to increase citizens' support, regardless of whether citizens have high or low trust in government. Denhardt and Denhardt (2015, 669) note that public managers may need to understand: "how public policies and programs influence citizenship outcomes such as political efficacy, social trust, and civic engagement." Therefore, public managers and local governments should effectively combine democratic values and effectiveness when implementing public programs and when communicating program information with residents. Likewise, public policy and management scholars should conduct more research about integrating performance management and democratic values in the future. Table 4 summarizes our empirical evidence related to our seven hypotheses; the findings are considered and discussed in our three major contributions.

Table 4: Summary of the Hypotheses and Results of the Experimental Tests

Effect on Program Adoption Support	Expected Relationship	Findings: Control Group	Findings: LT Group
H1a: Openness	Positive	Positive	Positive
H1b: Inclusiveness	Positive	Positive	Positive
H2a: Effectiveness	Positive	Positive	Positive
H2b: Effectiveness > Democratic Values	True	False	False
H3a: Low Trust → Effectiveness	Negative		Null
H3b: Low Trust → Openness	Positive		Null
H3c: Low Trust → Inclusiveness	Positive		Positive

Methodological Implications and Future Research

Other than the theoretical contributions just discussed, the current study also makes a methodological contribution to experimental public administration research. Our novel identification strategy of trust improves causality. Although subgroup analysis is frequently used in conjoint analysis, very few studies exogenously separate respondents' characteristics, and rerun the analysis to compare responses on that characteristic. Most subgroup differences in public administration and political science are endogenous that cannot be causally interpreted (Bansak et al. 2019). We use negative government information cues as an instrument to construct trust as an exogenous explanatory variable, which overrides this issue. This methodological innovation is not only useful in future conjoint experiment, but also provides more opportunities for scholars who intend to use trust as an explanatory variable to identify its causal relations with their outcomes of interest.

While this study highlights democratic values and program effectiveness to provide a more comprehensive understanding for citizens' public program perception, future studies are required to improve its limitations. First, the effects of democratic values on program support are likely to be context-based (Ruder and Woods 2020). We recommend scholars extend studies on these complex relationships between values and program effectiveness to other policies and governmental contexts to test the generalizability of our results, which are based solely on local school sustainability programs.

A related consideration is to demonstrate the external validity of our results with a more representative sample with a balanced ideological distribution. We also see the need to study the effects between democratic values and program effectiveness on citizen approval in other countries where there is lower antigovernment rhetoric than in the U.S..

Another limitation is that we only include four attributes in our conjoint design, which is simpler than many other conjoint experiments. Although we closely connect the attributes with our theories, this design is still simpler than many real policy environments. Therefore, we welcome other scholars to test the reliability of our design in a more complex

conjoint environment.

Finally, the conjoint design constrained us to present inclusiveness and openness in the simplest language (Bansak et al. 2019). We thus look forward to future studies presenting these two concepts in varying ways to see whether individuals have preferences based on different presentations. For example, citizens may have different perceptions between participating in a specific social justice conversation and a general resident meeting.

In summary, our contributions and limitations indicate that building democratic values requires the enduring efforts of citizens and managers in daily governance. We believe we should further advance our theoretical understanding of democratic values in scholarship on policy and management, and work to make citizen-state interaction unfettered in practice.

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Supplemental Information

Contents

Appendix A Pre-registration Report

Hypotheses
Democratic value hypotheses:
H1a: In policy evaluation, individuals prefer the policy to involve diverse local communities rather than government agencies in the decision-making process.
H1b: In policy evaluation, individuals prefer the policy implementation information available to the public rather than the government internal review.

Performance hypotheses:
H2a: In policy evaluation, Individuals prefer higher rather than lower performance.
H2b: Performance information will have larger effect sizes than democratic values for explaining individuals' policy preferences.

Trust hypotheses:
H3a: The positive effects of favorable outcomes on individuals' policy preferences would be moderated when they have low trust in government.
H3b: The positive effects of democratic values on individuals' policy preferences would be increased when they have low trust in government.

Have any data been collected for this study already?
No, no data have been collected for this study yet.

What's the main question being asked or hypothesis being tested in this study?
In this survey experiment, we ask two major research questions:

i Whether performance information or democratic values display larger explanatory power to citizens' policy preferences

ii Would their explanatory powers change when people have low trust in government?

