Fossil Fuel Communities Support Climate Policy Coupled with Just Transition Assistance

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Abstract

What are fossil fuel communities' preferences over the design of just transition assistance accompanying climate policy? This study conducted survey experiments at Appalachian county fairs to answer this question, overcoming barriers that have limited previous attempts to measure preferences in these crucial regions. Comparing the responses to a new national survey, there is a divergence in preferences for policies encouraging relocation, but there is convergence behind support for policies that reduce costs to fossil fuel workers. The study also finds that an intervention to provide information about coal's decline shifted preferences toward supporting the clean energy transition. Rather than public opinion being an immutable barrier to climate action, 66% of fossil fuel community residents would endorse climate policy if it were coupled with just transition assistance. Policy design and informational interventions could help to create climate coalitions, even in the places most affected by the clean energy transition.

Keywords: climate change; energy transition; policy preferences; compensation; transition assistance; fossil fuel communities; coal; oil and gas

Highlights:

- Conjoint survey experiments on just transition policy preferences.
- Fossil fuel communities and national public support funding worker pensions, healthcare, and income compensation.
- National public supports relocation, but fossil fuel communities do not.
- Informational interventions increase support for clean energy investments.
- A majority of fossil fuel community residents support climate policy with just transition policies.

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1 Introduction

The climate crisis requires a move away from fossil fuels (IPCC 2022). While this clean energy transition presents a formidable engineering challenge, especially for certain parts of the energy system and industrial applications, there exists technology to begin decarbonization (Davis et al. 2018; Pacala and Socolow 2004). Yet, governments often struggle to implement efficient greenhouse gas mitigation policies. Politics stand in the way, with opposition arising from businesses, workers, and communities adversely affected by the transition (Breetz, Mildenberger, and Stokes 2018; Colgan, Green, and Hale 2021; Geels et al. 2017; Mildenberger 2020).

To overcome these political barriers, policymakers worldwide are considering and implementing policies to smooth the costs of the transition for fossil fuel workers and their communities (Carley and Konisky 2020; Evans and Phelan 2016; Green and Gambhir 2020). These proposals, such as compensation for lost income, funding for worker pensions, and investments in retraining programs, may be necessary for a "just" transition that is equitable, sustainable, and legitimate (Harrahill and Douglas 2019; Healy and Barry 2017; Newell and Mulvaney 2013).[1] For example, the Inflation Reduction Act (IRA) in the United States includes provisions to incentivize green energy projects in fossil fuel communities (Raimi, Carley, and Konisky 2022). South Africa, Indonesia, and Vietnam have forged "Just Energy Transition Partnerships" with wealthy nations to finance policies addressing the social consequences of phasing out coal. Germany has also made investments to compensate and retrain workers displaced by its hard coal mining phase-out (Oei, Brauers, and Herpich 2020).

However, policymakers lack systematic knowledge about the preferences of fossil fuel communities over the design of just transition policies, let alone interventions that could

[1]There is debate over what a "just transition" entails (Banerjee and Schuitema 2022; Stevis and Felli 2015; Wang and Lo 2021). This article focuses on policies to assist fossil fuel communities but recognizes that a just transition also requires attention to climate, energy, and environmental justice (Dolšak and Prakash 2022; McCauley and Heffron 2018).

shift these preferences. There is qualitative research that provides rich insight into how workers are grappling with energy transitions (Carley, Evans, and Konisky 2018; Cha 2020; Cha et al. 2021; Haggerty et al. 2018). Survey-based research has also focused on particular dimensions of just transition policies such as jobs (Blankenship et al. 2022), worker assistance (Biven and Lindner 2023; Mayer 2018), income support (Gaikwad, Genovese, and Tingley 2022b), and beliefs about green industries (Crowe and Li 2020; Gazmararian and Tingley 2023). However, this research has not assessed a broader set of policy options and their trade-offs. While studies of the national public indicate that just transition policies enhance the social acceptability of the energy transition (Bergquist, Mildenberger, and Stokes 2020), these surveys include few—if any—individuals from energy communities.

Fossil fuel community attitudes about policy responses to the clean energy transition matter because they shape the electoral incentives that leaders have to support climate policy. For example, the economic costs of coal's decline in the United States caused voters in these regions to support political candidates opposed to the clean energy transition (Egli, Schmid, and Schmidt 2022; Gazmararian 2023), whereas, in Spanish coal-producing regions with negotiated just transition policies, coal communities backed political parties supportive of decarbonization (Bolet, Green, and Gonzalez-Eguino 2023).

Stakeholders also ought to understand what the communities most affected by the clean energy transition think so the policies governments implement are not only just but effective. Top-down policymaking can often neglect ground-up context that would improve the social acceptability of energy transition policies, even those that entail significant costs (Gazmararian and Tingley 2023). For example, if governments pursued initiatives like relocation assistance—what Anderson (2022) calls "suitcase" solutions—but there is little appetite among community members due to strong place-based attachments, these initiatives will likely fail. Systematic measurement of fossil fuel community preferences is needed to assess how just transition policies could be implemented effectively.

This study overcame a critical barrier that previously made researching public opinion

in fossil fuel communities challenging: survey error. Fossil fuel regions are systematically underrepresented in most samples (Appendix 1). Yet, the preferences of these communities likely diverge from the national public due to sharp regional economic, social, and political divides (Bell and York 2010; Cramer 2016; Gaikwad, Genovese, and Tingley 2022b; Gazmararian and Tingley 2023).

To reach this critical population, I collected samples at county fairs in a coal, oil, and gas-producing region of Appalachia.[2] This sampling strategy required considerable time and resources to execute and yielded a demonstrably more representative sample of fossil fuel communities than previous research (Appendix 3).

A conjoint experiment embedded in the survey measured preferences regarding the design of just transition assistance as part of a climate policy. This methodology has respondents pick between pairs of distinct policies, and from these choices, the researcher can estimate the causal effect of modifications in policy design on public support. Unlike past studies (e.g., Blankenship et al. 2022; Gaikwad, Genovese, and Tingley 2022b), the survey measured preferences over a broader range of transition assistance policies, which better captures the potential trade-offs in policy design. Further, this study also evaluated whether an intervention that provided information about the market-driven decline of coal could shift preferences to favor investments in clean energy workforce programs.

This research note presents two main findings. First, a comparison of fossil fuel community responses to a parallel national survey reveals a divergence in preference for place-based policies, with the national public favoring relocation assistance, whereas fossil fuel communities do not. In contrast, there is convergence behind support for policies that reduce costs to fossil fuel workers, such as funding for worker pensions and healthcare benefits, and income support during retraining. This is notable since a common view is that fossil fuel communities are ideologically averse to redistributive policies that entail government intervention

[2]Princeton University's Institutional Review Board approved the study (IRB Protocol #13942).

(e.g., Hochschild 2016), a pattern observed in research on social policy preferences more generally (e.g., Cramer 2016; Feldman and Zaller 1992; Rudolph and Evans 2005). Crucially, a majority (66%) of fossil fuel community residents would endorse climate policy if it were coupled with just transition assistance.

Second, I find that accurate information can shift preferences regarding clean energy investments. Information matters because over half of the fossil fuel community sample (53%) held the misconception that coal remains competitive, despite its market-driven decline due to cheap natural gas (Coglianese, Gerarden, and Stock 2020). However, an intervention that provided information about coal's decline shifted preferences toward greater support for investments in clean energy workforce programs that could diversify the local economy. Together, these findings indicate how policy design and informational campaigns could help to facilitate the energy transition, even in the places most affected by the move away from fossil fuels.

2 Research Design

2.1 Sampling

To study preferences over the design of just transition assistance policies, I conducted new surveys using samples of fossil fuel communities and the national public. First, in July–August 2021, I recruited participants at county fairs in an Appalachian region that primarily produces coal and natural gas (Ansolabehere et al. 2021). Appendix 2 describes the careful steps taken in recruitment to help minimize bias from this being a convenience sample. The survey reached 248 respondents who are more representative of fossil fuel communities than previous research on this critical population (Appendix 3). Further, the surveys were conducted in person, which enhances response quality compared to nonprobability online-based panels (Heerwegh and Loosveldt 2008), the primary alternative sampling strategy. Quality over quantity is critical, so the data are informative for scholars, policymakers, and

other stakeholders. Unrepresentative large samples can magnify bias (Bradley et al. 2021; Xiao-Li Meng 2018), leading to inaccurate inferences that this study's sampling strategy can better avoid.

In parallel, I collected a national sample of 1,001 Americans from an Internet-based panel, which is standard practice in survey research (Coppock and McClellan 2019). The nonprobability sample employed representative quotas for age, gender, race, ethnicity, education, and region. I fielded the survey in February–March 2023 (Apendix 4). A comparison of the fossil fuel community sample with this national sample allows for an analysis of the convergence and divergence of preferences regarding just transition policies.

2.2 Preference Measurement

To measure preferences, the surveys contained an experiment that had respondents choose between alternative just transition assistance proposals as part of a climate policy. Each respondent ranked multiple proposals that differed along crucial dimensions for how transition assistance could be designed (Appendix 6 contains an example). In the fossil fuel community sample, each respondent made 6 selections between 12 proposals, amounting to 2,974 policy comparisons. In the national sample, each respondent made 5 choices, for a total of 10,010 ranked transition assistance proposals.

From these choices, the researcher can estimate the causal effect of a change in a policy's design on the probability of public support. This conjoint methodology is a robust and externally valid technique for measuring multi-dimensional preferences (Hainmueller, Hopkins, and Yamamoto 2014), and has been used to assess preferences over the design of climate policy (Bechtel and Scheve 2013; Bergquist, Mildenberger, and Stokes 2020), cross-border climate finance transfers (Gaikwad, Genovese, and Tingley 2022a; Gampfer, Bernauer, and Kachi 2014), and job for transitioning workers (Blankenship et al. 2022).

Three factors encouraged respondents to consider the proposals carefully (e.g., Krosnick 1991). First, the survey promised to share the results with policymakers, which enhanced

the sense that one's answers were important.[3] Second, the salience of the survey topic for fossil fuel community residents further incentivized thoughtful responses. Third, in-person surveys helped to enhance data quality since people may answer with more care when it is their first time taking a survey as opposed to responses from "professional" survey-takers in online-based panels. As an indication of response quality, the main results are qualitatively consistent when accounting for the respondent's level of attention (Appendix 5).

Table 1 shows the compensation policy dimensions and their values in the conjoint experiment. The proposal values correspond with policy debates over the design of just transition assistance accompanying climate policy. The values for each attribute were randomized, which avoids potential confounding. For example, partisanship or socioeconomic status could affect how individuals interpret information. Randomization means that any confounding variable would be evenly distributed across the treatment groups, which allows for the estimation of the causal effect of a change in an attribute level on policy support.

The values for relocation assistance in Table 1 mirror debates over whether policies should invest in people or places. One view is that it is better to help those displaced by economic transitions move to productive regions (Glaeser and Gottlieb 2008; Kline and Moretti 2014), but others point out how social ties make relocation undesirable (Gazmararian and Tingley 2023), and there is growing evidence of the benefits of regional investments (Austin, Glaeser, and Summers 2018; Hanson 2023). Recent federal legislation in the United States, such as the Bipartisan Infrastructure Law, the CHIPS and Science Act, and the IRA, direct billions of dollars to place-based investments, but only a small fraction of the policies are explicitly directed toward fossil fuel regions (Raimi and Pesek 2022). In practice, the clean energy transition will require investments in *both* people and places, but the key trade-off captured here is whether the policy should actively support relocation. Yet, there is no public opinion data about how people in fossil fuel communities and the national public think about place-

[3]I actualized this promise by sharing a written summary of the results with county commissioners in the study area and Department of Energy officials.

Table 1: Conjoint Experiment Attributes and Levels

Attribute	Levels
Relocation Support	None
	Vouchers to cover moving expenses
Community Investment	Schools
	Housing for new residents
	Broadband
Benefit Support	None
	Funding for worker health care
	Funding for worker pensions
Income Support During Retraining	None
	\$400 per week for only workers
	\$200 per week for all community members
Free Retraining Program	For jobs in health care
	For jobs in clean energy
	For jobs in manufacturing
Retrained Worker Salary	\$50,000 per year
	\$75,000 per year
	\$100,000 per year
Worker Retraining Time	3-6 months
	1 year
	2 years

based policies. The national public may oppose place-based investments that redistribute resources and would be less directly beneficial to the average citizen. By contrast, fossil fuel community residents should be less supportive of relocation because of the social, cultural, and economic costs.

The benefit support attribute varied whether the policy included funding for displaced workers' healthcare and pensions. Fossil fuel workers often have benefits from their companies, which they could lose if they must retire early or switch careers (Green and Gambhir 2020). So, a proposal implemented in countries like Germany is for the government to provide funding to cover the loss of these benefits. However, some doubt that people in fossil fuel communities would support redistributive programs, given their higher levels of government distrust and economic conservatism (Cramer 2016; Feldman and Zaller 1992; Hochschild 2016; Rudolph and Evans 2005). Yet, there is no systematic measurement of preferences on

these issues.

The policy options for income support capture the tradeoffs between providing compensation for lost income to only fossil fuel workers, the entire community, or none at all. Surveys indicate there is support for community-wide transfers (Gaikwad, Genovese, and Tingley 2022b), but policymakers motivated by efficiency concerns might only target workers. The attribute for income support varied the size of the payments for workers and the community to emphasize tradeoffs inherent in targeting assistance.[4]

The last three attributes—free retraining program, retrained worker salary, and retraining time—capture essential aspects of workforce programs necessary for the energy transition (Cha 2017; Mayfield et al. 2023). Certain industries might be more appealing to train for than others, so the experiment varied whether the workforce program emphasized clean energy, traditional manufacturing, or healthcare (Tomer, Kane, and George 2021). Since decisions to enter a training program involve considerations of salary and opportunity cost, the conjoint included an attribute for expected wages after training, with levels chosen to approximate fossil fuel salaries in the area. Then, another dimension specified how long it would take to train for a new job, with values encompassing the approximate universe of training times.

