The Resilient Effect of Process on Perceived Fairness and Legitimacy in Wind Energy Siting

Michael Hankinson*

December 23, 2025

Abstract

Research on energy siting conflict argues that high levels of local control and public input increase the perceived fairness of the permitting process. However, these studies largely rely on retrospective evaluations, meaning respondents may form their attitudes about procedural fairness and legitimacy based on whether they secure their preferred policy outcome. In contrast, I use experimental designs to randomly vary whether respondents learn the policy outcome prior to judging the permitting process. Across two pre-registered survey experiments, state control and limited public input decrease the perceived fairness and legitimacy of wind turbine siting. This relationship is unaltered by knowing the policy outcome. However, the resilient effect of these specific process on legitimacy is only around half the size as the effect of getting one's preferred policy outcome. Consequently, studies which measure public perceptions after siting may largely capture the effect of the outcome, rather than that of process alone.

Word Count: 2,954 words, excluding Methods and References.

Keywords: energy policy, wind energy, energy justice, political science, federalism

For helpful feedback, I thank Brandon Bartels, Chris Elmendorf, Jeremy Firestone, Andy Guess, and Adrian Pietrzak, and participants in the American Politics Workshop at George Washington University. Special thanks to Grace Truslow for research assistance.

*Assistant Professor, Department of Political Science, George Washington University.

Despite infusions of funding into wind energy, local opposition presents a major obstacle to deployment in the United States. Survey evidence finds that 1 in 3 recent wind energy projects have been canceled due to community protest (Nilson et al. 2024) and the rate of protest is growing (Stokes et al. 2023). The main drivers of local opposition to wind turbines are concerns about quality of life, property values, local identity, and perceptions of an unfair siting process (Devine-Wright and Howes 2010; Susskind et al. 2022; Wolsink 2007). Procedural fairness is of particular concern. An unfair process may erode the legitimacy of the decision (Tyler 1994), discouraging residents from participating in future siting decisions and risking broader distrust in government (Grimes 2006).

How does the energy siting process affect procedural fairness and legitimacy? Case studies and surveys suggest that residents are more supportive of projects that emerge from intense community engagement (e.g., Elmallah and Rand 2022; Firestone et al. 2018, 2020, 2012; Gross 2007; Hoen et al. 2019). However, the vast majority of observational studies ask respondents about the fairness of the process after the outcome—approval or denial—is known. Consequently, the relationship between process and fairness is endogenous. A high level of community engagement may have altered the project's design, meaning engagement has affected both the process and the outcome. Furthermore, respondents' evaluations of the process may be influenced by whether they approve of the eventual outcome (e.g., Bingaman, Firestone and Bidwell 2023).

An alternative to observational study is to use an experimental design to measure the causal effect of the siting process on perceived fairness and legitimacy. For example, Liu et al. (2020) randomly vary the role of public input in the approval of a wind energy proposal, then ask about the acceptability of the project. While Liu et al. (2020) find that community input improves procedural fairness, the experiment does not include any information about the project's outcome. Thus, the mechanism is unclear. Respondents may have expressed support for higher levels of community engagement because they believed it would lead to more favorable outcomes (e.g., project down-sizing), not because engagement alone increased

the acceptability of all potential outcomes. Simply put, existing research has not separated the effect of local control and community engagement from expectations of policy outcomes.

In contrast, I use two pre-registered survey experiments to break this problem of endogeneity. In the surveys, respondents were asked to evaluate a hypothetical wind farm of sixty 340 foot tall turbines proposed for their community.[1] First, I isolate the effect of process on the perceived fairness and legitimacy of the siting decision. In Experiment 1 ($n = 1,995$ rural and suburban respondents), I randomly vary whether the permitting decision will be made by either respondents' local elected officials with a high-level of public input or a state-appointed board of policy experts with limited public input. These two combinations of control and input match the most common permitting processes found in the United States (Chaudhuri and Susskind 2024). Second, I randomized respondents into one of two branches: either seeing or not seeing the policy outcome.

Among respondents who do not know the policy outcome, state-appointed board control with limited public input decreases the perceived fairness of the siting process by 10 percentage points ($d = 0.37$). Furthermore, this negative effect is resilient to information about the policy outcome. Getting one's preferred policy does not alter the independent effect of who makes the decision and with what level of public input.

In Experiment 2 ($n = 3,163$ rural respondents), I decouple the process treatment into two components: the government body making the siting decision (local elected officials versus a state-appointed board) and the level of public input. Public input comes in the form of either "face-to-face public meetings with decision makers" or "an email-based submission portal, but with no public meetings," the latter akin to public comment in federal bureaucratic rulemaking. Along with perceived fairness, Experiment 2 also includes an original four question scale of outcome legitimacy, one's willingness to accept the decision as final and just.[2]

[1] 340 feet reflects the hub height, but visuals in the experiments depicted the blade tip height. I discuss the implications for the study's findings in Appendix C.

[2] See Section E for validation of the legitimacy scale.

Experiment 2 replicates the findings of Experiment 1. Both state control and limited public input decrease perceived fairness; these effects are resilient to knowing whether the wind proposal is eventually approved or denied. Experiment 2 also shows that limited public input has a larger negative effect on fairness compared to the institution making the decision. For the public, having a say is more legitimizing than who decides. Furthermore, these negative effects of process extend beyond fairness, decreasing the overall legitimacy of the policy outcome.

Still, the effect of these specific process on legitimacy is only around half the size of getting one's preferred policy outcome. Thus, this study makes two contributions to our understanding of energy siting and political conflict. First, public input and local control have a causal effect on both the perceived fairness of the siting process and the legitimacy of siting outcomes. A fairer process can help legitimize outcomes, even ones voters disagree with. Second, studies measuring fairness and legitimacy after the siting process is complete may largely capture whether respondents' support the policy outcome, not the effect of the process alone.

Main

Process versus Policy in Wind Turbine Siting

The effect of process independent of outcome can be viewed through *procedural fairness theory.* The three-step theory begins with a decision being made using a procedure, such as the decision to build a piece of energy infrastructure. Next, an observer evaluates the fairness of the procedure. Finally, the observer's assessment of fairness leads to either the acceptance or rejection of the decision—otherwise known as legitimacy (Tyler 1994).

For observational research on procedural fairness, separating the effect of process from the effect of the policy outcome is challenging. Voters may express attitudes about process, but abandon these procedural principles in favor of a preferred outcome (Prothro and Grigg

1960). As a result, it is reasonable to be skeptical when opponents claim that their concerns are over process and independent of the policy outcome.

Despite this challenge, measuring these independent forces is critical given the evolving context of energy siting. Since the 1970's, community engagement has been an essential part of infrastructure permitting (Altshuler and Luberoff 2004). While most projects address regional needs, new infrastructure often has spatially concentrated costs, mobilizing local opposition. Even in Denmark, a country with majority public support for more wind energy installations, local opposition pushes municipal officials to site turbines in the least politically damaging areas (Andersen et al. 2025).

Among researchers, the primary recommendation for winning local support is greater community control and public input (e.g., Elmallah and Rand 2022; Firestone et al. 2018, 2020, 2012; Gross 2007; Hoen et al. 2019). More community voice may not only produce projects better tailored to local conditions, but also increase siting legitimacy. Even if the decision conflicts with their preferences, local voters may be more willing to view the outcome as valid due to a fair process. But if appeals to procedural justice are just a tactic to secure one's preferred policy, then reforms which create more local veto points will not only constrain the supply of collective goods (e.g., Brooks and Liscow 2023; Hankinson and Magazinnik 2023), but may do nothing to increase voters' acceptance of unpopular outcomes.

Measuring the Effect of Process

Approaches to measuring the effect of process on perceived fairness in energy siting largely rely on observational methods. Case studies and surveys build on retrospective correlations between the community engagement process and a sense of procedural fairness (Firestone et al. 2018, 2020; Gross 2007; Hoen et al. 2019; Ryder et al. 2023) as well as support for the project overall (Nilson and Stedman 2023). For studies which only sample residents living near approved projects, researchers cannot observe projects which had processes deemed

unfair enough that opponents derailed approval.[3] Finally, retrospective reflections will inherently struggle to account for endogeneity. Recalled preferences are not only subject to measurement error over time, but also Tiebout (1956)-style sorting wherein the wind farm's greatest opponents may be more likely to leave the area once siting is approved (e.g., Firestone et al. 2018).

Experimental designs can break this endogeneity (e.g., Liu et al. 2020). Though as stated above, the design needs to specify and separately randomize both the process and the outcome. Otherwise, if respondents believe that more community engagement would lead to a "better" outcome—such as the project being down-sized—then even an experiment cannot disentangle process from outcome.

Wind Turbine Siting Institutions

Identifying the link between institutions and procedural fairness is highly relevant for energy siting policy. Recently, several states, including Illinois, California, New York, Wisconsin, and Michigan have shifted decision making over utility-scale wind and solar facilities from local governments to state-appointed boards of experts. Other states have had strong state control for much longer, including Connecticut, Maryland, West Virginia, and North Carolina. Another 20 states maintain a hybrid approach, where large-scale energy facilities and transmission lines are approved at the state level (Chaudhuri and Susskind 2024). While preemption allows for approval from a state-appointed body, it also requires varying levels of public engagement. Still, the level of public input almost always falls short of the input gathered through locally elected decision-making bodies.

Outside of the above states, local governments control decision making over new wind facilities. Compared to a state-appointed board, local legislators are elected and thus incentivized to keep their votes more closely aligned with residents' attitudes. Additionally, local legislators will hold more in-person public hearings on wind turbines, facilitating a higher

[3]Notably, Firestone et al. (2020, 2012) mitigate this concern by conducting pre-construction and post-construction surveys of attitudes, and find that perceived fairness increased overtime.

level of face-to-face public input. There is growing evidence that these meetings are influential in decision making, as they send strong signals to elected officials about the preferences of likely voters in what are generally low turnout elections (Dynes, Karpowitz and Monson N.d.; Sahn 2025).