Describe the key dependent variable(s) specifying how they will be measured.
In this study, we have two main dependent variables.

i Choice: we will code choice as a dummy variable as 1 or 0, based on whether the participants select the policy profile.

ii Rating: We will ask participants to rate each profile from 0 to 100.

How many and which conditions will participants be assigned to?
First, we will randomize participants in two groups: control group and the low trust (LT) group. We construct the LT instrument with three factors in the theoretical concept of trust:

ability, commitment, and honesty (Grimmelikhuijsen et al. 2013; Mayer et al. 1995). Three pieces of negative government information from real news or reports will be delivered to the LT group:

i Local government employees have low engagement rates in their works (low ability).

ii American citizens perceive little confidence to elected officials in acting public interests (low commitment).

iii local corruption information (dishonesty).

Then, we ask both control and treatment group participants: do you trust U.S local governments (from 0 to 100 scale)? Next, we employ a choice-based conjoint design to obtain a more comprehensive picture of citizens' opinions on which solar school projects to accept. Our experiment puts respondents in the position of local residents, asking them to make decisions between pairs of solar school project profiles. We require a choice between each pair of project profiles to simplify the decision task. In each project profile includes information (profile attributes) about decision-making involvement, implementation information availability, environmental performance, and economic performance. Every participant will complete 4 pairs of profile comparison tasks.

Specify exactly which analyses you will conduct to examine the main question/hypothesis.
Analyses will be based on the standard practices in the conjoint experimental design:

i Average Marginal Component Effect (AMCE).

ii Marginal Means (MM).

Any secondary analyses?
We will conduct subgroup analyses by participants' characteristics. In addition, we will reweight our sample on the U.S. population as a robustness check.

How many observations will be collected or what will determine the sample size? No need to justify decision, but be precise about exactly how the number will be determined.
We will stop data collection once 1,200 subjects have submitted a responses on MTurk. Deviations from this goal are entirely due to MTurk software and outside of our control.

Anything else you would like to pre-register? (e.g., data exclusions, variables collected for exploratory purposes, unusual analyses planned?)
Subjects' demographic information will be collected after they have answered the questions regarding key dependent variables. The information is collected for detecting the heterogeneity of the treatment effect and for the randomization balance check. Since we only recruit adult subjects in the U.S., VPN and proxy identifier will be applied at the beginning to filter out disqualified subjects.

Appendix B Survey Instrument

[Survey begin]

[VPN and Proxy Check]

[IRB Consent Form]

[Demographic: Ideology] When comes to social issues, I am...

- Very liberal
- Liberal
- Moderate
- Conservative
- Very conservative

[Low Trust instrument: Negative Information Cues]

[Control group] No information

[LT treatment group] In this section, you will read some facts about American local governments. Please read carefully.

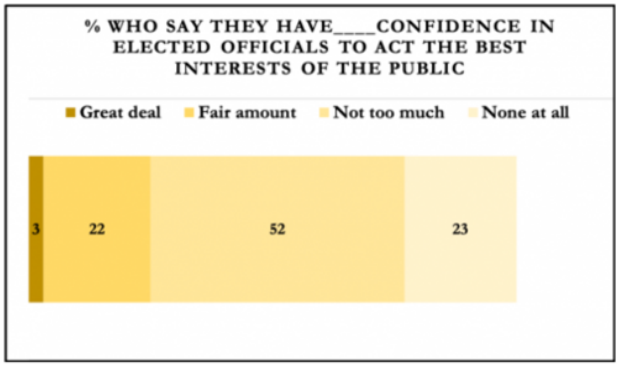
[Page1]

[Page2]

American people have little confidence in elected officials

According to Pew Center 2018 report,

Information source: https://news.gallup.com/opinion/gallup/210707/city-employees-not-engaged.aspx

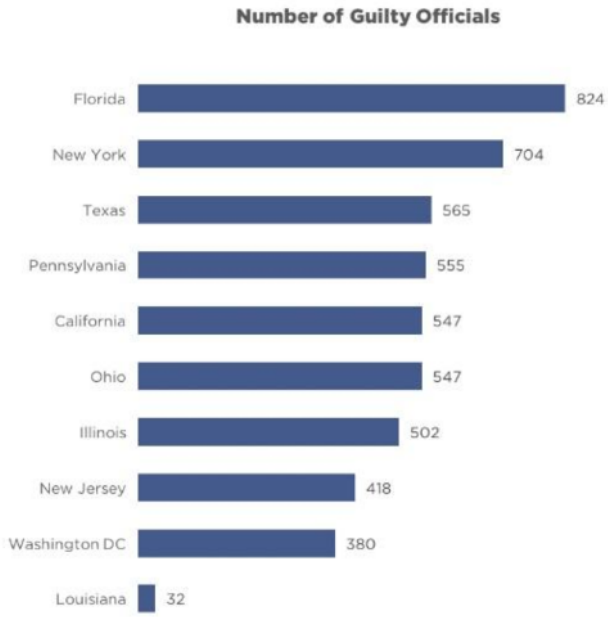


[Page3]