The outcome is a binary indicator of whether a respondent selected a policy.[5] The primary analysis uses a linear probability model to regress this indicator on categorical variables for the values that each attribute takes. This procedure retrieves the average marginal component effect (AMCE), which represents the change in the probability of supporting transition

[4]The income support design choices also imply different overall costs of the policy, which could influence preferences. However, this would require a second-order calculation that is cognitively demanding, so it is unlikely that answers reflect concerns about budgetary effects.

[5]The survey included only a choice outcome because of time constraints and instrument design considerations, given the need to display the table and answer options simultaneously on a tablet computer.

assistance if one policy attribute switched levels. Since respondents ranked multiple policies, standard errors are clustered at the individual level to address autocorrelation. The model includes sample calibration weights to enhance representativeness (Appendix 3).

2.3 Information Intervention

To evaluate interventions that might shift these preferences, another experiment embedded in the survey explored the effects of information provision. The intervention focused on beliefs about coal's future because a common misperception is that the coal industry will rebound, so economic diversification is unnecessary. As evidence of this misconception, 53% of the fossil fuel community sample think that coal remains competitive, despite the fuel's market-driven decline (Coglianese, Gerarden, and Stock 2020). This inaccurate belief could hinder the energy transition (Carley, Evans, and Konisky 2018). For example, if people believe that coal will return, that could discourage interest in training for careers in clean energy or alternative pathways.

The experiment randomized whether a respondent received information about the state of the coal industry to see if information provision could shift preferences about the clean energy economy. Such a message is a tractable intervention that civil society groups could implement. The intervention was a light-touch, saying, "Because of cheap natural gas and renewables, a move away from coal may be inevitable." The respondent likely interpreted this information as coming from the survey enumerator, a university researcher. For some, the academic credentials may have enhanced the credibility of the information, whereas, for others who view higher education institutions with skepticism, it may have been viewed with more suspicion. Future research could examine stronger interventions that provide graphical information about trends in the coal industry, which should only magnify the treatment effect.

The analysis of this experiment regresses an indicator for if an individual selected a policy in the conjoint experiment on the interaction of binary variables for if the policy had a clean

energy jobs training program and if the respondent was in the information treatment group. The information provided and whether the policy has a clean energy jobs program were randomized, which allows us to learn about the cause-and-effect relationship between the intervention and policy support. The analysis examined clean energy jobs because they are emphasized in debates about fossil fuel labor transitions (Tomer, Kane, and George 2021). However, they need not—and should not—be the only focus for policymakers given the regional variation in the suitability of renewable energy resources (Curtis, O'Kane, and Park 2023; Greenspon and Raimi 2022; Lim, Aklin, and Frank 2023). The hypothesis is that people who receive information should become more supportive of workforce programs for clean energy jobs because they now hold more accurate beliefs about the state of the coal industry.

3 Results

3.1 Fossil Fuel Community and National Public Climate Policy Transition Assistance Preferences

Figure 1 shows a meaningful divergence between the national public and fossil fuel community residents' preferences over place-based policies as a part of climate policy transitional assistance to affected fossil fuel regions. While the national public supports investing in relocation programs, residents of coal, oil, and gas communities do not. This divergence indicates that consequential policy design choices preferred by the national public may reduce support in the communities that transition assistance intends to help.

In contrast, there is a convergence in support for funding worker benefits and income compensation—policies that target individuals but do not necessarily encourage relocation. Both residents of fossil fuel communities and the national public become more likely to endorse proposals that contain funds for worker healthcare and pensions and income compensation for fossil fuel workers or community members. While there is a common portrayal

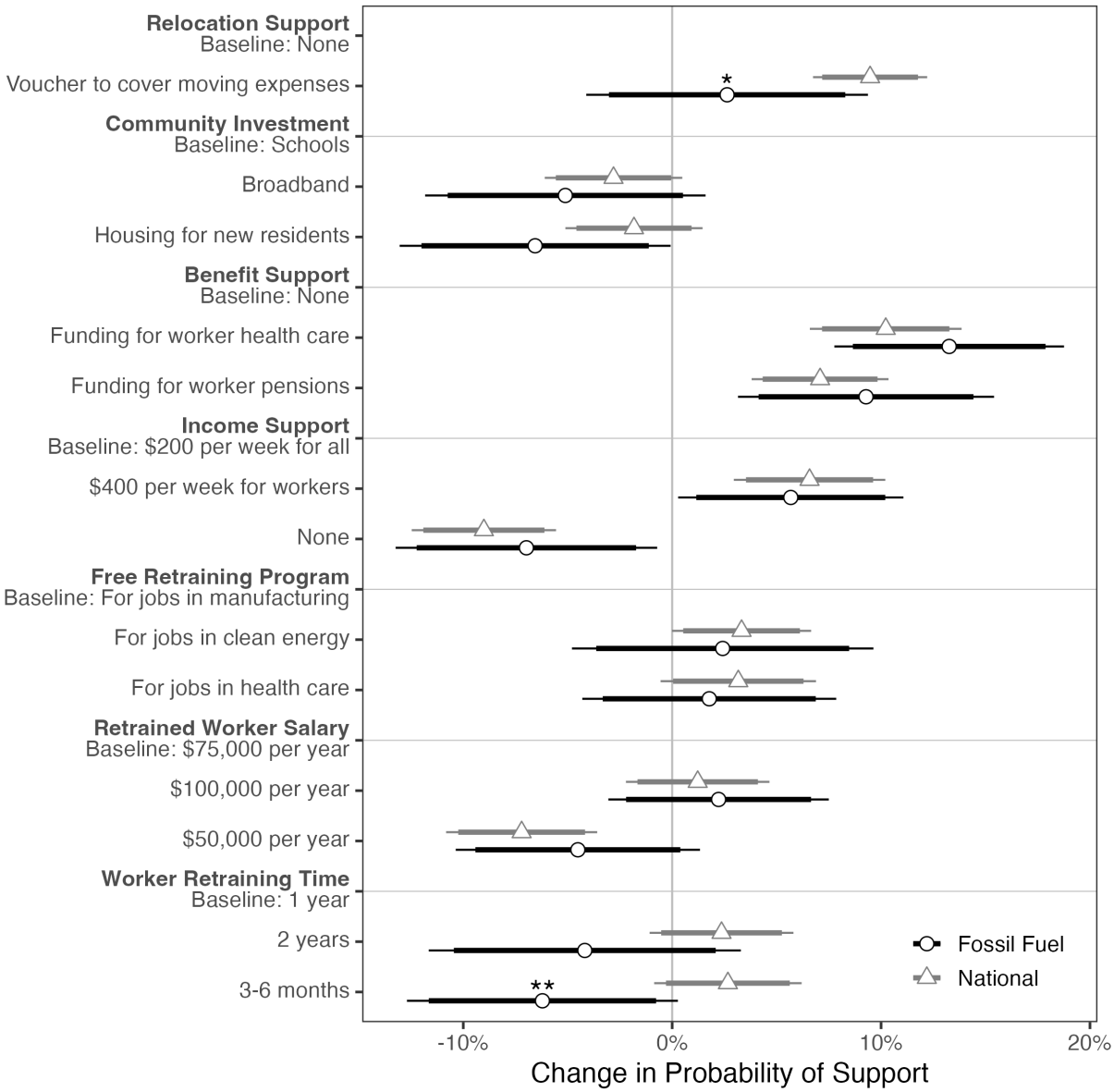

Figure 1: Effect of policy design on support for climate policy transition assistance in fossil fuel communities ($N = 2{,}974$ policies) and nationally ($N = 10{,}010$ policies). Estimates from a linear regression model of an indicator for if a respondent selected a policy on indicators for the randomly assigned levels of the attributes, with SEs clustered by respondent and weights for representativeness. Thin and thick bars denote 95 and 90% confidence intervals. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the fossil fuel and national samples.

of fossil fuel community residents as opposed to federal intervention (e.g., Hochschild 2016), funding worker healthcare and pensions increased the probability of policy support by about 10% relative to the baseline of no assistance. This does not mean fossil fuel community res-

idents would embrace federal government intervention. Still, if provided the choice between benefit support or nothing, they would prefer redistributive policies that lessen the costs of the energy transition.

When it comes to the target of community investments, there is also no difference in preferences between the samples. While there may appear to be slightly less support for broadband or housing investments in the fossil fuel sample, these differences are not statistically distinguishable (Table 8.2). Since there was not an option for no community investment, these estimates do not reveal whether there is a relative preference for place-based investments in the fossil fuel sample. I hope future research explores a wider array of investment options than was possible to include in this survey, including a baseline category with no community investment for comparison.

Lastly, for workforce development, fossil fuel community residents are indifferent about the type of job for which they retrain. There is also sensitivity to lower-paying jobs, which reduces support. However, a training program to prepare people for a six-figure salary does not garner more support than the baseline salary of $75,000.

While there are no differences between the samples for these attributes, a sharp contrast emerges for preferences over the ideal time to retrain workers. Fossil fuel communities strongly prefer around one year of training, whereas the national public is more supportive of faster training times. This might be because fossil fuel community residents fear that the shorter time does not provide sufficient experience for new jobs, whereas people in the national public are not as concerned about retraining since they do not have a personal stake in the outcome, evidenced by the weak positive, and possibly null, effect of the retraining attribute levels on support.

Treatment Effect Heterogeneity. When examining differences in preferences among Republicans and Democrats, there is a remarkable convergence in approval of benefit support policies such as funding for worker healthcare and pensions (Appendix 5 presents hetero-

geneous treatment effects).[6] This consistency also holds when testing for treatment effect heterogeneity by economic conservatism. Contrary to the common expectation that ideology decreases support for these redistributive policies (e.g., Hochschild 2016), the results indicate that funding for worker pensions and healthcare could garner a bipartisan consensus, which is consequential for the durability of the energy transition (Gazmararian and Tingley 2023).

There are some differences by partisanship, such as Democrats and Independents exhibiting more support than Republicans for relocation assistance and training programs for clean energy jobs. When examining variation in preferences by sex, attentiveness, fossil fuel employment, and career attachment, the main results are qualitatively the same across these subgroups. However, a few differences arise, such as female respondents being more opposed to shorter worker retraining times.

Robustness. The results are robust to a battery of tests, such as using an unweighted sample and including fixed effects for each task to account for potential bias from the order in which respondents see information and their effort exerted at different task stages, and the results persist. Another model includes individual fixed effects that remove any potential bias from individual-level characteristics, and the results are the same (Appendix Table 8.1).

3.2 Shifting Preferences with Information

What effect did the information intervention have on preferences regarding clean energy workforce investments? Figure 2 shows that fossil fuel community residents who received information are more supportive of policies that include free retraining programs for clean energy jobs. There is about an 11% difference in support between the control and treatment groups (one-sided hypothesis test $p < 0.05$). When fossil fuel community residents have no information about the decline of coal, a clean energy jobs program does not increase support

[6]Partisan identification questions came at the end of the survey to avoid potential priming effects.

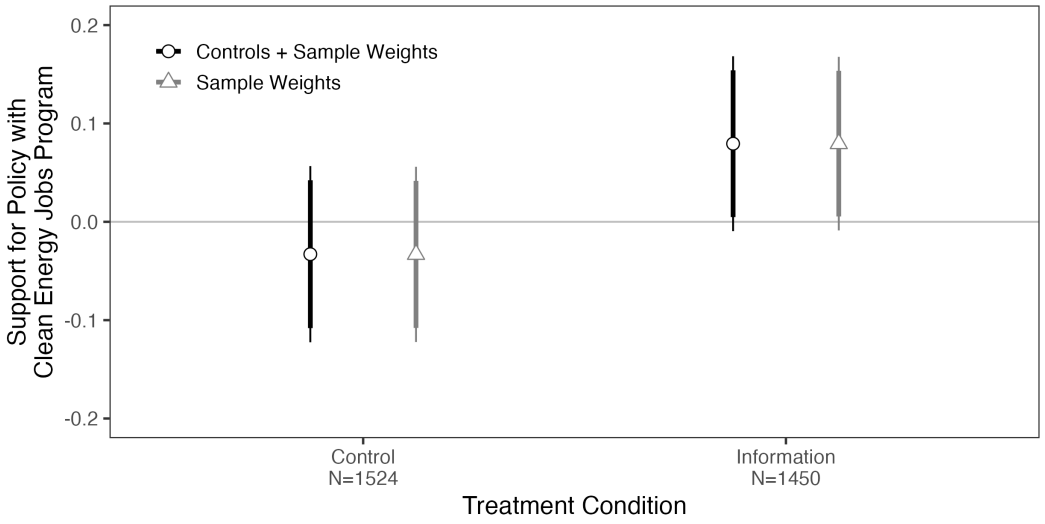

Figure 2: Effect of the information intervention about coal on fossil fuel community climate transition policy preferences for clean energy job training. Covariate adjusted estimates with 90 and 95% confidence intervals from heteroskedasticity-robust SEs clustered by respondent.

for climate policy transition assistance. However, more accurate information about market conditions shifts their preferences to support clean energy workforce investments.

Treatment effect heterogeneity. The information intervention has a generally consistent effect across socioeconomic characteristics (Appendix 9). Notably, people with household members employed in fossil fuels exhibit similar reactions as those without coal, oil, or gas employment. For partisan identification, the effect of information is most substantial among Independents and Democrats but not detectable for Republicans. Treatment effects are equivalent for more and less attentive respondents. When examining results by education, non-college-educated people exhibit a larger positive response to the treatment. This may be because the information about coal's decline is newer, giving it more power to shift preferences.

3.3 Building Climate Coalitions with Transition Assistance

Finally, the survey evaluated whether climate policy would garner political support if bundled with just transition assistance. The question asked about transition assistance generally, so

the lack of specificity may lower the observed level of approval by increasing uncertainty about the nature of the compensation and transition assistance.

Panel A of Figure 3 shows that a majority in the fossil fuel community (66%) and national (83%) samples would be likely to support a climate policy coupled with transitional assistance for coal, oil, and gas-producing areas. Panel B reveals that a majority of people with a household member working in fossil fuels would also support climate policy if coupled with compensation. The response among individuals employed in fossil fuels is notable because the policy would directly affect them, so the costs of the issue are concrete in their minds.