Analytical Approach

Prior to data collection, I pre-registered two experimental designs. For clarity, I describe the common points of inquiry below. Complete pre-analysis plans and all pre-registered tests are included in the Supplementary Information.

The experiments proposed a wind farm within eyesight of a respondent's neighborhood, highlighting the scale of the proposal as well as expected local benefits and costs commonly discussed in siting campaigns (e.g., Caggiano et al. 2024). The proposal randomly varied the level of government making the decision, the level of public input, the policy outcome, and whether respondents saw this outcome prior to evaluating the process. Dependent variables included the perceived fairness of the decision-making process and the legitimacy of the policy outcome. The key points of inquiry are as follows:

What is the effect of state control and limited public input when the outcome is not known? People tend to prefer local control over land use in their community. Perhaps they prefer the closer connection to decision-making processes (principle-based) or because they believe they are more likely to see policy outcomes that align with their own preferences (policy-based). To test the effect of state control and limited public input, I regress the fairness and legitimacy dependent variables on the process treatments using respondents who were not informed of the policy outcome (Branch 1), allowing for both of the above mechanisms.

Does knowing the policy outcome alter the effect of the process? If process has a sincere, independent effect on the fairness and legitimacy of decisions, then providing

respondents with the outcome should not change the effect of process. In contrast, if policy outcomes drive evaluations of procedural fairness, then the effect of state control and limited input on fairness and legitimacy should be substantively smaller if not null for respondents who are informed of the policy outcome (Branch 2). To assess this relationship, I regress the fairness and legitimacy dependent variables on the process treatments interacted with the respondents' assigned branch using the full sample.

Effect of Process When Outcome Is Unknown

Figure 1 shows the effect of process on the perceived fairness and legitimacy of the turbine siting among respondents who do not know the policy outcome (Branch 1). All results are reported from OLS regressions including demographic controls.[4]

In Experiment 1, respondents told that the decision would be made by a state-appointed board with low public input were 10 percentage points ($d = 0.37$) less likely to perceive the decision-making process as fair. This effect is larger among those who tend to mostly agree with policies decisions made by their local government (Section F). This 10 point effect is unchanged even when controlling for pretreatment support for the wind farm, concern for climate change, and the wind farm's expected effects on local property values (Table I-6).

Experiment 2 decouples Experiment 1's compound treatment into separate treatments for the level of decision making and public input. Having the decision made by a state-appointed board decreases fairness by 3 points ($d = 0.11$), compared to a decision by local elected officials. Holding no public meetings decreases fairness by 9 points ($d = 0.29$), compared to holding in-person meetings. The difference between these effects is statistically significant.

Experiment 2 also extends the effect of process to outcome legitimacy. Having the decision made by a state-appointed board of experts decreases legitimacy by 2 points ($d = 0.13$) and holding no public meetings decreases legitimacy by 3 points ($d = 0.15$). Altogether,

[4]See Section I for results in tabular form.

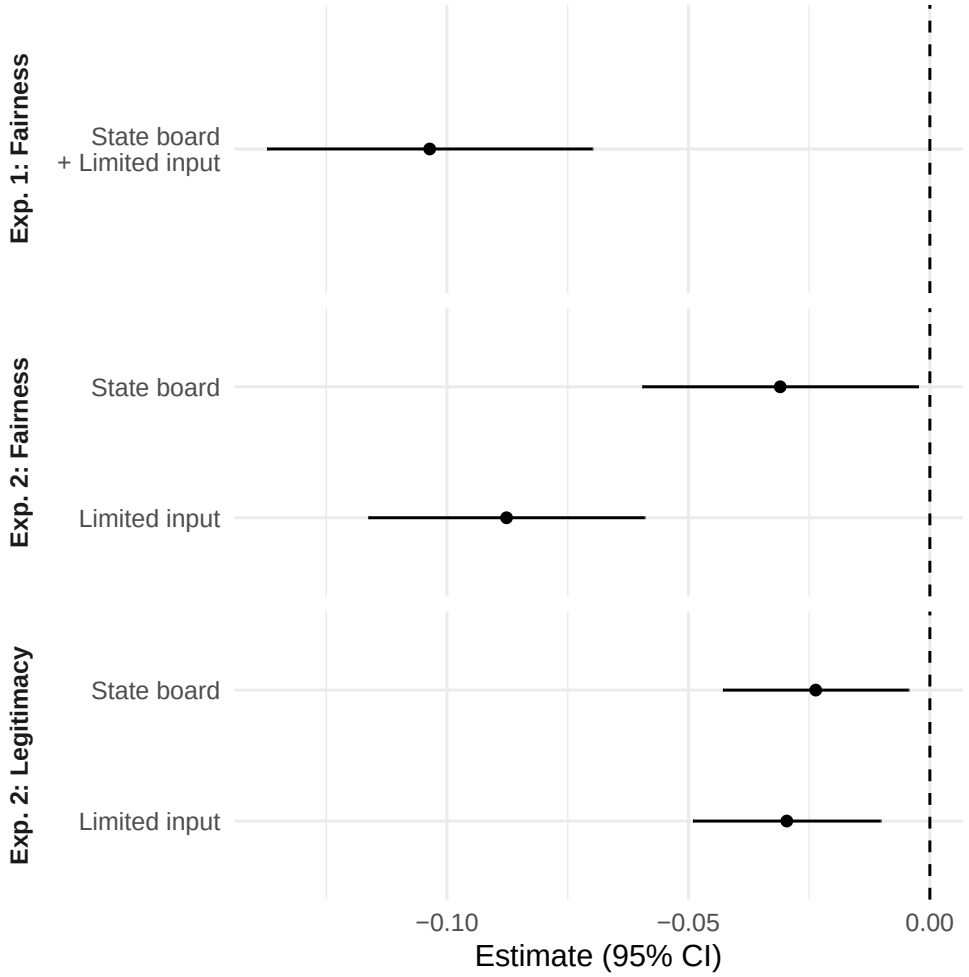


Figure 1: Effect of process on perceived fairness and legitimacy of turbine siting decision when the outcome is unknown (Branch 1 only). Point estimates shown with 95% confidence intervals.

Experiment 2 shows that the negative effects on fairness from Experiment 1 are driven primarily by a lack of public input, though both changes in process have comparable effects on the legitimacy of the policy outcome. That the effect of process on legitimacy is smaller compared to fairness is expected. Procedural fairness is only one component of decision legitimacy.

Resilience of Effects When Outcome Is Known

Having established that process affects fairness and legitimacy absent knowledge of the outcome, I test whether people are similarly responsive to process when the policy outcome is known. Figure 2 shows interaction between process and branch—whether the respondent knows the final decision.

Across both experiments, knowing the policy outcome neither substantively nor statistically changes the effect of process on fairness and legitimacy. Whether or not the outcome is known, respondents still believe that the decision-making process is less fair and less legitimate when the decision is made either by the state-appointed board or with limited public input. These null findings indicate that respondents are sincerely, not strategically judging procedural fairness prior to knowing policy outcomes.

One concern may be that the null results in Figure 2 stem from respondents not reading and internalizing the policy outcome. To assess this theory, I interact the process treatments with an indicator for whether the policy outcome matches the respondent's pretreatment stated preference for the wind farm—either that it would be approved or denied. Figure 3 shows that receiving one's preferred policy outcome dramatically increases the respondent's perception of fairness and decision legitimacy by 11 to 16 percentage points, respectively. Respondents are clearly reading the policy outcome and yet the outcome does not alter the independent effect of process.

However, this analysis also suggests an important caveat to the above findings. While process may have a sincere effect on fairness and legitimacy, the effect of these specific