Local and state governments have **more corruptions** than we assumed

According to a recent report from HARVARD POLITICAL REVIEW, more than **20,000** public officials and private individuals were convicted for crimes related to corruption in the last two decades. The graph below shows 10 example states from the original report.

information source: **https://harvardpolitics.com/united-states/stealing-in-the-shadows-state-level-political-corruption/**



[Trust question] Do you trust the U.S. local governments? (Please move the slide between 0 and 100)

0 = Definitely not; 100 = Definitely yes
(Note: We asked this question for both the control and treatment groups.)

[Conjoint tasks] In this section, you will be asked some questions about your personal idea on solar projects in U.S. school districts.

Solar projects in U.S. Schools

Some of the school district governments in the U.S. are utilizing solar energy by installing solar PV (photo-voltaic) system on the school rooftops. Solar electricity saves schools' utility costs, reduces greenhouse gas emission, and provides teachers with a unique opportunity to teach concepts in science and technology.
Source: Brighter Future: A Study on Solar in U.S. Schools (2017) by Solar Energy Industries Association

[Example of a conjoint comparison task] Now, assume that a solar project will take place in your school district. You will get information of two possible projects for comparison in each page. Please indicate which project you prefer over the other.

In total, you are asked to make 4 comparisons.
Note: There is no right or wrong answer to any comparisons.
Please indicate which project you prefer:

This project:	Project A	Project B
Implementation information is available to	Public	Government internal review
Decision-making involves	Government agencies	Diverse local communities
Reduce annual CO2 emission (metric tons)	715 tons	320 tons
Save schools' annual expense	$720K	$720K

[DV: Choice]
[1] Project A [2] Project B

[DV: Rating] One a scale from 0 to 100, where 0 indicates that you do not like the project at all and 100 indicates that you are totally in favor of your government adopting the project, how would you rate each project?

Project A: 0 = Totally dislike 100 = Totally favor (Please move the slide between 0 and 100)
Project B: 0 = Totally dislike 100 = Totally favor (Please move the slide between 0 and 100)

[Manipulation check] Have you seen the information below from any previous part of this survey?

"Local and state government have more corruption than we assumed"

- Yes
- No

[Attention test] This is just to screen out random clicking. Please move the slide to the answer of the following question: $17 + 63 =$?

[Demographics]

Are you...

- Male
- Female

Do you consider yourself to be...

- White, not Hispanic or Latino
- Black, not Hispanic or Latino
- Hispanic or Latino
- Asian, not Hispanic or Latino
- Other

Your age: _____

What was your total household income before taxes during the past 12 months?

- Less than $25,000
- $25,000 to $34,999
- $35,000 to $49,999
- $50,000 to $74,999
- $75,000 to $99,999
- $100,000 to $149,999
- $150,000 or more

What is the highest level of education you have completed?

- Less than high school

- High school/GED
- Some college
- 2-year college degree
- 4-year college degree
- master degree
- doctoral degree
- Professional Degree (JD, MD)

[End of Survey]

Appendix C Characteristics of Sample and Randomization Check

	Overall		Control Group		LT Group		
	Frequency	%	Frequency	%	Frequency	%	P-value
Male	589	51	287	51	302	51	0.94
Female	563	49	273	49	290	49	0.94
liberal	547	48	245	44	302	51	0.01
Conservative	308	27	172	31	136	23	0.00
Moderate	280	24	135	24	145	25	0.83
No opinion	15	1	9	2	6	1	0.38
White	864	75	424	75	440	74	0.66
Black	68	6	28	5	40	7	0.20
Hispanic	62	5	27	5	35	6	0.40
Asian	134	12	70	12	64	11	0.38
Other	26	2	13	2	13	2	0.89
Age: 18-29	330	29	169	30	161	27	0.29
Age: 30-49	549	48	256	46	293	50	0.17
Age: 50 and older	266	23	133	24	133	23	0.64
Income: less than $25,000	142	12	66	12	76	13	0.57
Income: $25,000 to $74,999	583	51	279	50	304	52	0.54
Income: $75,000 or more	426	37	216	38	210	36	0.31
Education: college degree	727	63	362	64	365	62	0.33

Note: P-value is calculated from two sample t-test between the control and LT treatment group.