Examining the correlates of support, results from ordered logistic and linear regression models show that Republicans are less likely than Democrats to support a bargain of transition assistance for climate policy. This is consistent with the partisan polarization of climate opinions in the United States (Egan and Mullin 2017). However, absolute levels of support remain high across partisans. Another consistent association is that the people with the greatest concern about climate change are much more likely to support climate policy bundled with compensation (Table 10.1).

An experiment embedded in the national survey assessed whether bundling transition assistance increases climate policy support. The experiment randomized whether the climate policy question said there would be transition assistance. Panel C of Figure 3 shows that including compensation increases support for climate policy in the national sample.[7] This positive increase in support is strongest among Republicans and Independents, likely because Democrats have higher baseline support for climate policy (Table 11.1). Still, it is notable that—despite high levels of polarization in climate beliefs—Republicans become about 11% more supportive of climate policy if it includes just transition assistance. This finding is consistent with other studies of the effect of just transition policies on the national public's

[7]This result likely generalizes to the targeted sample because the findings from the conjoint indicate there is greater approval of policies that reduce the costs of the energy transition for fossil fuel communities.

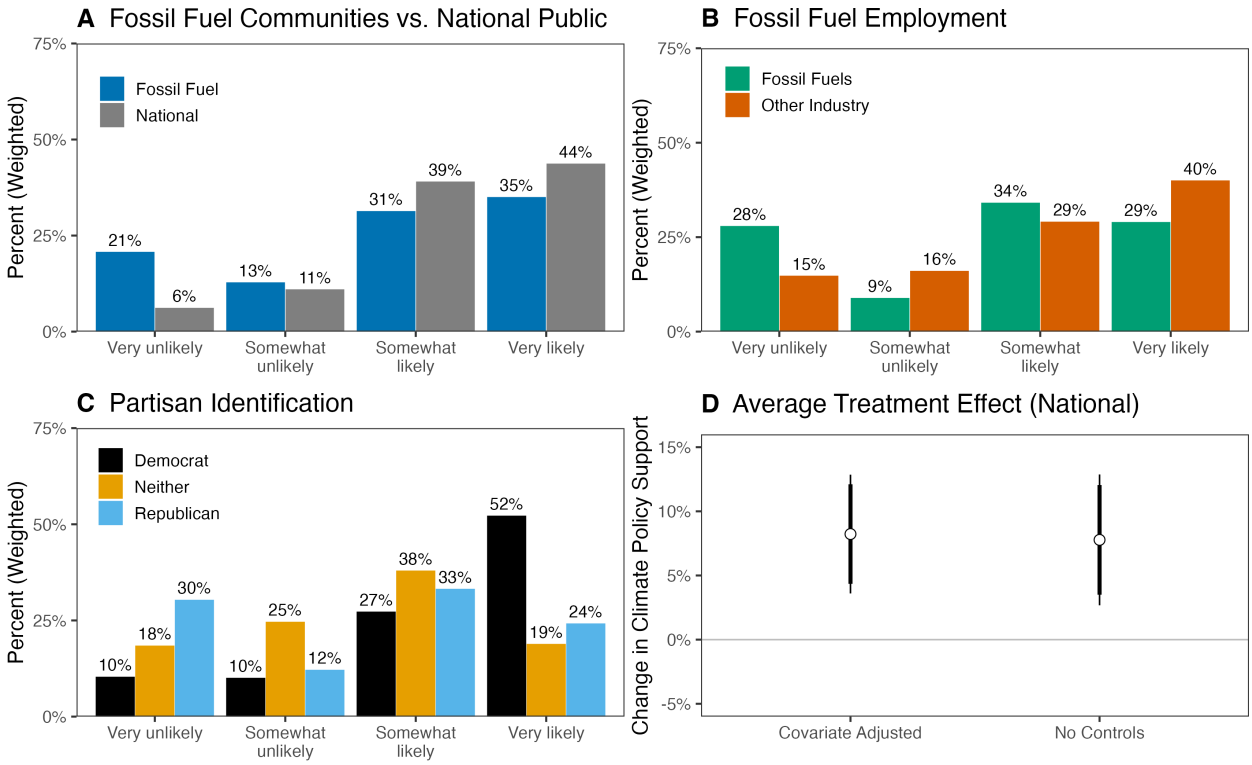

Figure 3: Support for climate policy if bundled with transition assistance. The question asked, "To fight global warming, politicians are considering policies to move away from fossil fuels. How likely or unlikely would you be to support such a policy if it included proposals to help fossil fuel workers and communities?" Panel A compares the distribution of responses in the fossil fuel ($N = 248$) and national ($N = 1{,}001$) samples. Panel B shows the distribution of responses within the fossil fuel sample according to whether a household member works in fossil fuels, while Panel C shows the responses broken down by partisan identification. Panel D shows the average treatment effect of coupling climate policy with transition assistance on support in the national sample, with the bars denoting 90 and 95% confidence intervals (see Appendix 11 for estimation details).

support for climate policy (Bergquist, Mildenberger, and Stokes 2020; Gaikwad, Genovese, and Tingley 2022b; Gazmararian and Tingley 2023).

4 Conclusion and Policy Implications

Using a conjoint experiment in a targeted sample of fossil fuel communities and of the national public, this research note identifies areas of convergence and divergence in preferences over the design of just transition assistance as a part of climate policy. Overall, I find a

majority of fossil fuel community residents would support climate policy if coupled with just transition assistance. While partisan polarization affects beliefs about climate change (Egan and Mullin 2017), the results indicate remarkable convergence in policy preferences across partisan and geographic divides. Even in the communities most dependent on fossil fuels, public opinion is not an immutable barrier to the clean energy transition.

The findings have immediate implications for policymakers. First, both the national public and fossil fuel communities support investments in workers, such as healthcare and pension funding, as well as compensation for lost income as a part of climate policy. This indicates that just transition assistance policies that emphasize the continuity of workers' benefits and income, as has been done in countries like Germany (Oei, Brauers, and Herpich 2020), could build public support in the communities these policies aim to help and also nationally. Key to implementation will be ensuring that these policies are credible from the perspective of affected workers and community members (Gazmararian and Tingley 2023).

The results also show how a critical divergence exists between the national public's and fossil fuel community residents' preferences about place-based policies to encourage relocation. While the average citizen supports policies to help relocate fossil fuel community residents, this approach does not garner support among individuals in these regions. Previous approaches taken by policymakers to economic disruption have emphasized relocation (Glaeser and Gottlieb 2008; Kline and Moretti 2014). However, this finding suggests that policy responses to the energy transition emphasizing mobility-enhancing investments in people rather than places would fail politically—and possibly in practice if implemented.

Lastly, this study also demonstrated a potential informational intervention that can shift fossil fuel community preferences over clean energy jobs. When people learn that coal is declining due to cheaper natural gas and renewables, they become more willing to support investments in clean energy job retraining programs, a prominent but not exclusive option for labor transitions (e.g., Lim, Aklin, and Frank 2023). These findings highlight the importance of policymakers and trusted stakeholders investing in efforts to disseminate quality

information so communities can better coordinate their energy transition efforts.

Data Availability The data and code to reproduce the results in this study will be made publicly available on the Harvard Dataverse and the author's website.

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Supplementary Information

Fossil Fuel Communities Support Climate Policy Coupled with Just Transition Assistance

1 Survey Error Challenge

This appendix describes the sources of survey error that make it difficult for standard sampling methods to reach fossil fuel communities. While one might hope to examine responses from fossil fuel regions in a large$-N$ national survey, this raises two challenges. First, many of these national surveys only include a handful of respondents from fossil fuel communities (Gaikwad, Genovese, and Tingley 2022; Gazmararian and Tingley 2023). Second, there are no guarantees that these individuals are representative of fossil fuel communities within their states. Thus, researchers hoping to explore public preferences in fossil fuel communities have turned to using online-based panels with geo-targeting in fossil fuel regions. While a meaningful improvement, this appendix describes why there are important limitations that necessitate going directly to these communities to sample in person.

1.1 Coverage Error for Online Panels

Online survey panels are a go-to tool for survey researchers. These opt-in panels are composed of individuals who sign up to take surveys in exchange for compensation. These are often nonprobability samples, where the researcher specifies quotas for the desired population and recruits until the target demographics are achieved, usually along marginal dimensions (e.g., age, gender, education, race). Some studies have employed internet opt-in panels to sample fossil fuel community residents. This sampling strategy typically involves setting a geographic quota for ZIP codes or counties with fossil fuel production, recruiting individuals from these areas who participate in online panels (Gaikwad, Genovese, and Tingley 2022).

However, scholars have long raised concerns about the non-representativeness that can result from opt-in internet-based panels (Carina Cornesse et al. 2020).[8] The primary concern is coverage error, where individuals in the population of interest are systematically not part of internet panels. Such coverage errors can occur because specific individuals are less likely to be online. The lack of awareness of online-based panels, which may be related to education, internet use, and political interest, could also contribute to coverage error. Even if someone is aware of internet-based panels, they may lack the incentive to participate because they do not have the financial need to earn money by taking surveys.

The challenges of coverage error are pertinent in fossil fuel communities because of low-internet penetration and the limited financial incentives of fossil fuel workers to participate in online-based panels.

Low-Internet Penetration Only 78% of Appalachian households have a broadband internet subscription (ARC 2021). It is obvious why this presents problems for online survey recruitment.

[8]When the focus is experimental, internet-based panels exhibit internal validity consistent with probability samples (Coppock and McClellan 2019). Representativeness matters most when the goal is descriptive inference about the preferences and beliefs of a target population.

Limited Financial Incentives for Fossil Fuel Workers Fossil fuel workers are an essential demographic to sample from within fossil fuel communities. However, people who work in coal, oil, and gas are unlikely to participate in online-based panels given their full-time employment and relatively high compensation, which reduces their need to supplement their income by participating in surveys.

1.2 Unit Nonresponse

Response rates for surveys are declining (Kathleen Hall Jamieson et al. 2023), and there are documented partisan differences, where Republicans are less likely to respond to interview requests (Clinton, Lapinski, and Trussler 2022). Fossil fuel-producing regions often are majority-Republican areas (Gazmararian 2023), so this type of nonresponse raises concerns about the representativeness of online-based samples of fossil fuel communities.

1.3 Evidence of Coverage Error and Unit Nonresponse

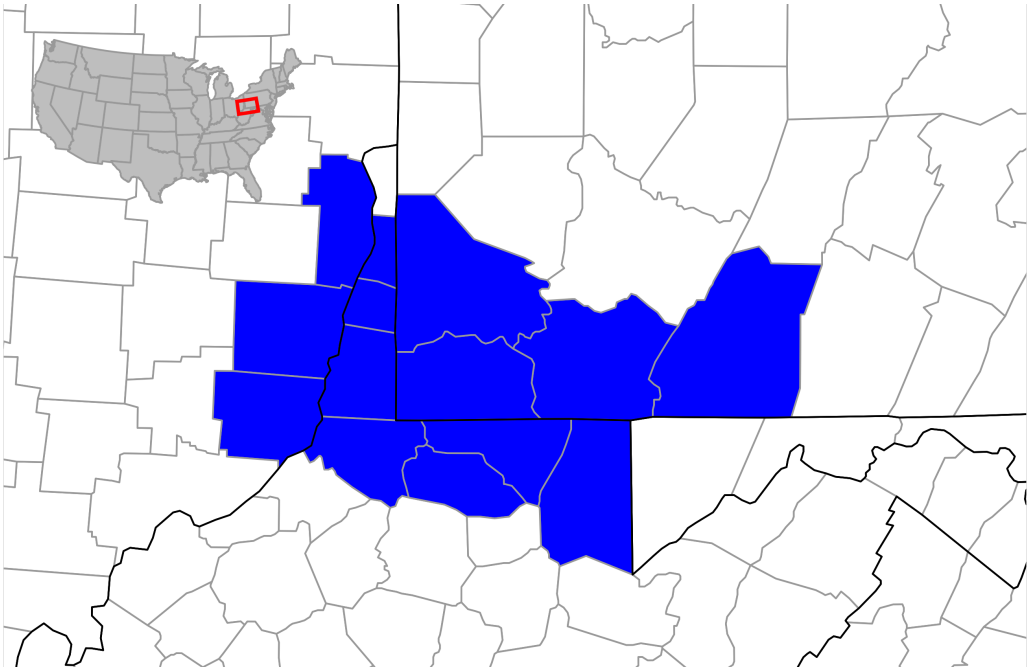
Appendix 3 benchmarks this study's sample against previous attempts to collect samples of fossil fuel communities, which demonstrate a remarkable improvement, likely due to mitigating issues of coverage error and unit nonresponse.

2 Population and Sampling Strategy

2.1 Target Population

The population of interest is fossil fuel-producing communities. This study focuses on Southwest Pennsylvania and the surrounding region. Appendix 3.3 describes how this target population is similar to fossil fuel communities more generally in different parts of the United States.

The reason for focusing on the Southwest Pennsylvania area is that it is home to multiple types of fossil fuel extraction: coal, oil, and gas. The local environmental effects of coal mining and hydraulic fracturing should be especially relevant for these communities. The region has also undergone deindustrialization and historical coal closures while also being a site of ongoing coal production, which makes the clean energy transition a salient topic (Ansolabehere et al. 2021). Figure 2.1 depicts the general area where the study occurred. The particular county is not identified to respect the confidentiality of study participants.[9]



SI Figure 2.1: Study area shaded in blue covers Southwest Pennsylvania and surrounding counties in West Virginia and Ohio.

2.2 Sampling Strategy

Convenience samples at two county fairs in the Southwest Pennsylvania area served as the sampling strategy to access this hard-to-reach population. County fairs represent a unique

[9]The population of counties in this area is small, and the survey records detailed demographic information like household size, occupation, age, and income, so it would be easy to de-identify the respondents.

opportunity to access a broad cross-section of the local population because fairs are iconic cultural institutions in the United States. As such, they are well-attended by residents. People from all socio-demographic groups attend the fair because of its entertainment and social value. There are events that adults and their children like to watch, and it is also an opportunity to connect with other community members. Fair organizers remarked that attendance was exceptionally high in the summer of the survey's fielding because it was one of the first in-person events after lifting COVID-19 restrictions.