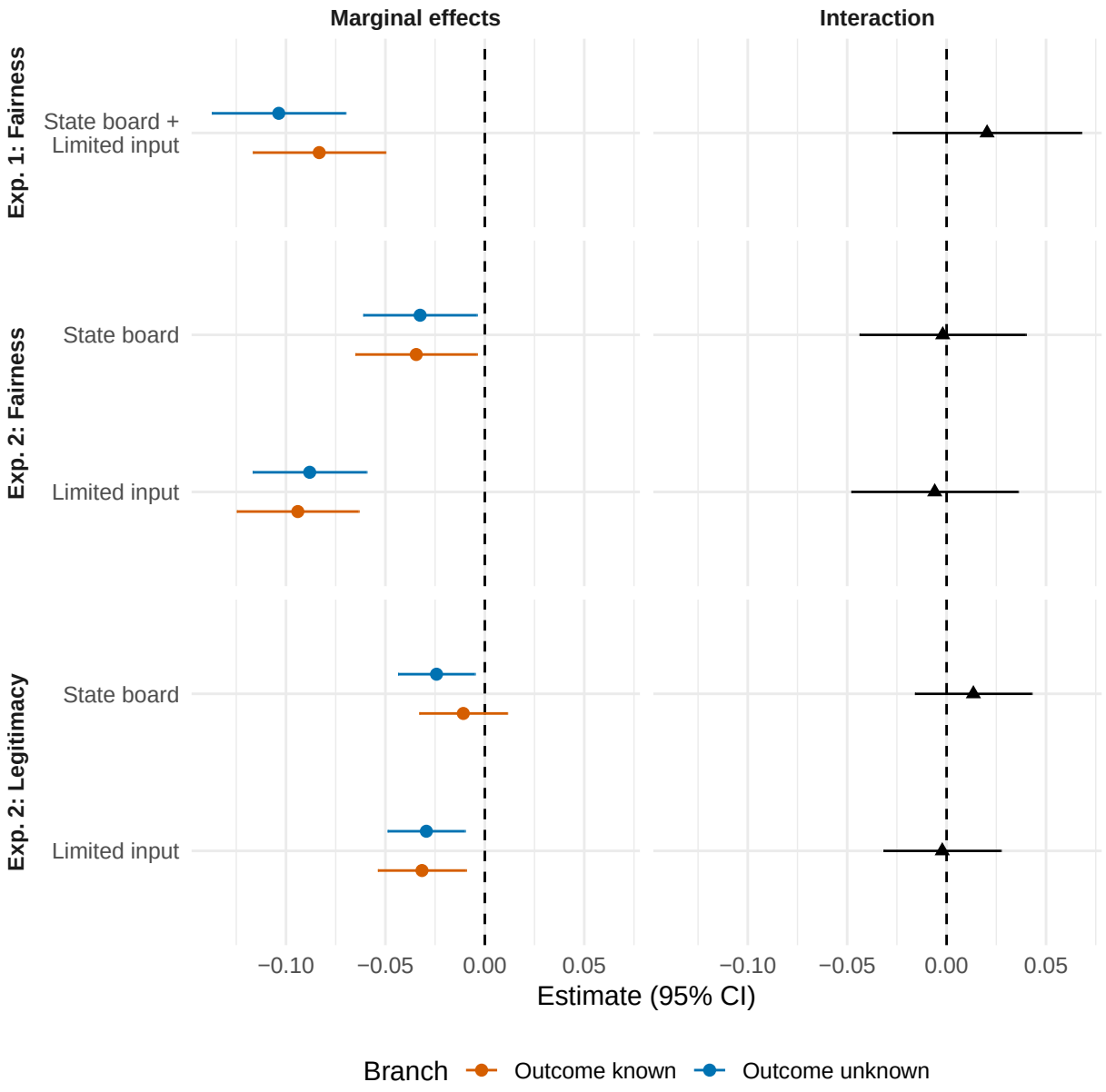


Figure 2: Interaction between knowledge of policy outcome and effect of process on perceived fairness and legitimacy of turbine siting decision when the outcome is unknown (Branches 1 and 2). Point estimates shown with 95% confidence intervals.

processes is on average half the size of the effect of getting one's preferred policy. Generalized broadly, studies which measure the effect of process after the policy outcome is known are measuring relationships potentially driven by whether the respondent got the policy they wanted, not the independent effect of process alone.

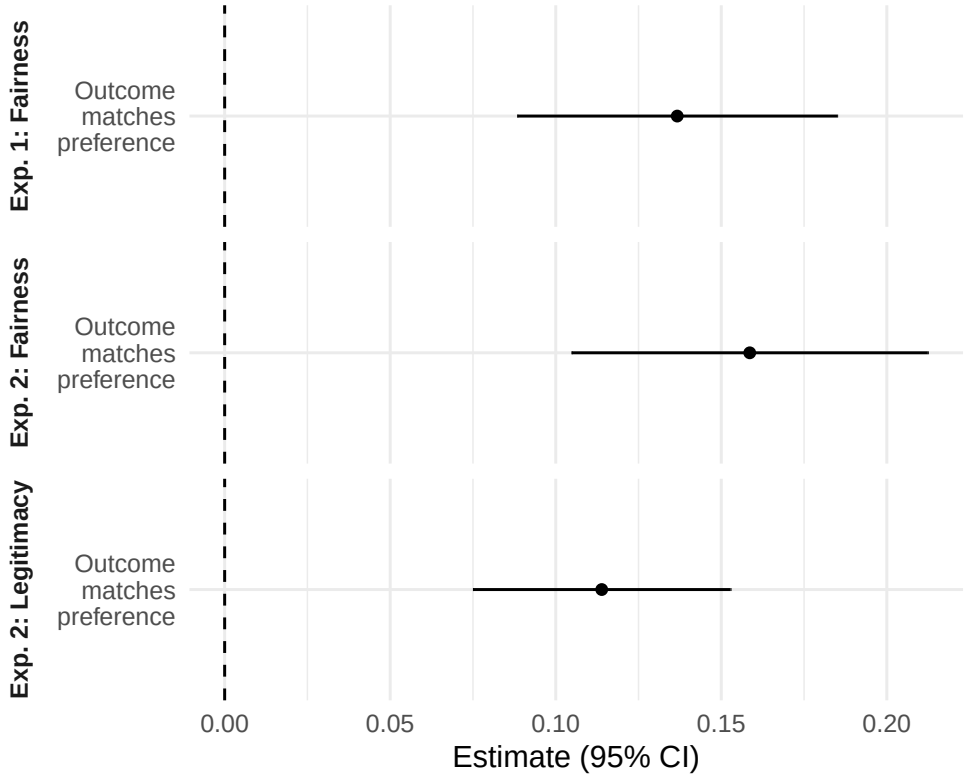


Figure 3: Effect of receiving preferred policy outcome on perceived fairness and legitimacy of turbine siting decision when the outcome is unknown (Branch 2 only). Point estimates shown with 95% confidence intervals.

Discussion

Across two experiments, I demonstrate the causal effect of process on the perceived fairness and legitimacy of wind energy siting. Face-to-face public input and, to a lesser extent, local control increase procedural fairness and legitimacy. These effects are resilient to knowing whether the institution will approve or deny the wind energy proposal. However, evaluations of process are also heavily affected by the policy outcome. Consequently, researchers

measuring fairness and legitimacy ought to capture beliefs prior to the outcome being known.

State governments are increasingly preempting local control to facilitate the supply of new renewable energy (Sellers and Scharff 2020). My findings urge caution. If these reforms limit opportunities for voice, voters will be less accepting of the siting decisions. Over time, this depressed legitimacy risks degrading general trust in state government and possibly exacerbating right-wing populist backlash (Bosetti et al. 2025). Future research should further disentangle the effects of various institutional reforms that both limit excessive veto points while also strengthening local legitimacy.

Methods

Sampling

Experiment 1 was fielded in December 2024. Respondents were recruited via Cloud Research Connect, an opt-in survey platform found to have among the highest response quality compared to similar popular platforms (Stagnaro et al. 2024). After dropping respondents for failing pretreatment attention checks, I surveyed 1,995 respondents living in the United States, age 18 years or older. To maximize external validity, I excluded respondents living in urban areas, as a wind farm of 340 foot tall turbines is an unrealistic land use in that context. As a result, the sample has a larger share of homeowners and non-Hispanic white respondents compared to the United States as a whole.[5]

Experiment 2 was fielded in November 2025. I explicitly sampled respondents from rural areas in order to capture those most likely to encounter large-scale wind energy projects. Cloud Research Connect does not have a deep pool of rural respondents, so I fielded the survey via PureSpectrum, a platform which combines geographic micro-targeting with demographic quotas to recruit respondents from other opt-in survey providers. I used the University of Washington RUCA-to-ZCTA crosswalk, defining rural ZIP codes as those categorized with a RUCA code of 7 or higher (e.g., Nemerever and Rogers 2021). Demographic target quotas for income, race, homeownership, age, gender, and education are based on 2021-2025 5-year ACS estimates for these rural ZCTAs (Schroeder et al. 2025).

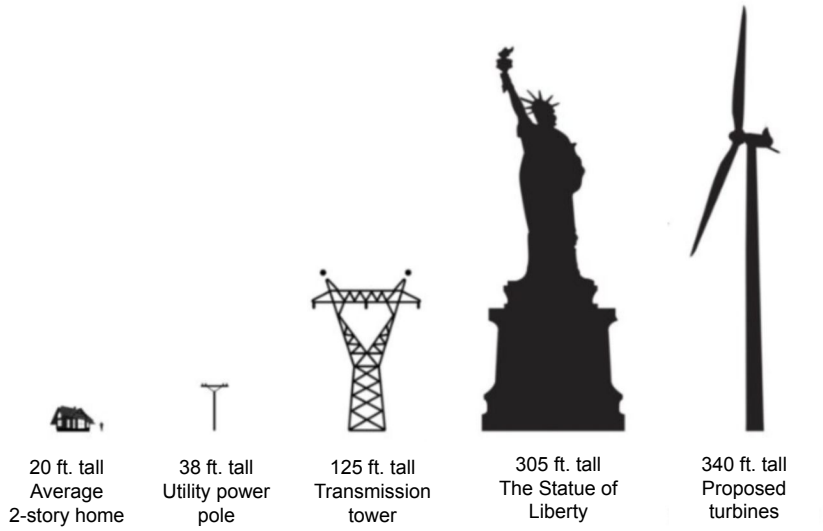
Design

In both survey experiments, respondents were asked to evaluate a hypothetical wind farm of sixty 340 foot tall turbines proposed for their community. The prompt includes both arguments for and against the wind farm, as well as a visualization of the scale of the turbines. Due to the diverse rural geographies in the United States, this study was unable

[5]See Section D for full descriptive statistics.

to incorporate photomontages that would represent each respondents' surrounding context (e.g., woods v. grasslands, flat plains v. ridges, etc.). Below is the prompt used:

> A wind energy developer is proposing to build a wind farm on land in your community. They want to build a farm of 60 turbines, each around 340 feet tall, which would power 85,000 homes per year.[6] You would be able to see the wind turbines from your neighborhood.
>
> For context, here's a visual of the turbine height (far right) compared to other known structures:



> Your community is divided. On one hand, some residents are concerned that the facility's size would harm local property values and affect migrating birds. Residents are also concerned about the aesthetics, landscape change, and potential negative impacts on quality of life due to the turbines.
>
> On the other hand, technical reports estimate that the wind farm would bring over $2 million per year in new tax revenue for local schools and services and re-

[6]The energy production estimate was based on reporting of the 60 turbine Apex Clean Energy's Honey Creek project proposed in Crawford County, Ohio (Zuckerman 2022). Notably, the turbine height at Honey Creek is taller than the 340 feet described. In Section C, I discuss the implications of this mismatch for my findings.

duce greenhouse gas emissions. Finally, others argue that farmers and landowners should have the right to lease their property to wind developers.