Appendix D Covariate Adjustment

	Control group	LT group	Unadjusted	Ideology adjustment	Full covariate adjustment
Inclusiveness	0.046***	0.099***	0.046***	0.044***	0.043***
	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)
Openness	0.082***	0.096***	0.082***	0.082***	0.085***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
High env perf	0.081***	0.076***	0.081***	0.080***	0.080***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
High econ perf	0.013	0.012	0.013	0.014	0.013
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Inclusiveness×LT			0.053**	0.054**	0.053**
			(0.018)	(0.018)	(0.018)
Openness×LT			0.013	0.011	0.007
			(0.019)	(0.019)	(0.019)
High env perf×LT			−0.005	−0.004	−0.003
			(0.018)	(0.018)	(0.018)
High econ perf×LT			−0.001	−0.002	−0.002
			(0.018)	(0.018)	(0.018)
LT treatment			−0.071*	−0.078**	−0.073**
			(0.028)	(0.028)	(0.028)
Constant	0.698***	0.627***	0.698***	0.666***	0.687***
	(0.020)	(0.020)	(0.020)	(0.023)	(0.047)
Ideology dummies	No	No	No	Yes	Yes
Full covariates	No	No	No	No	Yes
Observation	4,496	4,736	9,232	9,200	9,088
R^2	0.025	0.035	0.033	0.040	0.048

Note: The first two models are AMCEs for control and LT treatment groups. The third to fifth models are AMCEs for the full sample. All models are estimated by Ordinary Least Squares (OLS). Ideology dummies include dummy variables: liberals, moderates, conservatives, no opinions. Other covariates include gender, ethnicity dummies (White, Black, Hispanics, Asians, and other), age, education, and income. Standard errors are in brackets (clustered by individuals). *p < .05; **p < .01; ***p < .001

Appendix E Trust Distribution

For the variable trust, Figure E.1 shows no distributional difference between liberals and conservatives in both the control and LT treatment groups. Table E.1 reports descriptive statistics that correspond with Figure E.1. Table E.2 tests LT treatment effects for both ideology groups. Trust levels for conservatives and liberals both decreased about 14 degrees. Combining all these evidences, we have not detected heterogenous treatment effects of LT by ideology subgroups.

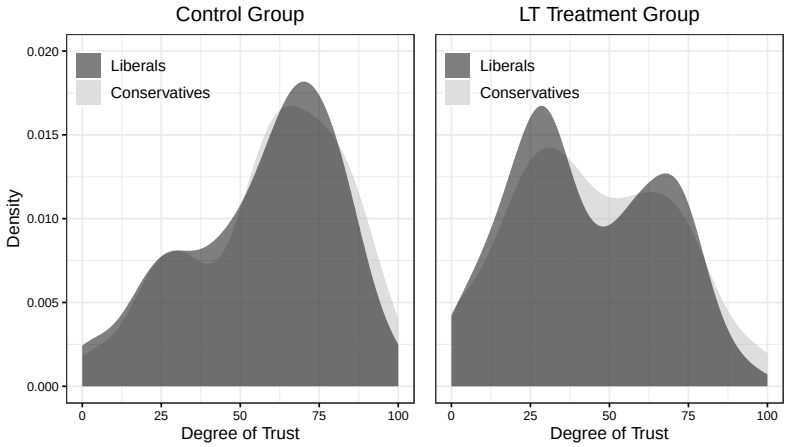


Figure E.1: Distribution of trust in U.S. local governments

Table E.1: Descriptive Summary of Trust in U.S. Local governments

Ideology	Treatment Group	N	Mean	S.D.	S.E.
Conservative	Control	172	59.12	24.14	1.84
Conservative	LT	136	44.77	25.09	2.15
Liberal	Control	245	56.74	24.07	1.54
Liberal	LT	301	42.90	23.81	1.37