The surveys were conducted in July and August 2021, both in the same county of Southwest Pennsylvania. The July 2021 fair was relatively smaller, whereas the August 2021 fair was larger. People who took the survey at the first fair were not allowed to retake it at the second fair.

2.3 Recruitment

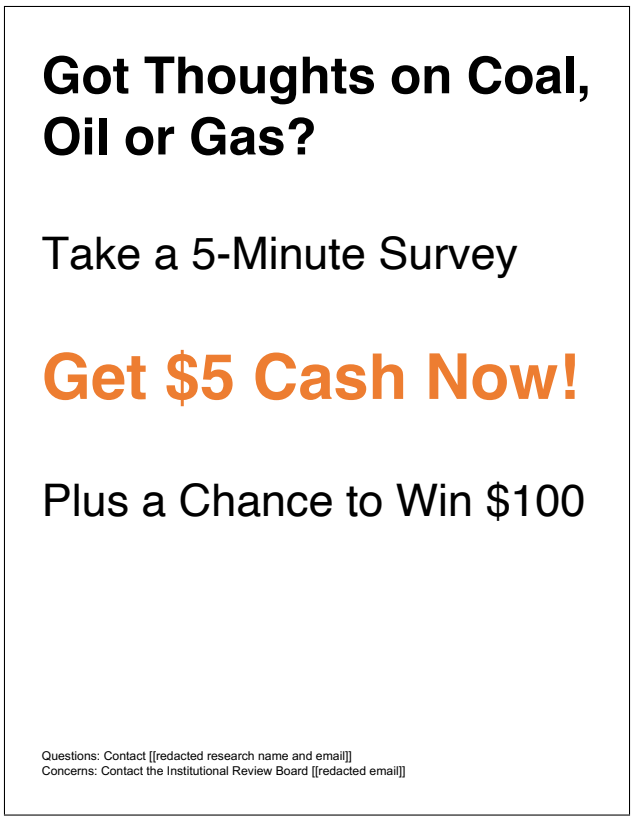
The researcher collaborated with a community group and non-governmental organizations to obtain well-located tables at the fairs. People who passed by the tables were recruited to take the survey by the enumerator. Figure 2.2 shows an example of the large posters which advertised the $5 cash remuneration and the potential to earn $100 in a raffle.[10] To maximize participation and communicate the purpose of the research, the posters describe the survey as being about coal, oil, or gas, which aimed to make the study relevant to fairgoers. In all, 248 took the survey.

2.3.1 Potential Sources of Response Bias

This section discusses the potential sources of response bias that could occur because this is a convenience sample. When evaluating the tradeoffs involved with the sampling strategy, it is essential to compare them to the alternative sampling strategy, a nonprobability internet-based panel survey. This alternative approach is also a convenience sample. As a comprehensive review described, "...most such samples rely on a collection of convenience samples that are aggregated and/or adjusted, with the goal of reducing the final difference between sample and population" (Carina Cornesse et al. 2020, 8). Thus, evaluating the quality of the county fair sample requires considering the relative susceptibility of this approach to sources of non-response bias versus the bias that would arise from using an opt-in online sample. As described below, there are theoretical and empirical reasons for why the county fair samples yield relatively more representative samples than the current sampling techniques employed by researchers.

Topical and political interest Advertising the topic of the study would introduce response bias if it attracted people who cared most about these topics, such as the most politically interested interviews. The compensation offered helps to counterbalance this possibility by creating a general incentive to participate. However, selection into surveys based on political and topical interest is a challenge that confronts not only this study but also both

[10]Cash remuneration was added for the second fair to bolster recruitment.



SI Figure 2.2: Recruitment poster displayed at the fair table.

probability and nonprobability sampling strategies. Thus, it is not a unique disadvantage to the recruitment approach. It is a limitation that should be considered when interpreting the results. Greater political engagement may also have advantages if these respondents are more likely to participate in politics, so their preferences would be more influential.

Families A potential concern would be if individuals might be too busy to take the survey at the fair. This could be the case if someone had children who made it difficult to pause and take a survey. To minimize this possibility, the survey length was kept short. In addition, the fair table provided postcards with a QR to allow the survey to be taken at home. Figure 2.3 shows what the postcard looked like.

Age and technology familarity Since the survey was administered on a tablet computer, individuals uncomfortable with technology, such as some older people, might have been less likely to take the survey. This also applies to online-based panel samples, which are also self-administered with computers. By contrast, this study ameliorated this possible source of non-response error by inventing a technique to generate a paper survey that contained a randomized experiment. This is a challenging technical task because of the complexity of

SI Figure 2.3: Recruitment postcard available for fairgoers to take to administer the survey at home after the fair.

the conjoint survey experiment.[11]

Partisanship Unit non-response by partisanship is a challenge confronting both probability and non-probability samples. The researcher built connections with a bipartisan set of local officials who helped to organize the fair, which may have helped build credibility to recruit respondents from both political parties, as evidenced by the distribution of respondent partisanship (Table 3.1).

2.4 Survey Administration

The survey was administered on a tablet computer. The survey was pre-tested on these devices and optimized the settings for a fluid survey-taking experience. Only the participant could see the tablet screen during the survey, so the survey-taker could be confident that her responses were private, reducing the potential for pressure from peers or the enumerator.

2.5 Response Rate

There is a formidable measurement challenge in calculating the response rate for a convenience sample, especially in a dynamic environment like a county fair. As part of a subsequent project where the researcher collected a sample at the same county fair, the author attempted to measure the cooperation rate using the following methodology. The enumerator used a

[11]The author used an RMarkdown script to create PDFs of the surveys with different realizations of randomized content. Each survey had a unique ID that paired the survey realization with meta-data about the randomized attributes.

handheld tally, the kind that one might see at a large event, to record how many people were asked to take the survey. Since it was not feasible to do this for the entire day, the enumerator would record how many people were asked to take the survey at random intervals. This somewhat systematic exercise produced an estimate that 39% of people asked to take the survey did so. This response rate is remarkably higher than other survey data collection methods, which today "rarely reach 10%" (Kathleen Hall Jamieson et al. 2023, 2). The response rate for the county fair recruitment method is almost 4× higher than is typical for survey research today.

3 Representativeness

3.1 Representativeness of Target Population

Though a convenience sample, the respondents generally match local demographics for sex, age, education, income, and race. Table 3.1 compares the demographic characteristics of the sample, the population, and the weighted sample. Population data come from the 2018 5-year American Community Survey (ACS). It is necessary to use the 5-year ACS because the 1-year version does not have adequate coverage of rural areas like the study site. In the unweighted sample, the two imbalances are that the sample is slightly wealthier and includes more younger individuals without college degrees than the population.

Calibration Weights The author constructed calibration weights using raking to enhance the sample's representativeness. Raking uses iterative post-stratification to match the marginal distributions of the sample to the known population margins. The population data employed covers the joint distribution of sex/age/education, the joint distribution of race/age/sex, and the distribution of income. Since missing item-level responses cannot be used for this procedure, they were imputed with the median value. There are low rates of item-level non-response. Of the items with missingness, less than 2.5% of the responses are missing. To reduce the influence of outlying observations, we trim the weights with a lower bound of 0.3 and an upper bound of 3. While survey weights enhance the representativeness of our estimates, they also reduce precision, which should introduce bias against detecting differences in preferences.

Political attitudes and beliefs There is no quality population-level data on political attitudes and beliefs in fossil fuel regions because national samples often do not capture these regions. Even when there are quality state-level polls, these do not always contain the appropriate questions nor have sufficient coverage in rural parts of states that are often most dependent on fossil fuels. Nonetheless, it is possible to compare the political characteristics of the sample to other related but not identical measures.

- **Partisanship** In terms of partisanship, about 34% of the unweighted sample identify as Democrats, close to the 28% in the county who voted for the Democratic presidential candidate in 2020. One would not expect these results to be identical because vote choice differs from party identification, but they should be similar, as is observed.
- **Climate change beliefs** Regarding the share that is worried about climate change, 57% express concern, similar to a 54% estimate for the county from previous studies (Howe et al. 2015).

SI Table 3.1: Representiveness of unweighted and weighted sample

	Sample	Population	Weighted
Sex/Age/Education			
Female × 18-34 years × College	0.04	0.07	0.06
Female × 18-34 years × No college	0.12	0.05	0.06
Female × 35-64 years × College	0.10	0.12	0.12
Female × 35-64 years × No college	0.19	0.12	0.14
Female × >65 years × College	0.03	0.03	0.03
Female × >65 years × No college	0.04	0.09	0.07
Male × 18-34 years × College	0.03	0.06	0.05
Male × 18-34 years × No college	0.18	0.09	0.10
Male × 35-64 years × College	0.07	0.10	0.10
Male × 35-64 years × No college	0.14	0.17	0.18
Male × >65 years × College	0.03	0.04	0.03
Male × >65 years × No college	0.03	0.07	0.06
Income			
<$20,000	0.17	0.18	0.18
$20,000-39,999	0.13	0.21	0.19
$40,000-59,999	0.15	0.16	0.15
$60,000-99,999	0.30	0.24	0.26
>$100,000	0.25	0.21	0.22
Race			
White	0.93	0.94	0.94

Notes: For exposition, the table collapses the 18-24 and 25-34, and 35-44 and 45-64 age bins together, respectively. Also not shown is the joint distribution of race/age/sex used to construct weights. Population data from the 2018 5-Year ACS and cover the primary study site county.

3.2 Representativeness Benchmark

The county fair sample demonstrates an improvement over attempts to use online-based panel samples to recruit respondents from fossil fuel communities. Table 3.2 compares the demographics of the fair sample with a nonprobability sample from an online-based panel. Keep in mind that these samples differ in scope: the online sample includes respondents outside the Southwest Pennsylvania area (e.g., Wyoming). Yet, statistically distinguishable differences between the samples indicate the value of going directly to fossil fuel community residents. For example, compared to the fair survey, the online sample skews female, younger, has fewer households with fossil fuel employment, and has a higher level of climate change concern. This is an indication of coverage error, where the types of people participating in online-based survey panels differ systematically from the population of interest. While online surveys that geotarget these regions represent valuable improvements over national surveys, researchers can complement and advance this critical work with surveys in the field, as in this study.

SI Table 3.2: Comparison of fair and online samples of coal country

	Sample				
	Fair	Online	Difference	t-stat	p-value
Female	0.51	0.62	-0.11	-2.77	0.01
18-34	0.38	0.42	-0.05	-1.26	0.21
35-54	0.38	0.41	-0.02	-0.58	0.56
55 or older	0.24	0.17	0.07	2.18	0.03
Fossil Fuel Employment	0.50	0.38	0.13	3.35	0.00
Employed	0.55	0.51	0.04	1.11	0.27
College Degree	0.27	0.29	-0.01	-0.36	0.72
Climate Concern	0.57	0.69	-0.12	-3.24	0.00

Notes: Two-sided t-test that assumes unequal variances. Online sample from Gaikwad, Genovese, and Tingley 2022. Samples cover different populations. The fair sample includes Southwest Pennsylvania, whereas the online sample includes states outside of that region. Fair sample size is 248. Online sample size is 516. For comparison, the fair sample is unweighted (since the online sample includes no weights).

3.3 Study Site Representativeness of Fossil Fuel Communities

When considering how to generalize this study's results to other fossil fuel communities, it is helpful to consider how representative the Southwest Pennsylvania area is of fossil fuel regions. A comparison of the demographics of the study area to other places in the United States facing energy transitions reveals similarities that provide for cautious optimism that the findings may travel. Still, this claim requires further testing with new samples from diverse settings.

Table 3.3 compares the demographics of the counties in the study area and fossil fuel-producing counties elsewhere in the United States. A county qualifies as an energy county if either coal or oil and gas employment account for over five percent of county employment. The study area is similar to other fossil fuel-extracting counties in population, gender, rurality, and coal employment. However, the study area differs in that it has a slightly higher median age, is less diverse in terms of race, and has lower average oil and gas employment.

SI Table 3.3: Study site representativeness of American fossil fuel counties.

	Non-Energy	Study	Energy	t-stat	p-value
Population	93542.20	33204.75	47863.45	-0.86	0.39
Median Age	40.42	43.42	39.55	4.43	0.01
Female	47698.24	16858.00	23989.64	-0.83	0.41
Male	45843.97	16346.75	23873.80	-0.89	0.38
White	69656.71	31700.00	34088.98	-0.23	0.82
Black	12942.62	779.75	6612.14	-1.86	0.06
Rural	19343.37	15317.25	13216.15	0.54	0.63
Coal Employment	0.00	0.10	0.01	1.31	0.28
Oil/Gas Employment	0.00	0.05	0.20	-6.00	0.00

Notes: Demographic data from the 2010 Census. Fossil fuel employment data from the 2020 Census County Business Patterns survey. NAICS codes for oil/gas include: 213111, 213112, 211120, 211130, 237120, 486110, 486210 486990, 486910, 424710, 424720, 324110, 324121, 324122, 324191, 324199, 221210 333131, 333132, 332420, and 454310. NAICS codes for coal include: 212114, 212115, 213113, 212111, 212112, and 212113. Two-sided t-tests reported to assess balance.

4 National Sample

Survey collection for the national sample ran from February-March 2023. The survey vendor Lucid conducted the data collection. The nonprobability sample used quotas matching population values from the 2020 Census.

- Race: Non-Hispanic White (60%), Non-Hispanic Black (13%), Hispanic (17%), Other (10%)
- Education: Bachelor's degree or higher (34%), Less than a bachelor's degree (66%)
- Age: 18-24 (12%), 25-34 (18%), 35-44 (16%), 45-54 (16%), 55-64 (17%), 65+ (21%)
- Sex: Male (49%), Female (51%)
- Region: Midwest (21%), Northeast (17%), South (38%), West (24%)

The median survey completion time was 8 minutes.