In both survey experiments, respondents were randomized into one of two branches. In Branch 1, respondents viewed only the process but they were not told the outcome of the policy siting decision. In Branch 2, respondents viewed both the process and the policy outcome. I also randomized the level of local control and public input. In Experiment 1, the "State board + limited input" condition presents a process where decisions are made by a state-appointed board of energy experts with limited, remote community input ("calling or writing an email to your governor"). The other condition reflects the status quo where decisions over wind turbines are made by elected local legislators with high levels of face-to-face community input ("attending local meetings and voicing your concerns face-to-face with your elected legislators").

In Experiment 2, I decouple this treatment into a level of government and level of public input treatments which vary independently of each other. For level of government, the conditions are:

- "your locally elected legislators"
- "a state-appointed board of energy experts"

For public input, the conditions are:

- "hold a series of local public meetings where residents like you can share your opinions face-to-face with the decision makers"
- "set up an email account where residents like you can send your thoughts, but there will be no public meetings about the proposal"

Finally, I randomized whether the proposed projected is approved or denied by its respective decision-making body. This randomized outcome was only visible for respondents in Branch 2, where the policy outcome is known. The survey flows for each experiment are diagrammed in Figures A-1 and B-3.

Outcomes of Interest The primary outcomes of interest are the fairness of the wind turbine siting process and the legitimacy of the final decision. For fairness, the survey asks: "Regardless of project approval, do you believe this is a fair way to decide on where to permit new wind energy farms?" Respondents indicated the perceived fairness on a 7-point scale from "very unfair" to "very fair." I operationalize this outcome on a continuous scale from 0 to 1.

For legitimacy, I use an original four item scale of statement with agreement ranging on a 5-points scale from "strongly agree" to "strongly disagree." I average the four items. The four items are internally consistent with a Cronbach's alpha of .70.[7]

The items are as follows, with the order randomized: "Thinking about the process and [eventual / NA] decision, do you agree or disagree with each of the following statements?"

- "This decision ought to be accepted and considered the final word on the matter."
- "The body that made this decision had the right to do so."
- "There ought to be an effort to challenge the decision and get it changed." *(reverse-coded)*
- "Even if I personally disagree, I respect the outcome of this process."

Statistical Analyses

All models used OLS regressions with robust standard errors.

$$y_i = \alpha + \beta D_i + \gamma X_i + \varepsilon_i$$

where y_i is either the perceived fairness or legitimacy outcome for individual i; D_i is the process treatment for individual i; X_i is a $1 \times K$ vector of demographic covariates (e.g., homeownership, race, income, age, gender, education) with associated coefficients γ; and ε_i is an error term. All dependent variables are be scaled to a 0 to 1 outcome. I control for race/ethnicity, gender, education, age, income, homeownership, and partisanship. Education

[7] See Section E for validation of the legitimacy scale.

is defined as having completed college, partisanship ranges from -1 (Democrat/lean Democrat) to +1 (Republican/lean Republican), homeownership is a binary (homeowner or lives with homeowner), and race/ethnicity is operationalized as a binary for white, non-Hispanic due to the small share of non-white residents in the rural population of interest.

References

Altshuler, Alan A and David E Luberoff. 2004. *Mega-Projects: The Changing Politics of Urban Public Investment*. Rowman & Littlefield.

Andersen, Carsten, Michael Hankinson, Martin Vineas Larsen, Asya Magazinik and Peter Bejerre Mortensen. 2025. The Shape of Democracy: Jurisdiction Boundaries and the Siting of Renewable Energy Infrastructure. Technical report Working Paper.

Bingaman, Samantha, Jeremy Firestone and David Bidwell. 2023. "Winds of change: examining attitude shifts regarding an offshore wind project." *Journal of Environmental Policy & Planning* 25(1):55–73.

Bosetti, Valentina, Italo Colantone, Catherine E De Vries and Giorgio Musto. 2025. "Green Backlash and Right-Wing Populism." *Nature Climate Change* pp. 1–7.

Brooks, Leah and Zachary Liscow. 2023. "Infrastructure Costs." *American Economic Journal: Applied Economics* 15(2):1–30.

Caggiano, Holly, Sara M Constantino, Chris Greig and Elke U Weber. 2024. "Public and Local Policymaker Preferences for Large-Scale Energy Project Characteristics." *Nature Energy* 9(10):1230–1240.

Chaudhuri, Anushree and Lawrence Susskind. 2024. Shifting to State Preemption: The Implications of New Renewable Energy Siting Frameworks in the U.S. Technical report MIT Renewable Energy Clinic.

Coppock, Alexander and Oliver A McClellan. 2019. "Validating the demographic, political, psychological, and experimental results obtained from a new source of online survey respondents." *Research & Politics* 6(1):2053168018822174.

Devine-Wright, Patrick and Yuko Howes. 2010. "Disruption to place attachment and the protection of restorative environments: A wind energy case study." *Journal of Environmental Psychology* 30(3):271–280.

Dynes, Adam M, Christopher F Karpowitz and J Quin Monson. N.d. "How Local Officials Respond to Expressions of Public." *British Journal of Political Science*. Forthcoming.

Elmallah, Salma and Joseph Rand. 2022. ""After the leases are signed, it's a done deal": Exploring procedural injustices for utility-scale wind energy planning in the United States." *Energy Research & Social Science* 89:102549.

Firestone, Jeremy, Ben Hoen, Joseph Rand, Debi Elliott, Gundula Hübner and Johannes Pohl. 2018. "Reconsidering barriers to wind power projects: community engagement, developer transparency and place." *Journal of Environmental Policy & Planning* 20(3):370–386.

Firestone, Jeremy, Christine Hirt, David Bidwell, Meryl Gardner and Joseph Dwyer. 2020. "Faring well in offshore wind power siting? Trust, engagement and process fairness in the United States." *Energy Research & Social Science* 62:101393.

Firestone, Jeremy, Willett Kempton, Meredith Blaydes Lilley and Kateryna Samoteskul. 2012. "Public acceptance of offshore wind power: does perceived fairness of process matter?" *Journal of Environmental Planning and Management* 55(10):1387–1402.

Gelman, Andrew. 2008. "Scaling regression inputs by dividing by two standard deviations." *Statistics in Medicine* 27(15):2865–2873.

Grimes, Marcia. 2006. "Organizing consent: The role of procedural fairness in political trust and compliance." *European Journal of Political Research* 45(2):285–315.

Gross, Catherine. 2007. "Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance." *Energy Policy* 35(5):2727–2736.

Hankinson, Michael and Asya Magazinnik. 2023. "The supply-equity trade-off: The effect of spatial representation on the local housing supply." *The Journal of Politics* 85(3):1033–1047.

Hartman, Liz. 2024. Wind Turbines: the Bigger, the Better. Technical report U.S. Department of Energy - Office of Critical Minerals and Energy Innovation.

Hoen, Ben, Jeremy Firestone, Joseph Rand, Debi Elliot, Gundula Hübner, Johannes Pohl, Ryan Wiser, Eric Lantz, T Ryan Haac and Ken Kaliski. 2019. "Attitudes of US wind turbine neighbors: analysis of a nationwide survey." *Energy Policy* 134:110981.

Liu, Lu, Thijs Bouman, Goda Perlaviciute and Linda Steg. 2020. "Public participation in decision making, perceived procedural fairness and public acceptability of renewable energy projects." *Energy and Climate Change* 1:100013.

Nemerever, Zoe and Melissa Rogers. 2021. "Measuring the rural continuum in political science." *Political Analysis* 29(3):267–286.

Nilson, Roberta S and Richard C Stedman. 2023. "Reacting to the rural burden: understanding opposition to utility-scale solar development in upstate New York." *Rural Sociology* 88(2):578–605.

Nilson, Robi, Joseph Rand, Ben Hoen and Salma Elmallah. 2024. "Halfway up the ladder: Developer practices and perspectives on community engagement for utility-scale renewable energy in the United States." *Energy Research & Social Science* 117:103706.

Prothro, James W and Charles M Grigg. 1960. "Fundamental principles of democracy: Bases of agreement and disagreement." *The Journal of Politics* 22(2):276–294.

Ryder, Stacia, Chad Walker, Susana Batel, Hannah Devine-Wright, Patrick Devine-Wright and Fin Sherry-Brennan. 2023. "Do the ends justify the means? Problematizing social acceptance and instrumentally-driven community engagement in proposed energy projects." *Socio-Ecological Practice Research* 5(2):189–204.

Sahn, Alexander. 2025. "Public comment and public policy." *American Journal of Political Science* 69(2):685–700.

Schroeder, Jonathan, David Van Riper, Steven Manson, Katherine Knowles, Tracy Kugler, Finn Roberts and Steven Ruggles. 2025. "IPUMS National Historical Geographic Information System: Version 20.0." http://doi.org/10.18128/D050.V20.0.

Sellers, Joshua S and Erin A Scharff. 2020. "Preempting politics: State power and local democracy." *Stan. L. Rev.* 72:1361.

Stagnaro, Michael Nicholas, James Druckman, Adam J Berinsky, Antonio Alonso Arechar, Robb Willer and David Rand. 2024. "Representativeness versus attentiveness: a comparison across nine online survey samples." *PsyArXiv* 22.

Stokes, Leah C, Emma Franzblau, Jessica R Lovering and Chris Miljanich. 2023. "Prevalence and predictors of wind energy opposition in North America." *Proceedings of the National Academy of Sciences* 120(40):e2302313120.

Susskind, Lawrence, Jungwoo Chun, Alexander Gant, Chelsea Hodgkins, Jessica Cohen and Sarah Lohmar. 2022. "Sources of opposition to renewable energy projects in the United States." *Energy Policy* 165.

Tiebout, Charles M. 1956. "A pure theory of local expenditures." *Journal of Political Economy* 64(5):416–424.

Tyler, Tom R. 1994. "Governing amid diversity: The effect of fair decisionmaking procedures on the legitimacy of government." *Law & Society Review* 28(4):809–831.