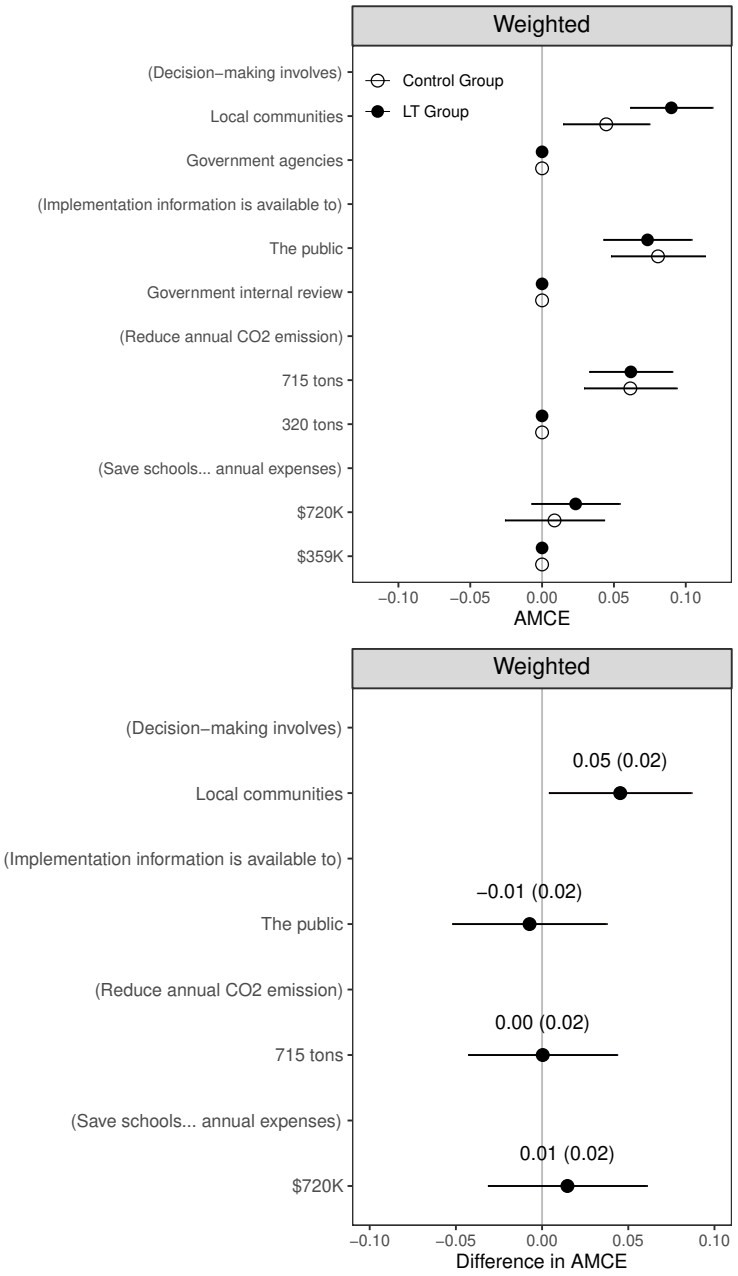
Table E.2: LT Treatment Effects on Trust

	Conservatives	Liberals
LT treatment	-14.344^{***}	-13.838^{***}
	(2.819)	(2.059)
Constant	59.116^{***}	56.739^{***}
	(1.873)	(1.529)
Observation	308	546
R^2	0.078	0.077

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Appendix F Re-weighted Data Analysis

We re-weighted our sample on US population distribution of ideology with the iterative proportional fitting technique to gain external validity (Bergquist et al. 2020). We referred to the (Gallup 2019) survey of American ideology (37% conservative, 24% liberal, and 35% moderate) to construct the reference population distribution. The re-weighted results are consistent with our main findings. Although our sample is not fully representative (24% conservative, 48% liberal, and 27% moderate), this additional analysis leads us to have little concern about the "liberal bias" from MTurk subjects in our experiment.