SI Table 4.1: National sample description

	Mean	SD	N	NA
Age	47.45	17.46	1001	0.00
Female	0.51	0.50	1001	0.00
Black	0.16	0.36	1001	0.00
Hispanic	0.18	0.38	1001	0.00
Employed	0.46	0.50	1001	0.00
Income Q1	0.26	0.44	1001	0.00
Income Q2	0.29	0.45	1001	0.00
Income Q3	0.22	0.41	1001	0.00
Income Q4	0.22	0.41	1001	0.00
Income Not Say	0.01	0.12	1001	0.00
College	0.34	0.48	1001	0.00
Democrat	0.49	0.50	1000	1.00
Republican	0.35	0.48	1000	1.00
Climate Concern	0.76	0.43	1001	0.00

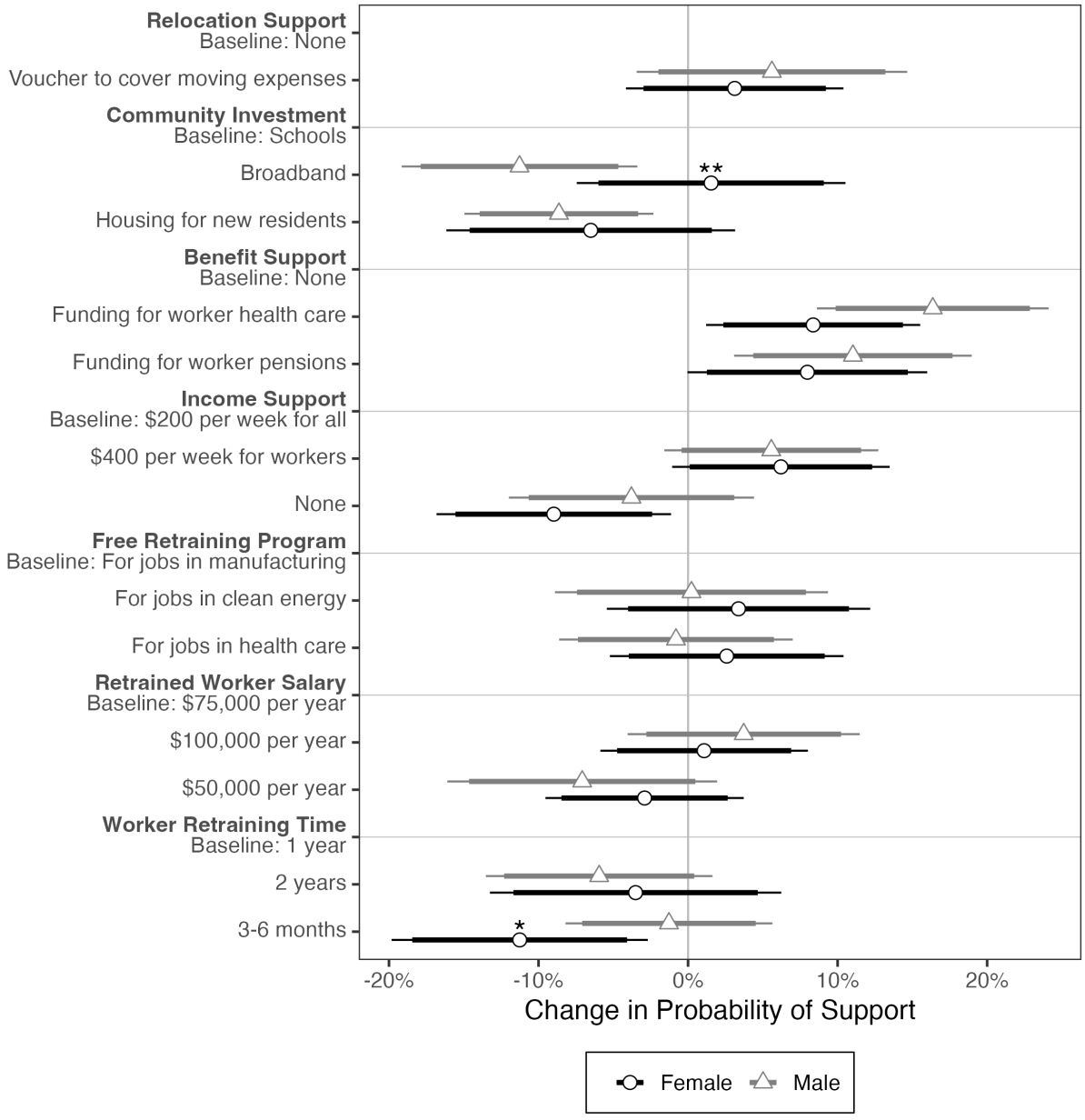
Data Quality The survey employed industry-standard safeguards for data quality, including embedded data for detecting bots and duplicate survey responses. The conjoint also employed the same attention check as in the county fair (Q 10). For the national sample, it was also used as a screener for attentiveness.

5 Conjoint Treatment Effect Heterogeneity

The conjoint treatment effect heterogeneity results use the targeted fossil fuel community sample. The researcher conducted the analysis by subsetting the data to the two subgroups, then estimating the ACME using each subset. This has the desirable statistical property of estimating a fully-saturated model that effectively interacts the subgroup indicator with all attribute levels.

SI 7 describes the questions used to construct the subgroups in the treatment effect heterogeneity analyses.

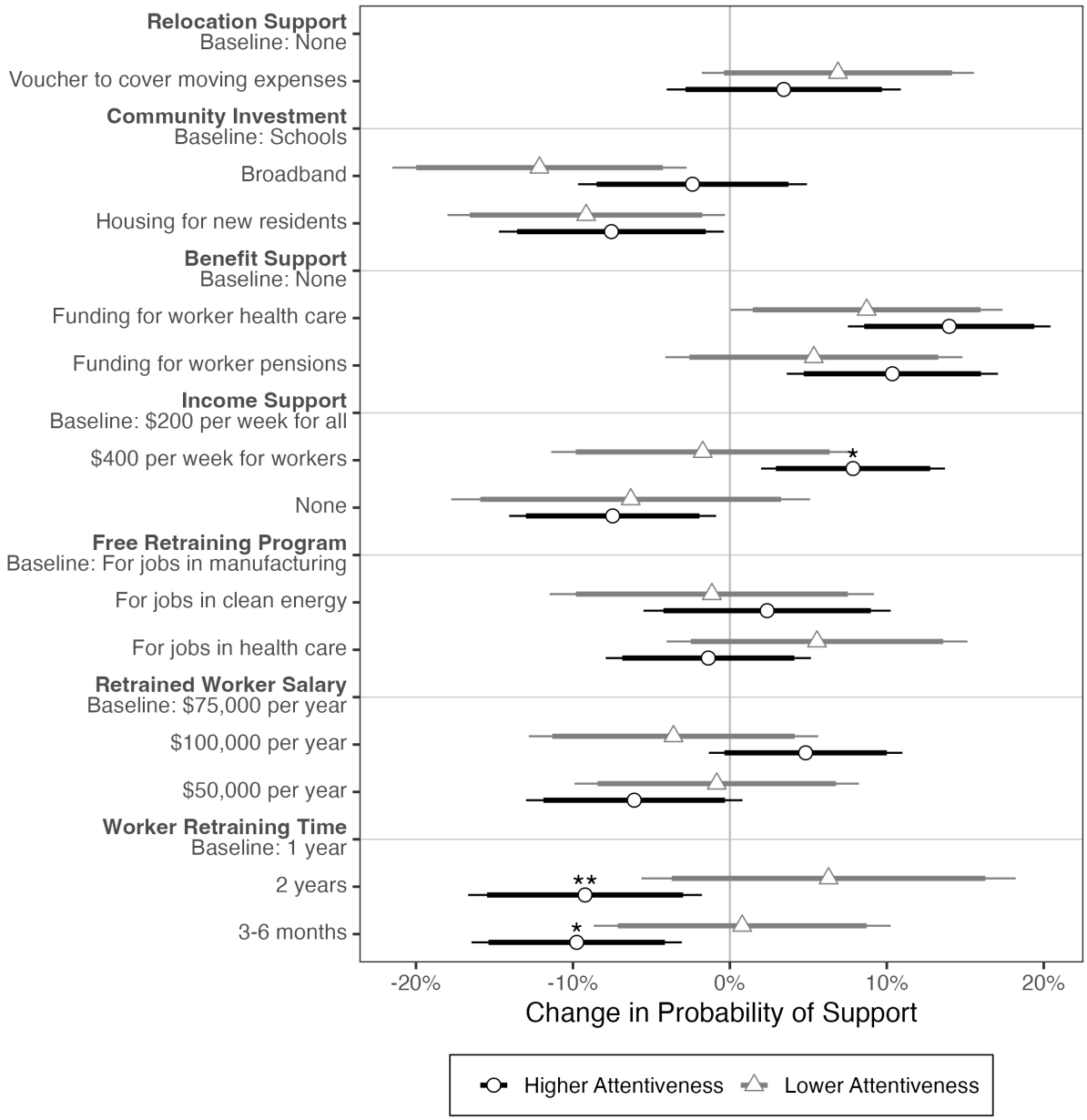
5.1 Sex



SI Figure 5.1: Treatment effect heterogeneity by sex. Bars denote 90 and 95% confidence intervals around heteroskedasticity-robust SEs clustered by respondent. Calibration weights are employed to enhance representativeness further. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the subgroups.

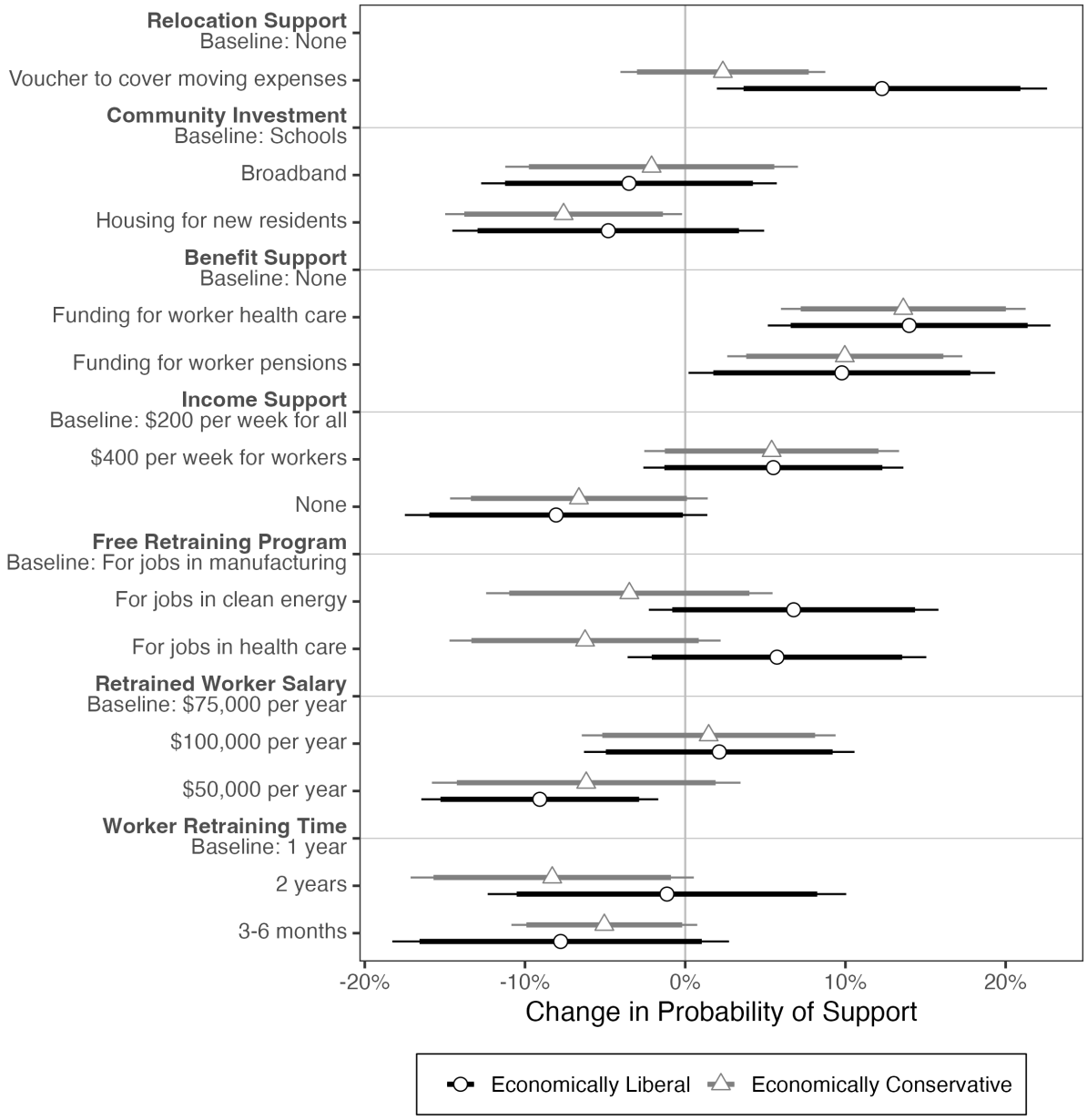
5.2 Attentiveness

Estimating AMCEs conditional on passing the attention check shows consistent or stronger results except for retraining time, perhaps due to income differences.