Wolsink, Maarten. 2007. "Wind power implementation: the nature of public attitudes: equity and fairness instead of 'backyard motives'." *Renewable and Sustainable Energy Reviews* 11(6):1188–1207.

Zuckerman, Jake. 2022. "Ten Ohio counties ban wind, solar projects under new state law." *Ohio Capital Journal* Aug 23:https://ohiocapitaljournal.com/2022/08/23/nine–ohio–counties–ban–wind–solar–projects–under–new–state–law/.

Supplemental Information

Contents

A Experiment 1 Survey Instrument

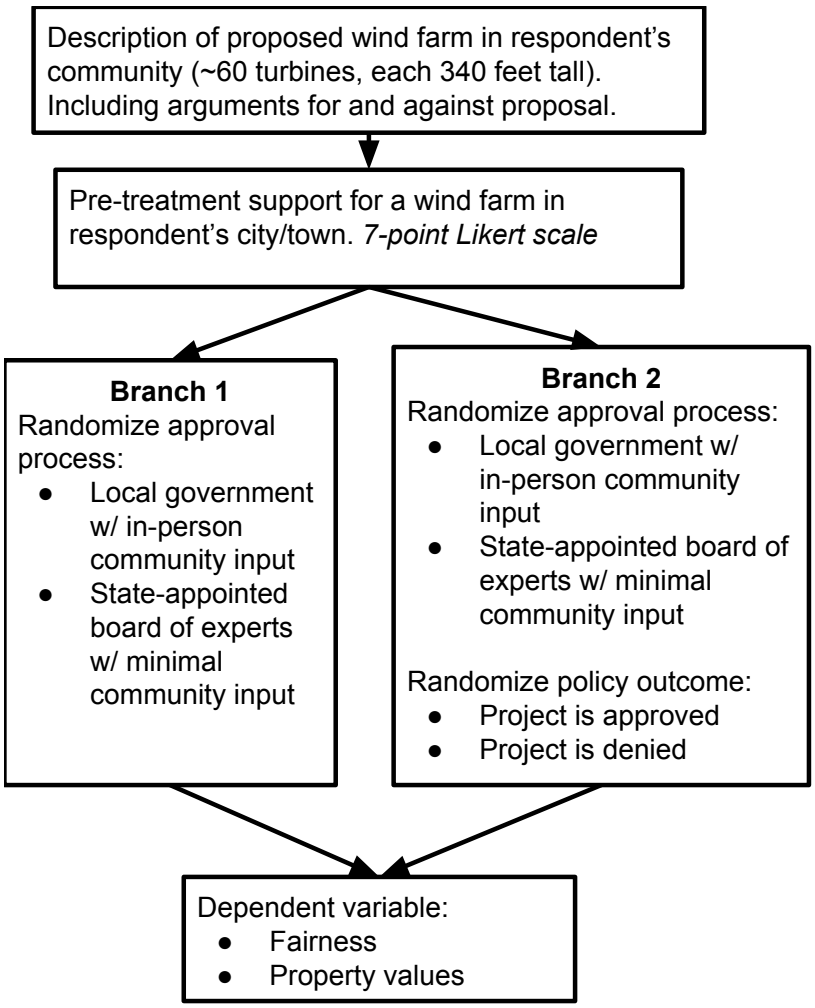


Figure A-1: Diagram of Experiment 1 survey flow.

Consent + Demographics

Standard module of demographic questions and attention checks.

From what you know about global climate change or global warming, which one of the following statements comes closest to your opinion?

- Global climate change has been established as a serious problem, and immediate action is necessary
- There is enough evidence that climate change is taking place and some action should be taken
- We don't know enough about global climate change, and more research is necessary before we take any actions

- Concern about global climate change is exaggerated. No action is necessary
- Global climate change is not occurring; this is not a real issue

In the United States, local governments are in charge of local public services, property taxes, and how land can be used. On a scale from 1 to 7, how often do you agree with the decisions made by your local government?

- Never
- Very rarely
- Rarely
- Sometimes
- Often
- Very often
- Always
- I don't know

Transition

We will now show you information regarding a potential scenario in your community. After reading the text, please give your opinions about the topic and other current events. Please pay close attention while reading, as you will be asked questions about the content of this scenario after you've read it.

Project Description

A wind energy developer is proposing to build a wind farm on land in your community. They want to build a farm of 60 turbines, each around 340 feet tall, which would power 85,000 homes per year. You would be able to see the wind turbines from your neighborhood.

For context, here's a visual of the turbine height (far right) compared to other known structures:

Your community is divided. On one hand, some residents are concerned that the facility's size would harm local property values and affect migrating birds. Residents are also concerned about the aesthetics, landscape change, and potential negative impacts on quality of life due to the turbines.

On the other hand, technical reports estimate that the wind farm would bring over $2 million per year in new tax revenue for local schools and services and reduce greenhouse gas emissions. Finally, others argue that farmers and landowners should have the right to lease their property to wind developers. Finally, others argue that farmers and landowners should have the right to lease their property to wind developers, regardless of the outcomes.

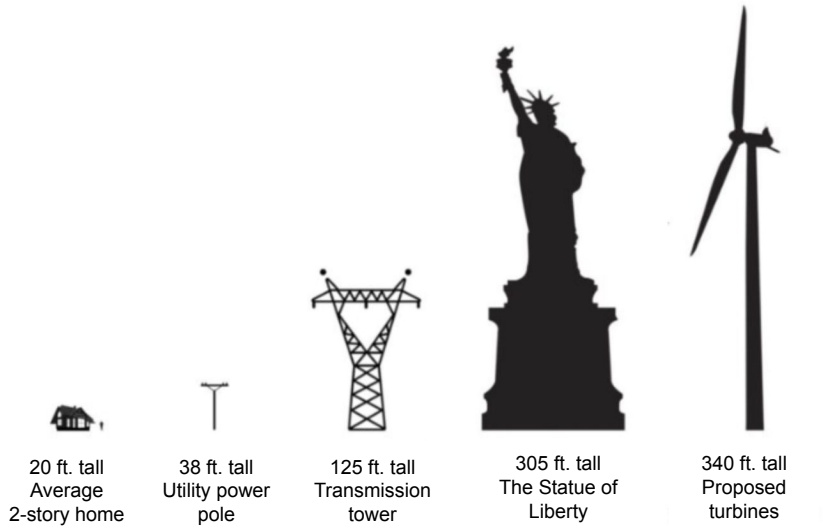


Figure A-2: Visualization of size of each turbine.

Pretreatment Support for Project

Do you support or oppose the development of this wind farm in your community?

- Strongly oppose
- Oppose
- Somewhat oppose
- Neither support nor oppose
- Somewhat support
- Support
- Strongly support

In at least two sentences, why do you support or oppose the wind farm? *Text box answer.*

Treatment 1: Process

According to state law, [your locally elected legislators gets / a state-appointed board of energy experts get] to decide on whether the proposed wind farm will be approved or denied. Local residents like yourself can share your opinions by [attending local meetings and voicing your concerns face-to-face with your elected legislators / calling or writing an email to your governor.]

Treatment 2: Policy Outcome (included in Branch 2 only)

After much debate, [your elected local legislators / the state-appointed board of experts] decided to [approve / reject] the wind farm proposal. It will [now / not] be built and this decision is final.

Dependent Variables (both Branch 1 and Branch 2)

Regardless of what you think about the [eventual / *NA*] decision, do you believe that a vote by [your elected local legislators/the state-appointed board of experts] is a fair way to decide on the approval of new wind energy farms?

- Very unfair
- Unfair
- Somewhat unfair
- Neither fair nor unfair
- Somewhat fair
- Fair
- Very fair

In at least two sentences, why do you believe this method was fair or unfair? *Text box answer.*

Placebo Check

In your opinion, how [would/will/would have] this proposed wind farm [affect/affected] property values in your community?

- 7 - Greatly increase property values
- 6
- 5
- 4 - No effect on property values
- 3
- 2
- 1 - Greatly decrease property values

Language conditionals:

- "would" - under Branch 1 - outcome not reported
- "will" - under Branch 2 - project approved
- "would have" - under Branch 2 - project rejected

In your opinion, which of the following processes would be the best way to decide on the approval of new wind farms?

- Majority vote by a state-appointed board of energy experts
- Majority vote by elected local government officials
- Majority vote by residents of the community
- Other: [text entry]
- I don't know