Appendix G Continuous Rating and Force Choice Models

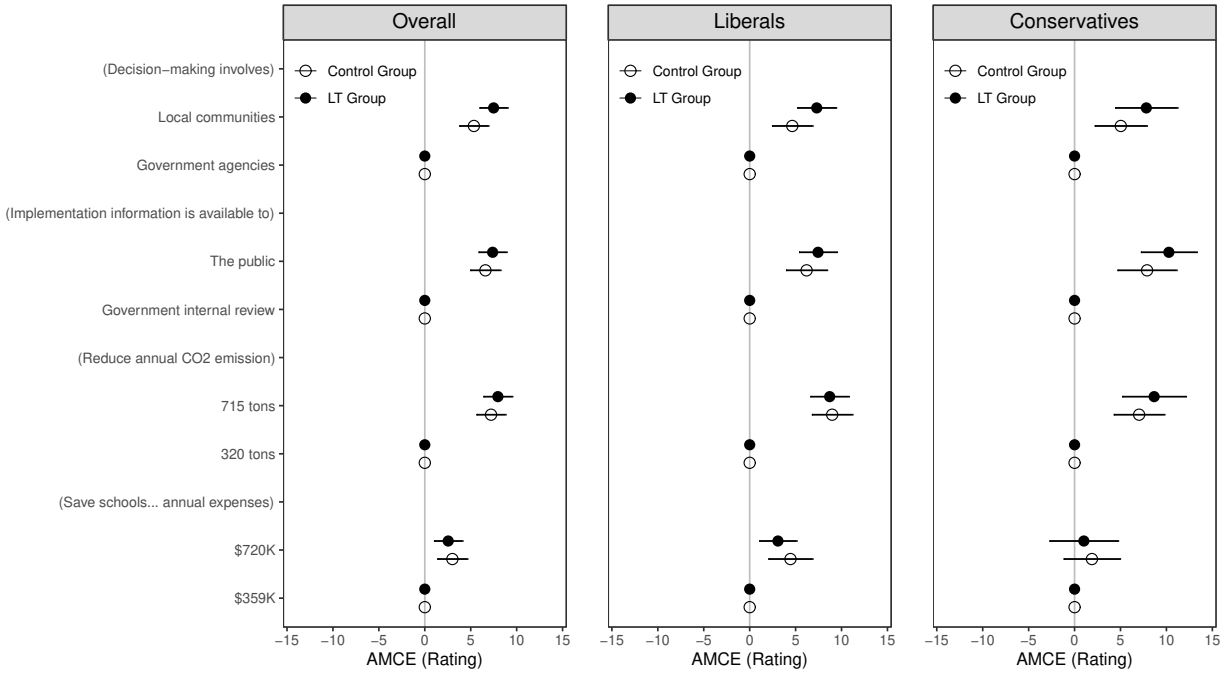


Figure G.1: AMCE Continuous Rating

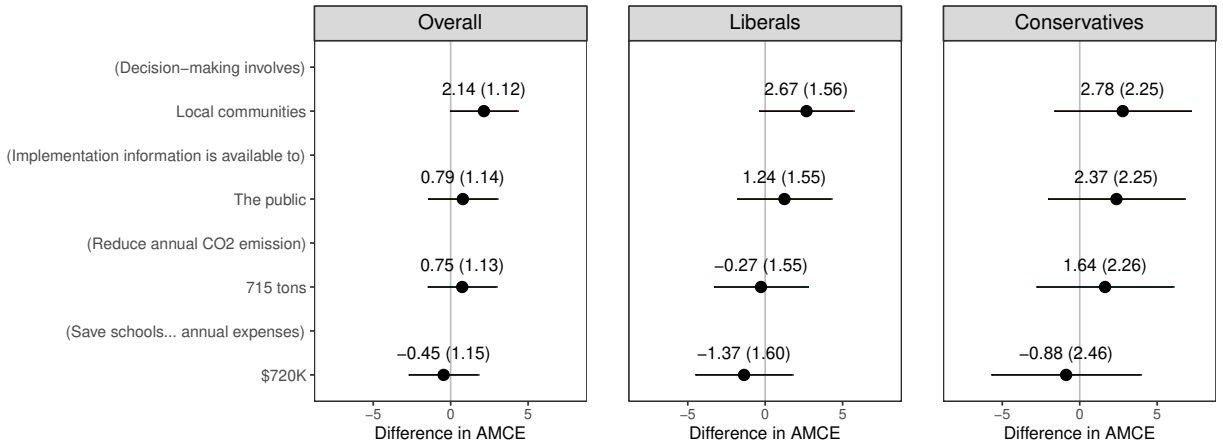


Figure G.2: Difference in AMCE Continuous Rating