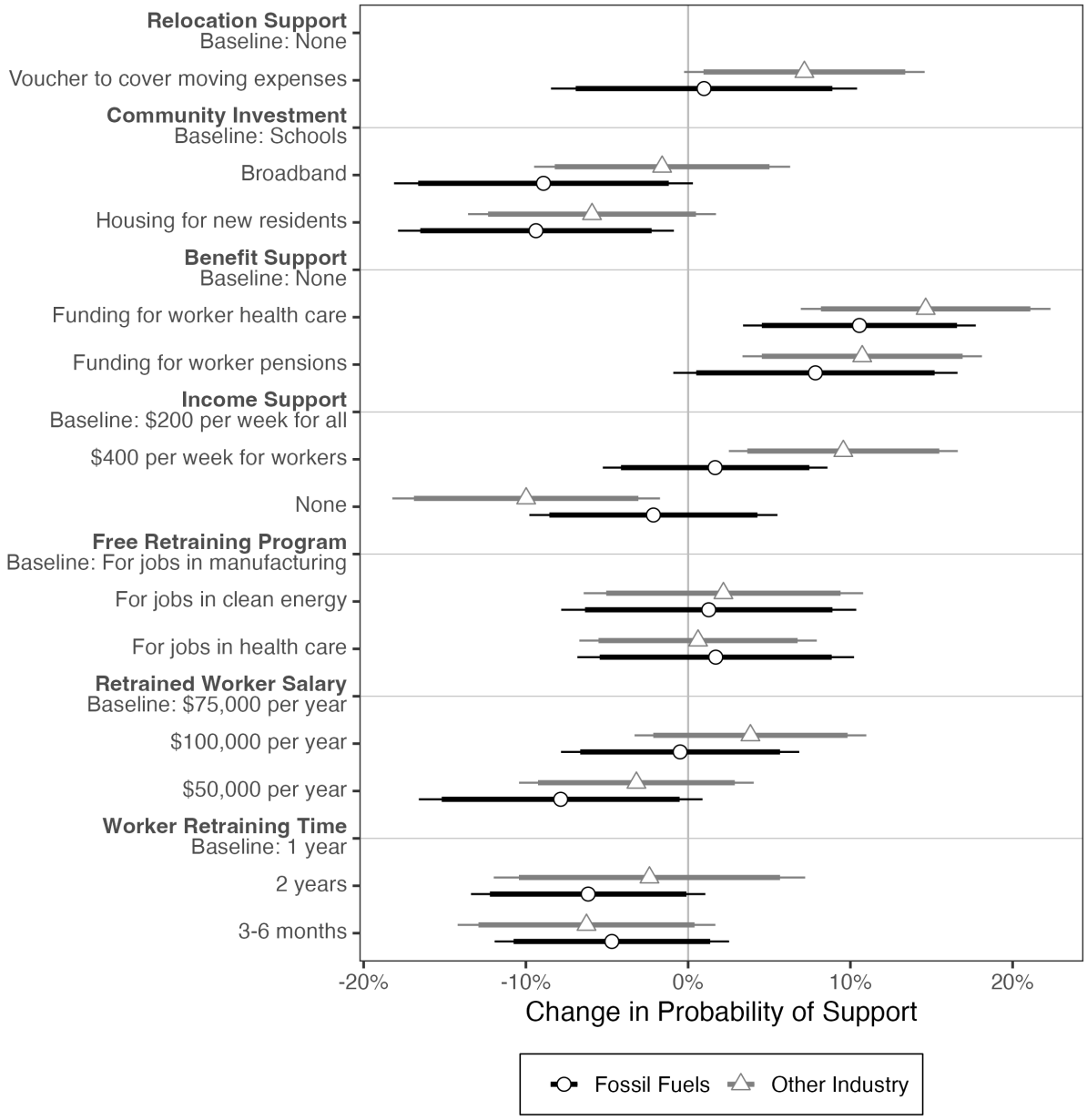
SI Figure 5.2: Treatment effect heterogeneity by attentiveness. Bars denote 90 and 95% confidence intervals around heteroskedasticity-robust SEs clustered by respondent. Calibration weights are employed to enhance representativeness further. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the subgroups.

5.3 Economic Conservatism



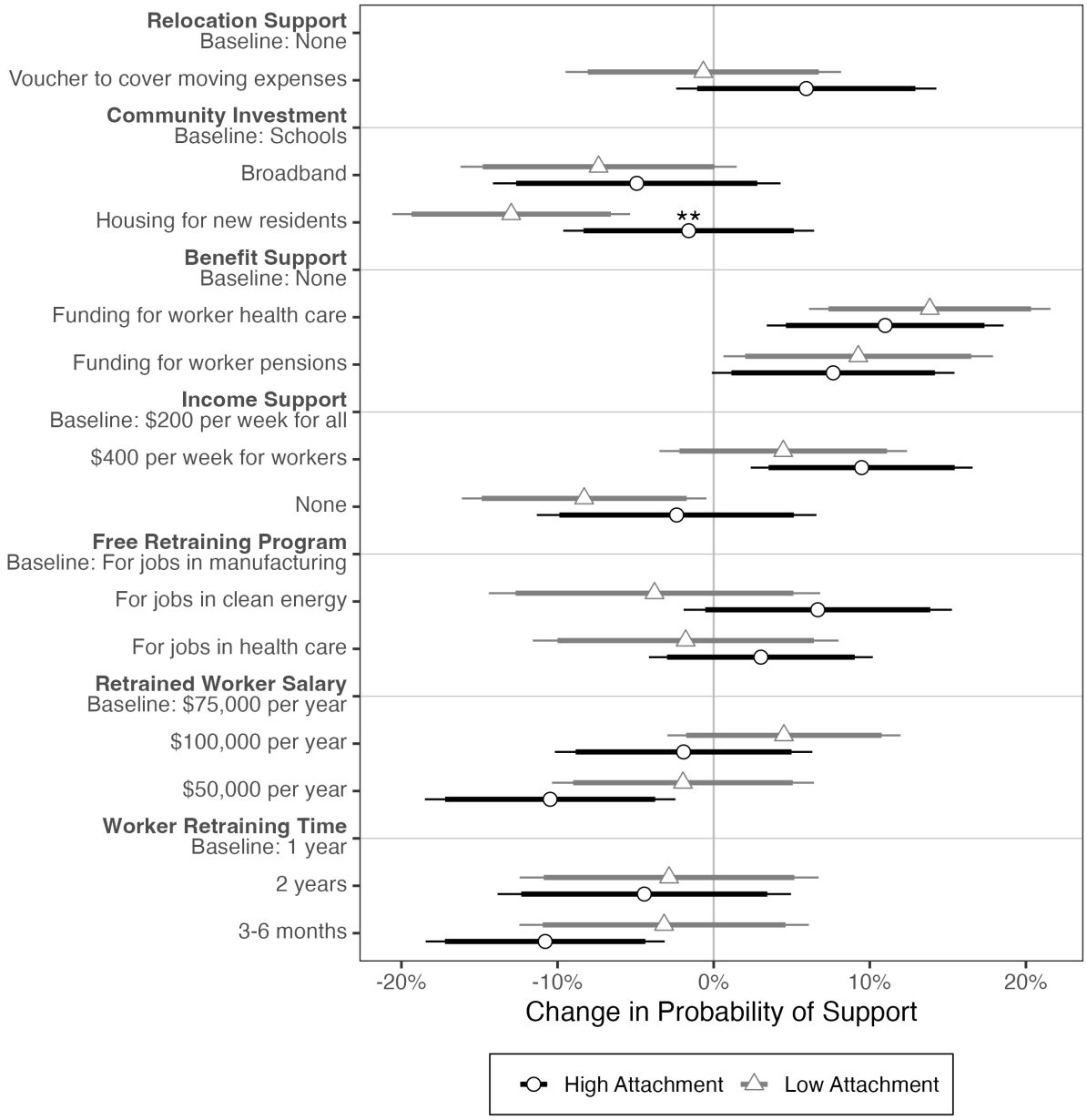
SI Figure 5.3: Treatment effect heterogeneity by economic conservatism. Bars denote 90 and 95% confidence intervals around heteroskedasticity-robust SEs clustered by respondent. Calibration weights are employed to enhance representativeness further. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the subgroups.

5.4 Fossil Fuel Employment



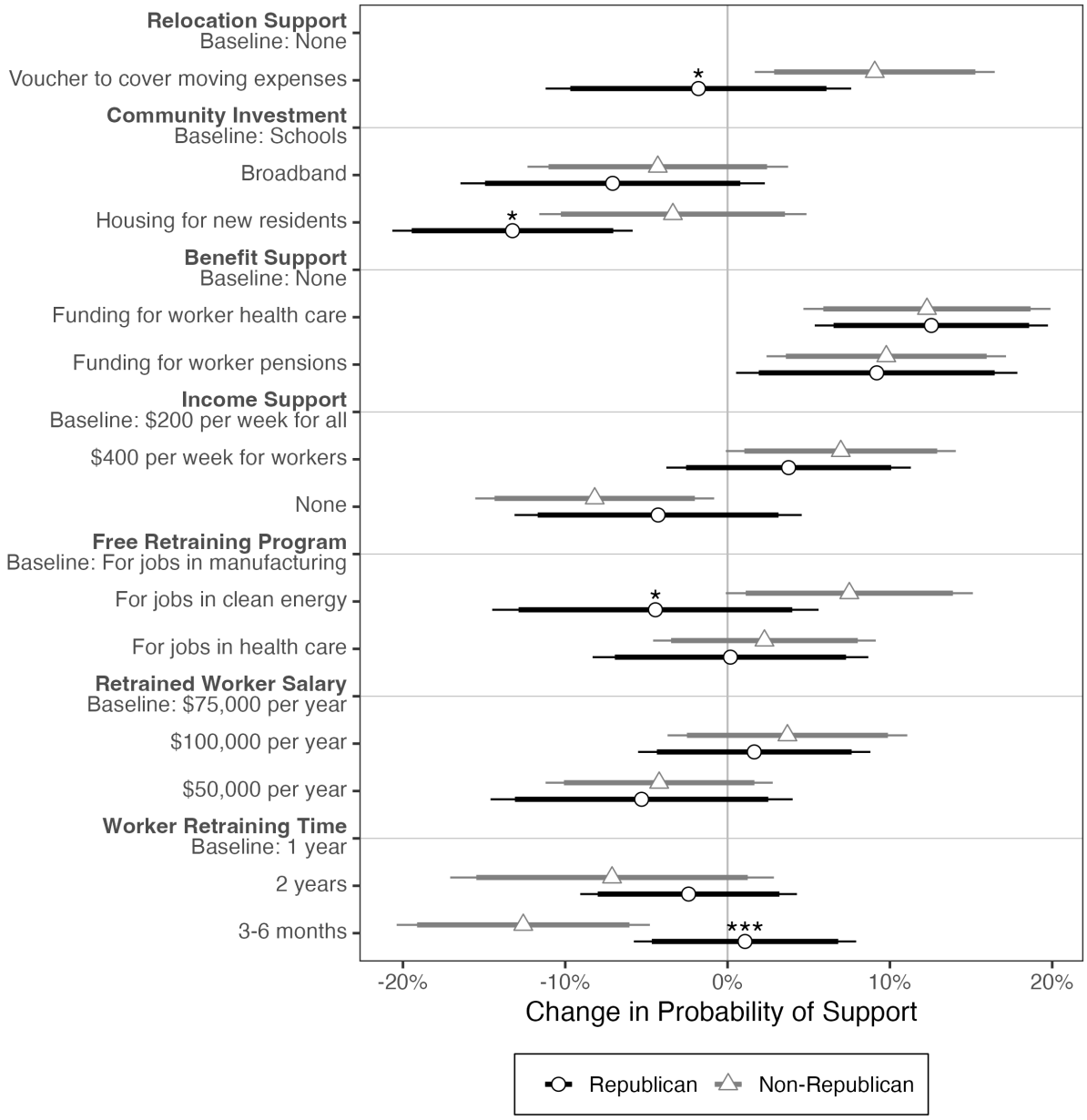
SI Figure 5.4: Treatment effect heterogeneity by household fossil fuel employment. Bars denote 90 and 95% confidence intervals around heteroskedasticity-robust SEs clustered by respondent. Calibration weights are employed to enhance representativeness further. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the subgroups.

5.5 Career Attachment



SI Figure 5.5: Treatment effect heterogeneity by household subjective career attachment. Bars denote 90 and 95% confidence intervals around heteroskedasticity-robust SEs clustered by respondent. Calibration weights are employed to enhance representativeness further. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the subgroups.

5.6 Partisanship



SI Figure 5.6: Treatment effect heterogeneity by Republican partisan identification. Bars denote 90 and 95% confidence intervals around heteroskedasticity-robust SEs clustered by respondent. Calibration weights are employed to enhance representativeness further. $^{*}p < 0.1$, $^{**}p < 0.05$, and $^{***}p < 0.01$ for two-sided hypothesis tests for a difference between the subgroups.

6 Conjoint Task Example

Round 1

Please read the proposals to help fossil fuel workers and communities. Then choose which proposal you would prefer the government to pursue.

Make sure to scroll to the bottom of the page.

	Proposal A	Proposal B
Benefit Support	None	Funding for worker pensions
Relocation Support	Voucher to cover moving expenses	None
Retrained Worker Salary	$50,000 per year	$75,000 per year
Worker Retraining Time	2 years	1 year
Community Investment	Schools	Schools
Free Retraining Program	For jobs in clean energy	For jobs in health care
Income Support During Retraining	$400 per week for workers	$400 per week for workers

If you had to choose, which proposal would you prefer the government to pursue?

○ Proposal A

○ Proposal B

SI Figure 6.1: Example of a conjoint task as seen by the respondent. Screenshot from Qualtrics survey instrument.

7 Survey Instrument

Consent

1. This is a research study by investigators from [[redacted institution]]. We hope to learn what people in your community think about coal, oil and gas. The survey should last around 5 minutes. Your responses are confidential.

   Your answers matter. We will share the study with politicians.

   If you are taking the survey in person, we will give you $5 cash once you complete the questions. All survey-takers – in person and online – will also be entered in a raffle for $100. The winner will be notified by email.

   Your participation is voluntary. There is no penalty if you decide not to participate. You may stop at any time. For questions, contact [[redacted contact information]]. For concerns, contact the Institutional Review Board at [[redacted institution]].

   Do you agree to participate?

   I agree to participate; I do not agree to participate

2. How old are you? (programming: skip to end of survey if "Under 18" selected)

   Under 18; 18-24; 25-34; 35-44; 45-54; 55-64; 65 or older

Economic conservatism

3. Some people feel that the government in Washington, D.C. should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on his own. Where would you place yourself on this scale, or have you not thought much about this?

   1 - Government Should See to Jobs; 2; 3; 4; 5; 6; 7 - Each on His Own; Haven't thought much about this

Mobility

4. If you had an offer for a job in a **different line of work** with the **same pay and benefits** as you have now, how likely or unlikely would you be to take it?

   Very likely; Somewhat likely; Somewhat unlikely; Very unlikely; I am not currently employed

5. How able or unable do you think you would be to move into a new line work, if you had to?

   Very able; Somewhat able; Somewhat unable; Very unable

Multi-attribute policy experiment

6. *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (randomize)[12]

   On the next few screens, you will be shown a pair of proposals. Please read the descriptions carefully. Then choose which proposal you would prefer the government to pursue.

   Your answers matter. We will share the study with politicians.