B Experiment 2 Survey Instrument

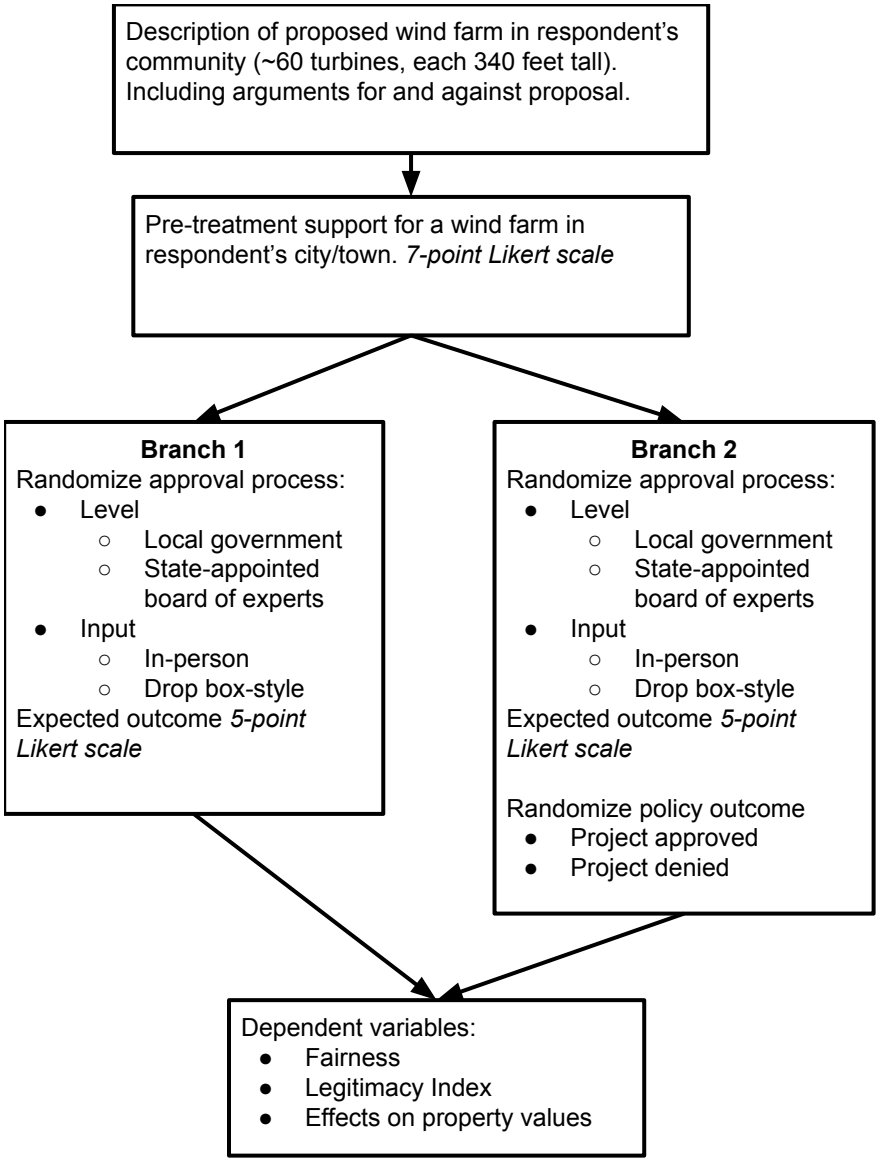


Figure B-3: Diagram of Experiment 2 survey flow.

Consent + Demographics

Standard module of demographic questions and attention checks.

From what you know about global climate change or global warming, which one of the following statements comes closest to your opinion?

- Global climate change has been established as a serious problem, and immediate action is necessary

- There is enough evidence that climate change is taking place and some action should be taken
- We don't know enough about global climate change, and more research is necessary before we take any actions
- Concern about global climate change is exaggerated. No action is necessary
- Global climate change is not occurring; this is not a real issue

In the United States, local governments are in charge of local public services, property taxes, and how land can be used. On a scale from 1 to 7, how often do you agree with the decisions made by your local government?

- Never
- Very rarely
- Rarely
- Sometimes
- Often
- Very often
- Always
- I don't know

Now, think about your state government. How often do you agree with the decisions made by your state government?

- Never
- Very rarely
- Rarely
- Sometimes
- Often
- Very often
- Always
- I don't know

Transition

We will now show you information regarding a potential scenario in your community. After reading the text, please give your opinions about the topic and other current events. Please pay close attention while reading, as you will be asked questions about the content of this scenario after you've read it.

Project Description

A wind energy developer is proposing to build a wind farm on land in your community. They want to build a farm of 60 turbines, each around 340 feet tall, which would power 85,000 homes per year. You would be able to see the wind turbines from your neighborhood.

For context, here's a visual of the turbine height (far right) compared to other known structures:

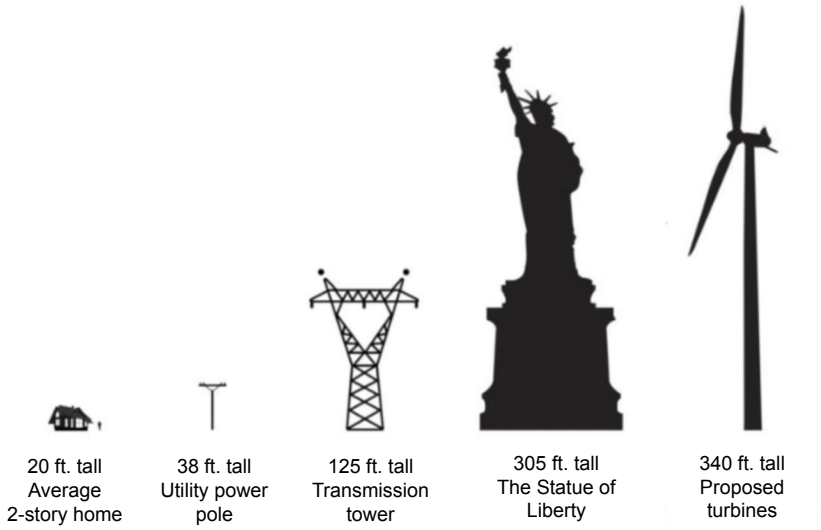


Figure B-4: Visualization of size of each turbine.

Your community is divided. On one hand, some residents are concerned that the facility's size would harm local property values and affect migrating birds. Residents are also concerned about the aesthetics, landscape change, and potential negative impacts on quality of life due to the turbines.

On the other hand, technical reports estimate that the wind farm would bring over $2 million per year in new tax revenue for local schools and services and reduce greenhouse gas emissions. Finally, others argue that farmers and landowners should have the right to lease their property to wind developers. Finally, others argue that farmers and landowners should have the right to lease their property to wind developers, regardless of the outcomes.

Pretreatment Support for Project

Do you support or oppose the development of this wind farm in your community?

- Strongly oppose
- Oppose
- Somewhat oppose
- Neither support nor oppose
- Somewhat support
- Support
- Strongly support

In at least two sentences, why do you support or oppose the wind farm? *Text box answer.*

Treatment 1: Process

According to state law, [your locally elected legislators gets / a state-appointed board of energy experts get] to decide on whether the proposed wind farm will be approved or denied. [Your locally elected legislators / A state-appointed board of energy experts] will [hold a series of local public meetings where residents like you can share your opinions face-to-face with the decision makers / set up an email account where residents like you can send your thoughts, but there will be no public meetings about the proposal].

Expected Outcomes

How likely do you think it is that the wind farm proposal will be approved?

- Extremely likely
- Likely
- Somewhat likely
- Equally likely and unlikely
- Somewhat unlikely
- Very unlikely
- Extremely unlikely

Treatment 2: Policy Outcome (included in Branch 2 only)

After much debate, [INSTITUTION] decided to [OUTCOME] the wind farm proposal. The wind farm will [MODIFIER] be built.

- *INSTITUTION: four unique conditions from fully randomizing the decision making body and level of public input.*
- *OUTCOME: deny / approve*
- *MODIFIER: not / now*

Dependent Variables (both Branch 1 and Branch 2)

Regardless of what you think about the [eventual / *NA*] decision, do you believe that a vote by [INSTITUTION]—after gathering input from residents through [email / public meetings]—is a fair way to decide on the approval of new wind energy farms?

- Extremely unfair
- Unfair
- Somewhat unfair
- Neither fair nor unfair
- Somewhat fair
- Fair
- Extremely fair

Thinking about the process and [eventual / NA] decision, do you agree or disagree with each of the following statements? Matrix table, 5-point scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree)

- "This decision ought to be accepted and considered the final word on the matter."
- "People would be justified in protesting this decision." *(Reverse-coded). Note: This item was excluded from the analysis based on protocol specified in the pre-analysis plan. See Section E for discussion. Results are substantively and statistically unchanged regardless of its exclusion.*
- "The body that made this decision had the right to do so."
- "There ought to be an effort to challenge the decision and get it changed." *(Reverse-coded)*
- "Even if I personally disagree, I respect the outcome of this process."

In at least 2 sentences, why do you believe this [eventual / NA] decision [would be / is] either legitimate or illegitimate? *Text box answer*

Placebo Check

In your opinion, how [would/will/would have] this proposed wind farm [affect/affected] property values in your community?

- 7 - Greatly increase property values
- 6
- 5
- 4 - No effect on property values
- 3
- 2
- 1 - Greatly decrease property values

Language conditionals:

- "would" - under Branch 1 - outcome not reported
- "will" - under Branch 2 - project approved
- "would have" - under Branch 2 - project rejected

C Turbine Height Implications

Hartman (2024) states that modern onshore wind turbines have an average hub height of 339 feet. Unfortunately, that hub height was interpreted as a tip of blade height in my visualization of the proposed turbines.

How may this error have affected the experimental results? Taller turbines are likely to lead to more local opposition, but it is unclear if taller turbines would alter the legitimizing effect of the approval process. Instead, my expectation is that taller turbines would lead to an intercept shift downward—less support and less legitimacy overall—but the process conditions would have similar legitimizing treatment effects.

D Descriptive Statistics

Tables D-1 and D-2 compare each experiment's sample to its relevant population. Fielded on Cloud Research Connect, Experiment 1 sampled rural and suburban ZIP codes. To define the comparison group, I use the ZIP codes from which at least one respondent has entered Experiment 1's sample. For demographic traits, I use NHGIS to collect ZIP (ZCTA)-level data from the 2023 5-year American Community Survey (Schroeder et al. 2025). These ZIP code traits are weighted by their population to better reflect the composition of residents, rather than the ZIP codes themselves.

Experiment 1's sample reflects the population's composition of homeownership, gender, and age. Respondents in the sample have slightly lower incomes than the comparison population and are more likely to be white and college educated. The sample is 30% Republican or leans Republican. While partisanship data is not captured in the US Census, I believe that the ZIP population of these areas is slightly more Republican than the sample.

Experiment 2 samples exclusively rural ZIP codes and used demographic quotas based on the ZIP code data. While PureSpectrum has a deeper pool of rural respondents, these quotas were not strict. Still, the sample reflects the rural target population in terms of homeownership, college education, and income. The sample has an over-representation of women, white respondents, and older respondents. The sample is majority (54%) Republican/Republican leaners which is a reasonable target.

Although both samples exhibit modest deviations from their target populations on several demographic traits, these imbalances are unlikely to bias the estimated treatment effects. The treatments in both experiments are fully randomized at the individual level, and all observed demographic traits are controlled for in the analysis. As a result, differences between the sample and the target population may affect the levels of outcomes but not the internal validity of causal comparisons across treatment conditions (Coppock and McClellan 2019).