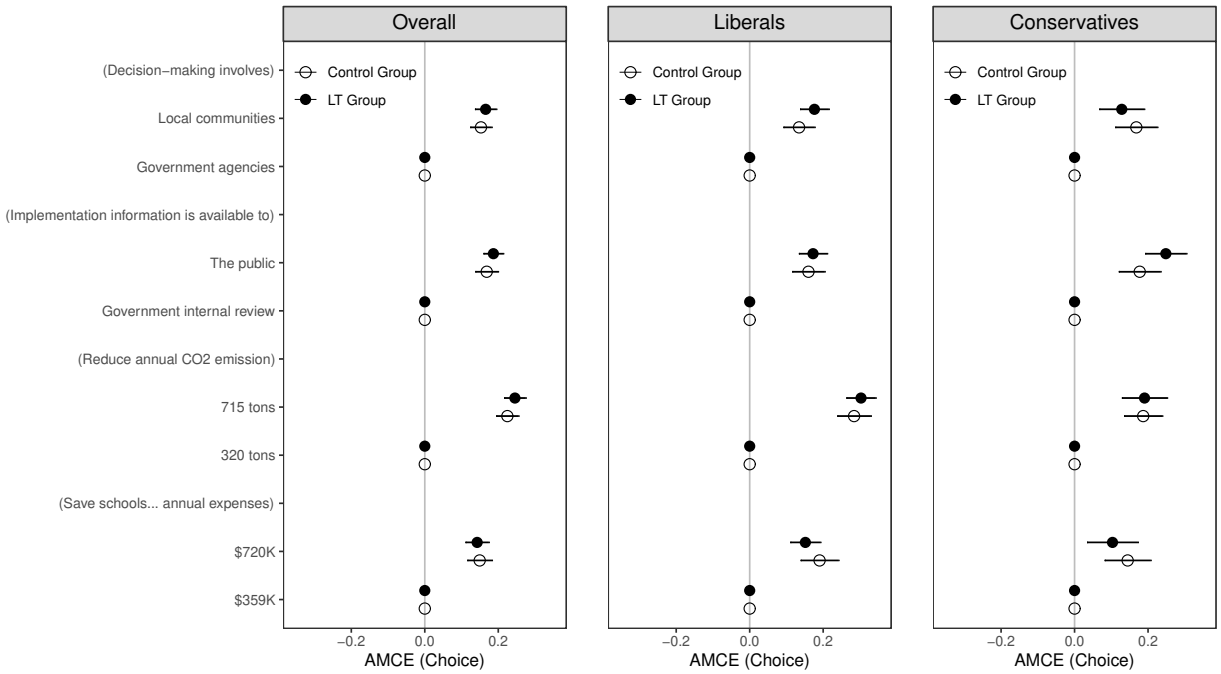


Figure G.3: AMCE Choice

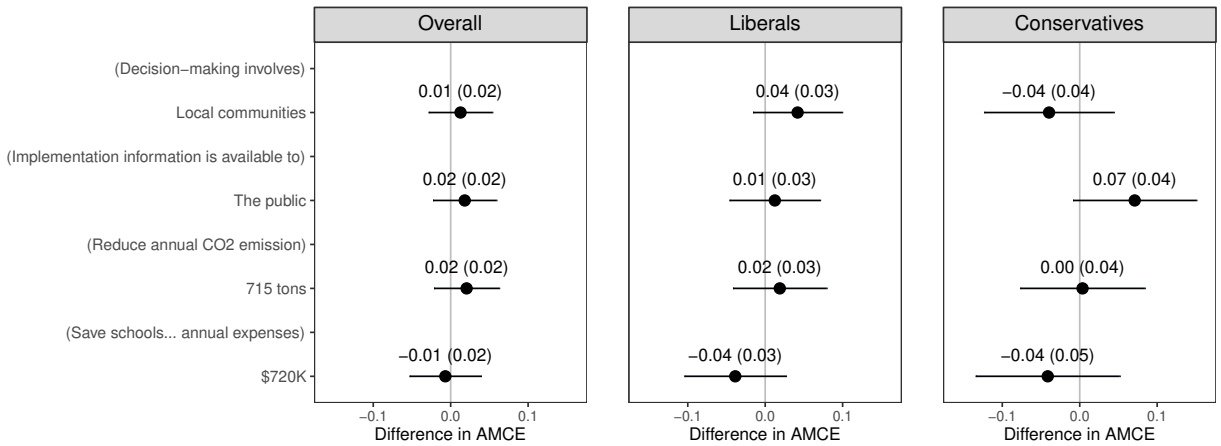


Figure G.4: Difference in AMCE Choice

Appendix H Manipulation Check and Attention Test Pass Sample