7. **Round 1** *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (keep randomization from introduction)

   Make sure to scroll to the bottom of the page.

   [Insert conjoint table.]

   If you had to choose, which proposal would you prefer the government to pursue?

   Proposal A; Proposal B

8. **Round 2** *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (keep randomization from introduction)

   Make sure to scroll to the bottom of the page.

   [Insert conjoint table.]

   If you had to choose, which proposal would you prefer the government to pursue?

   Proposal A; Proposal B

9. **Round 3** *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (keep randomization from introduction)

   Make sure to scroll to the bottom of the page.

[12] The purpose of this randomization was to evaluate whether providing information about the market-driven decline of coal would change support for different transition assistance instruments. The results in SI 5 show there are no statistically distinguishable differences in responses.

[Insert conjoint table.]

If you had to choose, which proposal would you prefer the government to pursue?

Proposal A; Proposal B

10. Which category was NOT included on the previous screens?

    Investment in nuclear power; Income support; Free retraining program; Community investment

11. **Round 4** *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (keep randomization from introduction)

    Make sure to scroll to the bottom of the page.

    [Insert conjoint table.]

    If you had to choose, which proposal would you prefer the government to pursue?

    Proposal A; Proposal B

12. **Round 5** *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (keep randomization from introduction)

    Make sure to scroll to the bottom of the page.

    [Insert conjoint table.]

    If you had to choose, which proposal would you prefer the government to pursue?

    Proposal A; Proposal B

13. **Round 6** *We are interested in your views on how the government should help fossil fuel workers and communities. / Because of cheap natural gas and renewables, a move away from coal may be inevitable. We are interested in your views on how the government should help fossil fuel workers and communities if that happens.* (keep randomization from introduction)

    Make sure to scroll to the bottom of the page.

    [Insert conjoint table.]

    If you had to choose, which proposal would you prefer the government to pursue?

    Proposal A; Proposal B

    Just a few more questions to go!

Global warming risk perceptions

14. How worried are you about global warming?

    Very worried; Somewhat worried; Not very worried; Not at all worried

Climate policy support

15. To fight global warming, politicians are considering policies to move away from fossil fuels. How likely or unlikely would you be to support such a policy if it included proposals to help fossil fuel workers and communities?[13]

    Very likely; Somewhat likely; Somewhat unlikely; Very unlikely

Coal competitiveness

16. Compared to natural gas and renewables, how competitive or uncompetitive do you think coal will be in the future?

    Very competitive; Somewhat competitive; Somewhat uncompetitive; Very uncompetitive

Green job beliefs[14]

17. Some

    politicians / power companies (randomize)

    say the growth of renewable energy like wind and solar will create new well-paying jobs.

    If these jobs come to your community, for how long do you think they would last?

    Very long; Somewhat long; Not very long; Not long at all

18. Compared to existing jobs in your community, how much better or worse do you think new renewable energy jobs would pay?

    Much better; Somewhat better; Somewhat worse; Much worse

---

[13]The proposals to help workers and communities referenced in the question are intentionally general to focus the respondent on the broader issue of whether she would support climate policy in exchange for assistance. The lack of specificity should decrease support by increasing uncertainty about the quality of the aid. Responses run along a four-point likelihood Likert scale. These results are descriptive, so we cannot estimate the causal effect of providing transition assistance on climate policy support, but the answers are nonetheless informative.

[14]These questions were for a separate project.

Fossil fuel proximity

19. What industry do you or a member of your household work in?

    Coal; Oil or gas; Renewables (for example: solar, wind); Other (please specify) (text box for "Other (please specify)")

20. Among the 10 people you know best in your community, roughly how many work in coal, oil or gas?

    None; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

Background

21. What is your sex?

    Male; Female

22. What is your race?

    Asian; Black/African American; Hispanic/Latino; Native American/Pacific Islander; White/Caucasian; Other (text entry box for "Other")

23. What is the highest degree or level of education you have completed?

    Less than high school diploma; High school diploma or GED; Some college, but no degree; Associates Degree (for example: AA, AS); Bachelor's Degree (for example: BA, BBA, BS); Master's Degree (for example: MA, MS, MEng); Professional Degree (for example: MD, DDS, JD); Doctorate (for example: PhD, EdD)

24. Do you or anyone else in your household belong to a labor union?

    Yes; No

25. Including yourself, how many people live in your household?

    1; 2; 3; 4; 5; 6; 7; 8; 9; 10 or more

26. Information about income is very important to understand. Please choose the answer that includes your entire household income in (previous year) before taxes.

    Less than $20,000; $20,000 to $39,999; $40,000 to $59,999; $60,000 to $79,999; $80,000 to $99,999; $100,000 to $119,999; $120,000 to $139,999; $140,00 to $159,999; $160,000 or more

27. Generally speaking, do you consider yourself a...?

    Republican; Democrat; Independent; Other Party

28. (If 27 is "Independent" or "Other Party") Do you think of yourself as closer to the Republican Party or the Democratic party?

    Closer to the Republican Party; Closer to the Democratic Party; Neither

29. What is your current employment status?

    Employed full-time; Employed part-time; Not employed, but looking for work; Not employed, and not looking for work; Student; Retired; Self-employed; Prefer not to say

End of survey

30. May we recontact you for future research surveys? We will enter you in an additional $100 raffle when you complete the next survey.

    Yes; No

31. (If 30 is "Yes") What email address should we reach you at for future surveys? Your email will be kept confidential. (text entry)

32. (If 30 is "No") What email address should we send the $100 to if you are selected in the raffle? Your email will be kept confidential.

33. Thank you for taking the time to complete this survey! When the study is completed, we will select a raffle winner. If your name is drawn, we will send you your $100 compensation. For questions, contact [[redacted]]. For concerns, contact the Institutional Review Board at [[redacted]].

8 Conjoint Regression Results

SI Table 8.1: Probability of selecting a policy with a given attribute level

	(1)	(2)	(3)	(4)	(5)
Intercept	0.485***	0.467***	0.481***	0.507***	0.503***
	(0.042)	(0.035)	(0.042)	(0.045)	(0.045)
Free Retraining Program (Baseline: For jobs in manufacturing)					
For jobs in clean energy	0.018	−0.011	0.019	0.019	0.019
	(0.032)	(0.025)	(0.032)	(0.036)	(0.037)
For jobs in health care	0.010	0.005	0.010	0.011	0.011
	(0.028)	(0.025)	(0.028)	(0.032)	(0.033)
Retrained Worker Salary (Baseline: $75,000)					
$100,000 per year	0.024	0.026	0.024	0.027	0.027
	(0.027)	(0.023)	(0.027)	(0.030)	(0.030)
$50,000 per year	−0.051*	−0.055**	−0.051*	−0.055*	−0.055*
	(0.029)	(0.025)	(0.029)	(0.032)	(0.032)
Income Support During Retraining (Baseline: $200 per week for all)					
$400 per week for workers	0.058**	0.066***	0.058**	0.063**	0.063**
	(0.026)	(0.022)	(0.026)	(0.030)	(0.030)
None	−0.064**	−0.059**	−0.064**	−0.070**	−0.071**
	(0.029)	(0.024)	(0.029)	(0.033)	(0.033)
Relocation Support (Baseline: None)					
Voucher to cover moving expenses	0.043	0.065***	0.043	0.045	0.045
	(0.030)	(0.020)	(0.030)	(0.034)	(0.034)
Community Investment (Baseline: Schools)					
Broadband	−0.049	−0.055**	−0.050	−0.054	−0.054
	(0.031)	(0.024)	(0.031)	(0.035)	(0.035)
Housing for new residents	−0.076***	−0.066***	−0.076***	−0.083**	−0.083**
	(0.029)	(0.023)	(0.029)	(0.033)	(0.033)
Benefit Support (Baseline: No Benefit Support)					
Funding for worker health care	0.127***	0.103***	0.127***	0.138***	0.138***
	(0.027)	(0.024)	(0.027)	(0.030)	(0.030)
Funding for worker pensions	0.096***	0.100***	0.097***	0.108***	0.108***
	(0.029)	(0.023)	(0.029)	(0.033)	(0.033)
Sample Weights	No	Yes	Yes	Yes	Yes
Task Fixed Effects	No	No	Yes	No	Yes
Individual Fixed Effects	No	No	No	Yes	Yes
Respondents	248	248	248	248	248
N	2974	2974	2974	2974	2974
Adjusted R^2	0.029	0.029	0.027	−0.056	−0.058

* p < 0.1, ** p < 0.05, *** p < 0.01

Notes: Estimates from a linear regression of an indicator for if a respondent selected a policy on indicators for levels of each conjoint attribute. Heteroskedastic-robust standard errors clustered by respondent. Adjusted R^2 is negative for the models with a large number of fixed effects due to penalization from a greater number of parameters.

SI Table 8.2: Probability of selecting a policy with a given attribute, differences across national and fossil fuel community samples

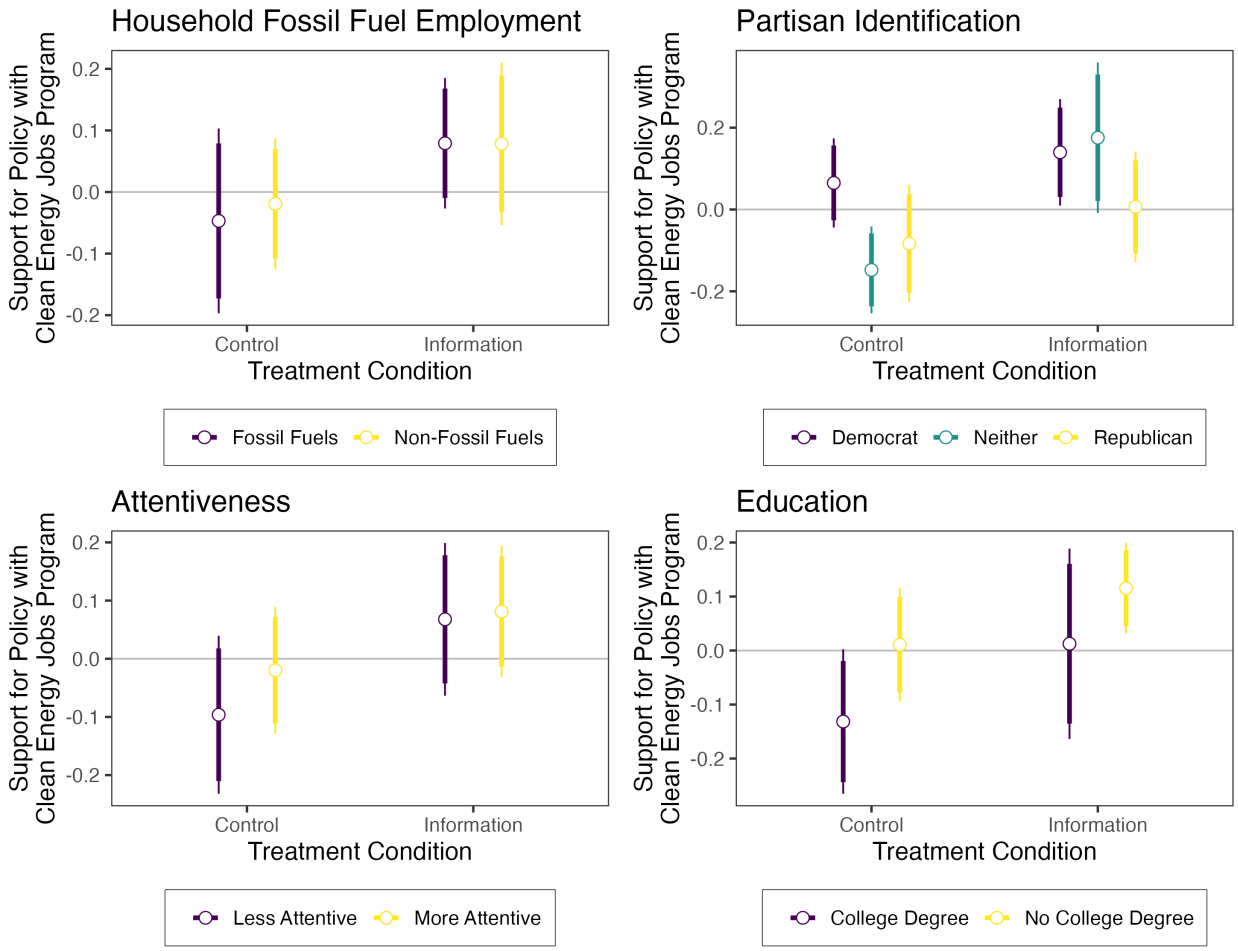
	(1)
Intercept	0.486***
	(0.047)
Community Investment: Broadband	−0.051
	(0.034)
Community Investment: Broadband × National	0.023
	(0.038)
Community Investment: Housing for new residents	−0.066**
	(0.033)
Community Investment: Housing for new residents × National	0.047
	(0.037)
Free Retraining Program: Clean Energy	0.024
	(0.037)
Free Retraining Program: Clean Energy × National	0.009
	(0.040)
Free Retraining Program: Health Care	0.018
	(0.031)
Free Retraining Program: Health Care × National	0.014
	(0.036)
Income Support During Retraining: $400 per week for workers	0.057**
	(0.027)
Income Support During Retraining: $400 per week for workers × National	0.009
	(0.033)
Income Support During Retraining	−0.070**
	(0.032)
Income Support During Retraining × National	−0.020
	(0.036)
Worker Retraining Time: 2 years	−0.042
	(0.038)
Worker Retraining Time: 2 years × National	0.065
	(0.042)
Worker Retraining Time: 3-6 Months	−0.062*
	(0.033)
Worker Retraining Time: 3-6 Months × National	0.089**
	(0.038)
Benefit Support: Worker Health Care	0.133***
	(0.028)
Benefit Support: Worker Health Care × National	−0.030
	(0.034)
Benefit Support: Pensions	0.093***
	(0.031)
Benefit Support: Pensions × National	−0.022
	(0.035)
Retrained Worker Salary: $100,000 per year	0.022
	(0.027)
Retrained Worker Salary: $100,000 per year × National	−0.010
	(0.032)
Retrained Worker Salary: $50,000 per year	−0.045
	(0.030)
Retrained Worker Salary: $50,000 per year × National	−0.027
	(0.035)
Relocation Support: Voucher to Cover Moving Expenses	0.026
	(0.034)
Relocation Support: Voucher to Cover Moving Expenses × National	0.068*
	(0.037)
Num.Obs.	12 984
R2	0.039
R2 Adj.	0.037