Table D-1: Descriptive statistics: Experiment 1 and weighted average of sampled ZIP codes

Characteristic	Survey sample	ZIP population (weighted)
Homeowner (pct.)	71%	68%
Female (pct.)	56%	51%
White, non-Hispanic (pct.)	74%	60%
Income (mean, household)	$85,814	$91,997
Age (mean)	42	39
College educated (pct.)	55%	39%
Republican/lean R. (pct.)	30%	NA

Table D-2: Descriptive statistics: Experiment 2 and weighted average of sampled ZIP codes

Characteristic	Survey sample	ZIP population (weighted)
Homeowner (pct.)	77%	72%
Female (pct.)	61%	50%
White, non-Hispanic (pct.)	85%	73%
Income (mean, household)	$68,293	$66,102
Age (mean)	50	42
College educated (pct.)	28%	24%
Republican/lean R. (pct.)	54%	NA

E Validation of Legitimacy Scale

The survey instrument for Experiment 2 included an original five item legitimacy scale. The items were as follows, with the order randomized: "Thinking about the process and [eventual / NA] decision, do you agree or disagree with each of the following statements?"

- "This decision ought to be accepted and considered the final word on the matter."
- "People would be justified in protesting this decision." *(Reverse-coded).*
- "The body that made this decision had the right to do so."
- "There ought to be an effort to challenge the decision and get it changed." *(Reverse-coded)*
- "Even if I personally disagree, I respect the outcome of this process."

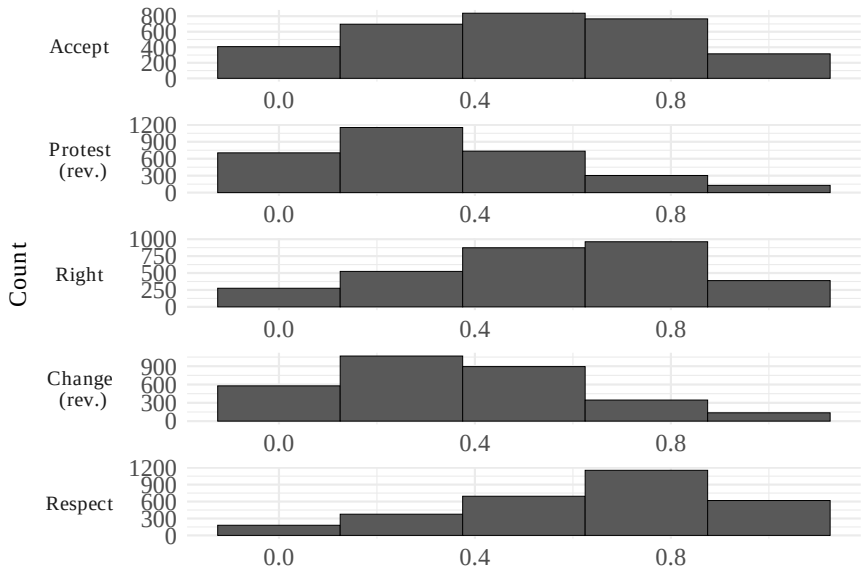


Figure E-5: Histograms of legitimacy scale items. Scaling for items "Protest" and "Change" already reverse-coded to match scale.

Table E-3: Scale reliability summary

Scale	Alpha_raw	Alpha_std	Avg_item_r	G6_smc	S_over_N
Legitimacy scale	0.69	0.69	0.31	0.69	2.24

Figure E-5 shows the distribution of support for each statement in the legitimacy scale. Support is reverse-coded for the "Protest" and "Change" items. While support for these two statements is lower than for the others, the heatmap shows positive correlations among all five variables (Figure E-6). Finally, Table E-3 reports summary statistics on the study's novel legitimacy scale.

The pre-analysis plan notes that items would be dropped to target a Chronbach's alpha of .70 or higher. With all five items, the Chronbachs' alpha is .69. Dropping the "Protest" item increases the Chronbach's alpha to .70. Results are substantively and statistically the

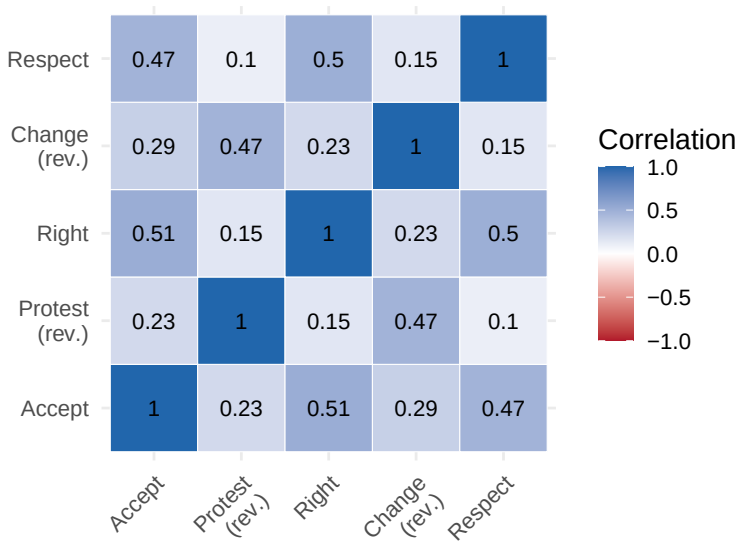


Figure E-6: Correlation heatmap of legitimacy scale items.

same in either approach. However, to strictly adhere to the pre-analysis plan, the manuscript reports estimates using the four-item legitimacy, excluding the "Protest" item.

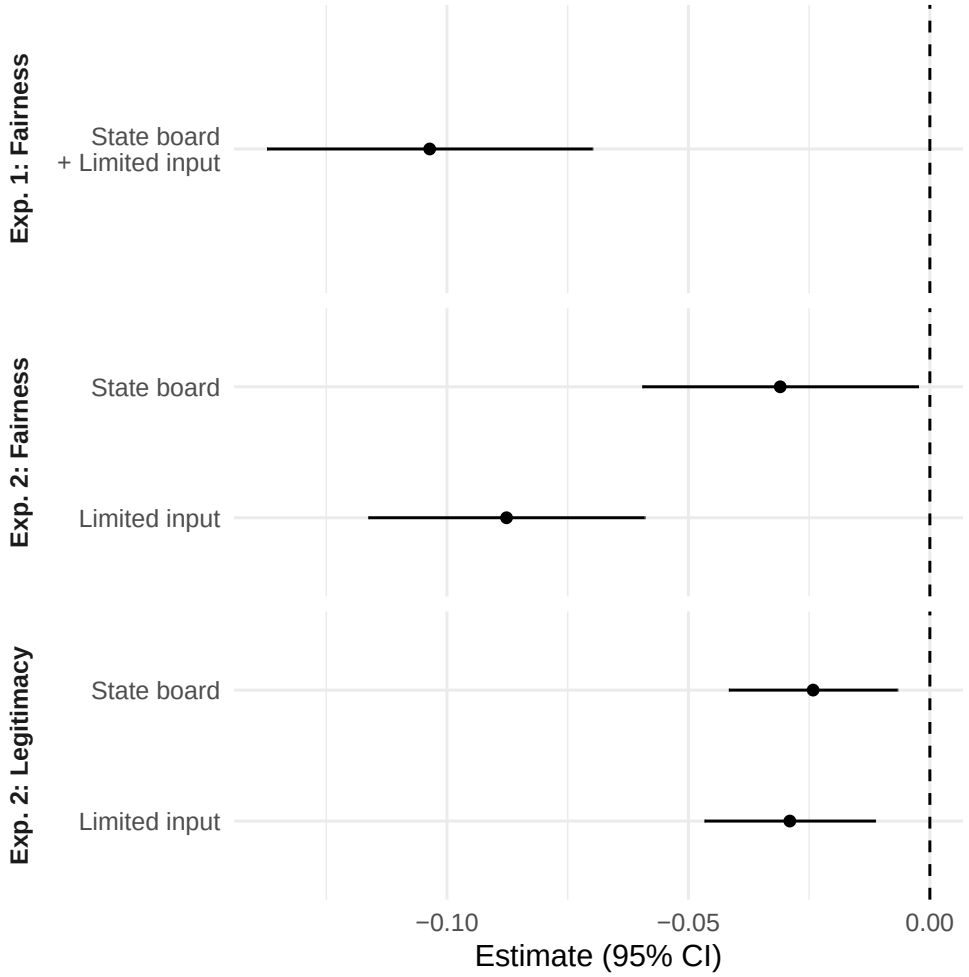


Figure E-7: Effect of process on perceived fairness and legitimacy of turbine siting decision when the outcome is unknown (Branch 1 only), using the original 5-item legitimacy scale. Compared to Figure 1. Point estimates shown with 95% confidence intervals.

F Alignment with Local Government

One explanation for the effect of level of decision making is that respondents may feel poorly represented by their state government. To test this mechanism, Experiment 1 asked: "How often do you agree with the decisions made by your local government?" I standardize this outcome as a two standard deviation effect to make it akin to a binary variable (Gelman 2008).

Of course, some respondents may feel poorly represented at the state and local level. Experiment 2 instead asked respondents to evaluate their agreement with decisions by their local government and state government. I subtract agreement with state government with agreement with local government to generate a cleaner measure of preference for local government control.

Figure F-8 shows the interactive effect of process with a preference for local government. In Experiment 1, for those who prefer local government, the compound treatment of state board with limited input suggests an even greater decrease in perceived fairness ($p = .07$), though this measurement of local government preference has flaws. In Experiment 2, for those who prefer local government, a decision made by state board of experts has a similar negative effect of fairness and legitimacy ($p < .05$). Of course, one's preference for local government is not randomly assigned, so these respondents may differ in other ways I cannot account for.