Notes: Estimates from a linear regression of an indicator for if a respondent selected a policy on indicators for levels of each conjoint attribute, interacted with a dummy variable for whether the respondent is in the national sample. Heteroskedastic-robust standard errors clustered by respondent. Model employs sample weights. $^{*}p < 0.1$,$^{**}p < 0.05$,$^{***}p < 0.01$

9 Information Experiment

9.1 Heterogeneous Treatment Effects

SI Figure 9.1: Heterogeneous effects of the information treatment on support for a free retraining program for clean energy jobs



9.2 Regression Results

SI Table 9.1: Effect of Information Intervention on Preferences over Transition Assistance Design

	Fossil Fuel			National		
	(1)	(2)	(3)	(4)	(5)	(6)
Community Investment: Broadband	−0.09**	−0.08**	−0.09**	−0.04*	−0.03	−0.04*
	(0.04)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)
Community Investment: Housing for new residents	−0.09**	−0.09***	−0.09**	−0.03	0.01	−0.03
	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.03)
Free Retraining Program: For jobs in clean energy	−0.03	−0.06*	−0.03	0.06**	0.04**	0.06**
	(0.05)	(0.03)	(0.05)	(0.02)	(0.02)	(0.02)
Free Retraining Program: For jobs in healthcare	0.00	0.01	0.01	0.07**	0.00	0.07**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)
Income Support During Retraining: $400 per week for workers	0.08**	0.08**	0.08**	0.04*	0.03*	0.04*
	(0.04)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)
Income Support During Retraining: None	−0.05	−0.05	−0.05	−0.11***	−0.11***	−0.11***
	(0.04)	(0.03)	(0.05)	(0.03)	(0.02)	(0.03)
Worker Retraining Time: 2 years	−0.06	−0.05	−0.06	0.07***	0.03*	0.07***
	(0.05)	(0.03)	(0.05)	(0.02)	(0.02)	(0.02)
Worker Retraining Time: 3-6 months	−0.06	−0.04	−0.07	0.04	0.02	0.04
	(0.05)	(0.03)	(0.05)	(0.02)	(0.02)	(0.02)
Benefit Support: Funding for worker health care	0.11***	0.09**	0.11***	0.13***	0.11***	0.13***
	(0.04)	(0.04)	(0.04)	(0.03)	(0.02)	(0.03)
Benefit Support: Funding for worker pensions	0.08*	0.08**	0.08*	0.10***	0.09***	0.10***
	(0.04)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)
Retrained Worker Salary: $100,000 per year	0.00	0.00	0.00	0.01	0.04**	0.01
	(0.04)	(0.03)	(0.04)	(0.03)	(0.02)	(0.03)
Retrained Worker Salary: $50,000 per year	−0.04	−0.07**	−0.04	−0.07***	−0.06***	−0.07***
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
Relocation Support: Voucher to cover moving expenses	0.03	0.07**	0.03	0.09***	0.09***	0.09***
	(0.05)	(0.03)	(0.05)	(0.02)	(0.01)	(0.02)
Community Investment: Broadband x Information	0.08	0.04	0.09	0.03	−0.03	0.03
	(0.06)	(0.05)	(0.06)	(0.03)	(0.02)	(0.03)
Community Investment: Housing for new residents x Information	0.02	0.03	0.02	0.01	−0.04	0.01
	(0.06)	(0.05)	(0.06)	(0.03)	(0.02)	(0.03)
Free Retraining Program: For jobs in clean energy x Information	0.11*	0.10*	0.11*	−0.05	−0.02	−0.05
	(0.06)	(0.05)	(0.06)	(0.03)	(0.03)	(0.03)
Free Retraining Program: For jobs in healthcare x Information	0.01	−0.01	0.01	−0.08**	−0.02	−0.08**
	(0.06)	(0.05)	(0.06)	(0.04)	(0.03)	(0.04)
Income Support During Retraining: $400 per week for workers x Information	−0.03	−0.02	−0.03	0.05	0.06**	0.05
	(0.05)	(0.04)	(0.05)	(0.04)	(0.03)	(0.04)
Income Support During Retraining: None x Information	−0.03	−0.02	−0.03	0.03	0.05*	0.03
	(0.06)	(0.05)	(0.06)	(0.04)	(0.03)	(0.04)
Worker Retraining Time: 2 years x Information	0.02	0.04	0.02	−0.09***	−0.04*	−0.09***
	(0.06)	(0.05)	(0.06)	(0.03)	(0.02)	(0.03)
Worker Retraining Time: 3-6 months x Information	0.02	0.03	0.02	−0.02	−0.03	−0.02
	(0.05)	(0.05)	(0.06)	(0.04)	(0.02)	(0.04)
Benefit Support: Funding for worker health care x Informationn	0.04	0.02	0.04	−0.05	0.00	−0.05
	(0.05)	(0.05)	(0.05)	(0.04)	(0.02)	(0.04)
Benefit Support: Funding for worker pensions x Information	0.05	0.04	0.05	−0.06*	0.00	−0.06*
	(0.06)	(0.05)	(0.06)	(0.03)	(0.02)	(0.03)
Retrained Worker Salary: $100,000 per year x Information	0.05	0.06	0.05	−0.01	−0.02	−0.01
	(0.05)	(0.05)	(0.05)	(0.03)	(0.02)	(0.04)
Retrained Worker Salary: $50,000 per year x Information	−0.02	0.04	−0.02	0.00	−0.01	0.00
	(0.06)	(0.05)	(0.06)	(0.04)	(0.02)	(0.04)
Relocation Support: Voucher to cover moving expenses x Information	0.03	−0.01	0.03	0.00	0.01	0.00
	(0.06)	(0.04)	(0.06)	(0.03)	(0.02)	(0.03)
N	2974	2974	2974	10 010	10 010	10 000
Adjusted R^2	0.030	0.028	0.025	0.042	0.043	0.041
Sample Weights	Yes	No	Yes	Yes	No	Yes
Covariates	No	No	Yes	No	No	Yes

Notes: Heteroskedasticity-robust standard errors clustered by respondent. $^{*}p < 0.1$; $^{**}p < 0.05$; and $^{***}p < 0.01$.

10 Correlates of Climate Policy Support

SI Table 10.1: Regression models of the determinants of climate policy support in exchange for transition assistance

	Ordered Logit		Linear	
	(1)	(2)	(3)	(4)
Intercepts				
Very unlikely/Somewhat unlikely	−0.739	−0.625		
	(0.559)	(0.589)		
Somewhat unlikely/Somewhat likely	0.130	0.164		
	(0.558)	(0.589)		
Somewhat likely/Very likely	1.658***	1.767***		
	(0.568)	(0.598)		
Intercept			2.276***	2.285***
			(0.297)	(0.325)
Age (Baseline: 18-34 years)				
35-54 years	−0.085	−0.097	−0.056	−0.101
	(0.280)	(0.315)	(0.165)	(0.198)
>55 years	−0.112	−0.499	−0.086	−0.290
	(0.325)	(0.318)	(0.179)	(0.201)
Female	−0.219	−0.161	−0.061	−0.035
	(0.255)	(0.262)	(0.151)	(0.178)
College Degree	0.395	0.785**	0.179	0.324
	(0.336)	(0.311)	(0.184)	(0.202)
Fossil Fuel Employment	−0.341	−0.197	−0.159	−0.073
	(0.260)	(0.261)	(0.152)	(0.195)
Income (Baseline: >$100,000)				
<$20,000	0.167	0.497	0.091	0.216
	(0.433)	(0.445)	(0.256)	(0.307)
$20,000-39,999	−0.144	0.253	−0.087	0.134
	(0.444)	(0.425)	(0.252)	(0.305)
$40,000-59,999	0.351	1.022**	0.162	0.516*
	(0.414)	(0.447)	(0.251)	(0.305)
$60,00-99,999	0.431	0.710*	0.222	0.350
	(0.349)	(0.374)	(0.200)	(0.231)
Party (Baseline: Democrat)				
Republican	−0.623**	−0.916***	−0.290*	−0.419**
	(0.295)	(0.287)	(0.168)	(0.206)
Independent	−0.331	−0.812*	−0.200	−0.445
	(0.391)	(0.415)	(0.240)	(0.327)
Climate Concern	1.418***	1.341***	0.794***	0.719***
	(0.274)	(0.278)	(0.155)	(0.202)
Diversify Treatment	−0.329	−0.457*	−0.170	−0.215
	(0.241)	(0.248)	(0.139)	(0.183)
Sample Weights	No	Yes	No	Yes
Fair Fixed Effects	Yes	Yes	Yes	Yes
N	248	248	248	248
Adjusted R^2			0.132	0.191
BIC	710.3	678.6	799.3	841.5

Notes: HC3 standard errors employed in the linear regression model. Less than 2.5% of missing income and sex observations imputed with median response. * p < 0.1, ** p < 0.05, *** p < 0.01

11 Effect of Transition Assistance on Climate Policy Support

SI Table 11.1: Linear Regression of Climate Policy Support on Transition Assistance Treatment, National Population

	Binary				Scale	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment: Transition Assistance	0.078***	0.082***	0.052*	0.013	0.173***	0.184***
	(0.026)	(0.024)	(0.031)	(0.022)	(0.058)	(0.052)
Treatment x Independent				0.214***		
				(0.073)		
Treatment x Republican				0.100*		
				(0.056)		
Age		−0.003***	−0.004***	−0.003***		−0.007***
		(0.001)	(0.001)	(0.001)		(0.002)
Male		−0.009	−0.002	−0.009		0.012
		(0.025)	(0.031)	(0.025)		(0.056)
Black		0.008	0.033	0.008		0.001
		(0.033)	(0.047)	(0.033)		(0.071)
Hispanic		0.026	0.025	0.023		0.030
		(0.030)	(0.038)	(0.029)		(0.065)
Fossil Fuel Employment		0.011	−0.018	0.013		0.034
		(0.033)	(0.049)	(0.033)		(0.077)
Employed		0.080***	0.084**	0.082***		0.161***
		(0.029)	(0.040)	(0.029)		(0.061)
College Degree		0.029	0.044	0.031		0.036
		(0.029)	(0.036)	(0.029)		(0.063)
Income: 1st Quartile		0.063	0.052	0.063		0.035
		(0.040)	(0.055)	(0.040)		(0.087)
Income: 2nd Quartile		0.045	0.037	0.044		0.016
		(0.036)	(0.046)	(0.036)		(0.079)
Income: 3rd Quartile		0.018	0.006	0.017		−0.017
		(0.036)	(0.043)	(0.036)		(0.081)
Income: Not Say		−0.045	0.007	−0.027		−0.228
		(0.131)	(0.231)	(0.134)		(0.213)
Republican		−0.346***	−0.319***	−0.394***		−0.824***
		(0.029)	(0.039)	(0.040)		(0.062)
Independent		−0.235***	−0.236***	−0.347***		−0.602***
		(0.037)	(0.050)	(0.059)		(0.074)
Intercept	0.744***	0.978***	1.025***	1.009***	2.990***	3.609***
	(0.020)	(0.061)	(0.084)	(0.060)	(0.043)	(0.130)
N	1001	1000	1000	1000	1001	1000
Adjusted R^2	0.008	0.205	0.217	0.212	0.008	0.228
Sample Weights	No	No	Yes	No	No	No

Notes: HC3 standard errors. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$

12 Pre-Analysis Plan

The researcher pre-registered hypotheses with the Center for Open Science before data collection [[link redacted]]. There are two modifications from the pre-analysis plan. First, we attempted to collect a sample using targeted Facebook advertisements in fossil fuel-producing counties but discarded this approach due to recruitment challenges. Second, we planned to estimate the average component preferences in addition to our main AMCE estimand (Ganter 2021), but could not do so due to sample size constraints that rendered standard errors unreliable. The pre-analysis plan also included hypotheses for a separate project.

We also pre-registered the following hypotheses derived from theoretical arguments advanced in the literature but did not focus on them in the main text due to space and exposition.

- *Occupational Identity.* Status-conscious men in male-dominated industries like coal and oil internalize hard and dangerous work as part of their identity. They may perceive industries like healthcare, to which they could transition, as feminine and thus less desirable (Bell and York 2010; Lamont 2000; Winant 2021). Training programs for the healthcare industry could be less likely to create support for the policy, especially among men, but less so for those with low career attachment.

- *Community Identity.* Communities based around extractive industries like coal mining or logging often have strong identities tied to the place and occupation, influencing their policy preferences (Bell and York 2010). Place-based attachments filter how residents make sense of distributive issues like climate policy, emphasizing community rather than individual welfare (Cramer 2016; Wong 2010). Strong community economic identity could have the following effects on preferences over transition assistance: relocation assistance could decrease policy support due to fear of out-migration; place-based investment in housing for new residents could weaken backing for transition assistance since outsiders may alter the identity of the community; investments in local public goods like schools and broadband create incentives for people to stay put and should raise the probability of support; and community-wide income assistance should increase favorable assessments of the policy, as found in other studies (Gaikwad, Genovese, and Tingley 2022).

- *Economic Conservatism.* Distrust of the federal government and ideological views about the appropriate role of the state in creating jobs could condition the effect of transition assistance on policy support (Cha 2020; Cramer 2016). Individuals with economically conservative worldviews may be less likely to support transition assistance that supports lost income, benefits, and relocation costs since these policies contradict their ideology.

- *Public Goods.* Preferences may differ for transition assistance that is excludable depending on if one has access to the good. Fossil fuel workers should support policies that provide targeted income support to carbon-intensive labor. In contrast, individuals in the area would prefer non-excludable income support for the entire community (Gaikwad, Genovese, and Tingley 2022). Although, community members should still

support targeted assistance for workers due to their perceived deservingness (Gilens 2000). Examining the scope of assistance is also important because citizens may perceive resource trade-offs.

SI 5 displays the conditional AMCEs, which test the additional hypotheses advanced in the literature.

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