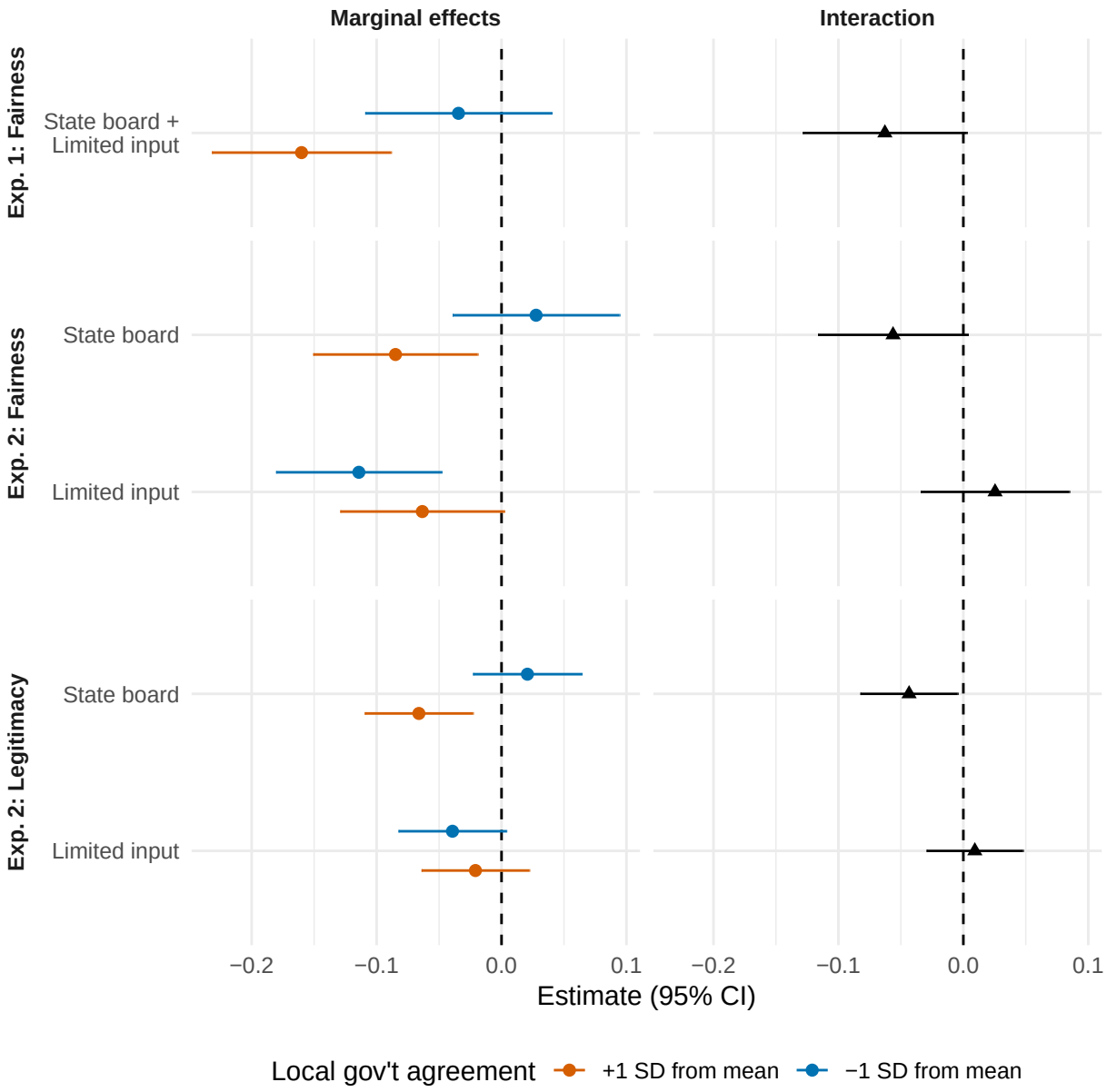


Figure F-8: Interaction between preference for local government and effect of process on perceived fairness and legitimacy of turbine siting decision when the outcome is unknown (Branch 1 only). Point estimates shown with 95% confidence intervals.

G Outcome Matches and Perceptions

Figure H-10 shows the interaction between match and the process. In 4 out of 5 treatments, getting one's preferred outcome does not alter the negative effects of process found in Figure 1. However, in Experiment 2, the interaction between outcome match and state board is large enough to negate the negative effect of state board. This suggests that people who receive their preferred outcome are no longer sensitive to who made the decision when judging the fairness of the process. However, those who *did not* receive their preferred outcome still perceive the state board as less fair than the local elected officials.

It is unclear why this may be the case and I hesitate to overanalyze one interaction from one of the treatments due to the risk of a false positive. Though, for theory generation, perhaps the level of decision maker is fungible in a way that the amount of public input is not. It may be easier to discount a state board as either corrupt or unimportant depending on the outcome compared to discounting public input. Public input may be seen as uniformly fair. That this interaction exists in Experiment 2 but there is no evidence of it in Experiment 1 suggests that more data is needed.

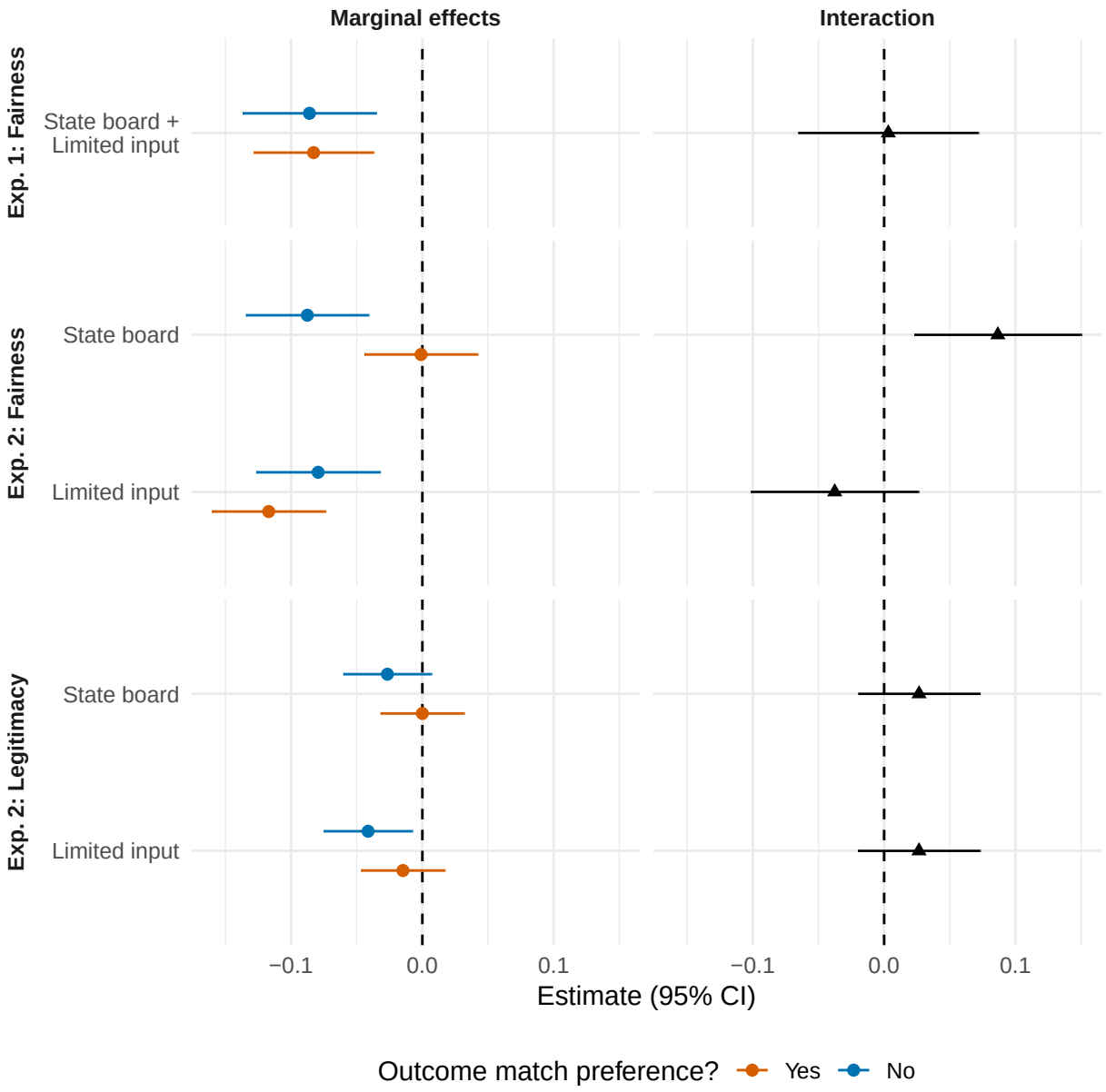


Figure G-9: Interaction between receiving preferred policy outcome and effect of process on perceived fairness and legitimacy of turbine siting decision when the outcome is unknown (Branch 2 only). Point estimates shown with 95% confidence intervals.

H Expected Outcomes

In Experiment 2, respondents in both Branches 1 and 2 stated their expectations of whether the proposed wind far would be approved or denied following the description of the approval process. Thus, I use both branches in evaluating the effect of process on expectations of outcome. There is little evidence that the process systematically affects expectations of approval (Figure H-10).

However, Figure H-11 displays these effects based on respondents' pretreatment support for the wind proposal. Surprisingly, respondents differ in their perceptions of how public input will affect the outcome. Pro-wind respondents believe that less public input will decrease the likelihood of approval, whereas anti-wind respondents believe the opposite. Perhaps both groups believe their neighbors share their attitudes, meaning more public input will secure their preferred outcome.

To be clear, that process affects perceptions of the outcome does not negate the independent effect of process on fairness and legitimacy. Respondents may expected different outcomes based on the process, but these outcomes still do not alter the legitimizing effects of a fair process.

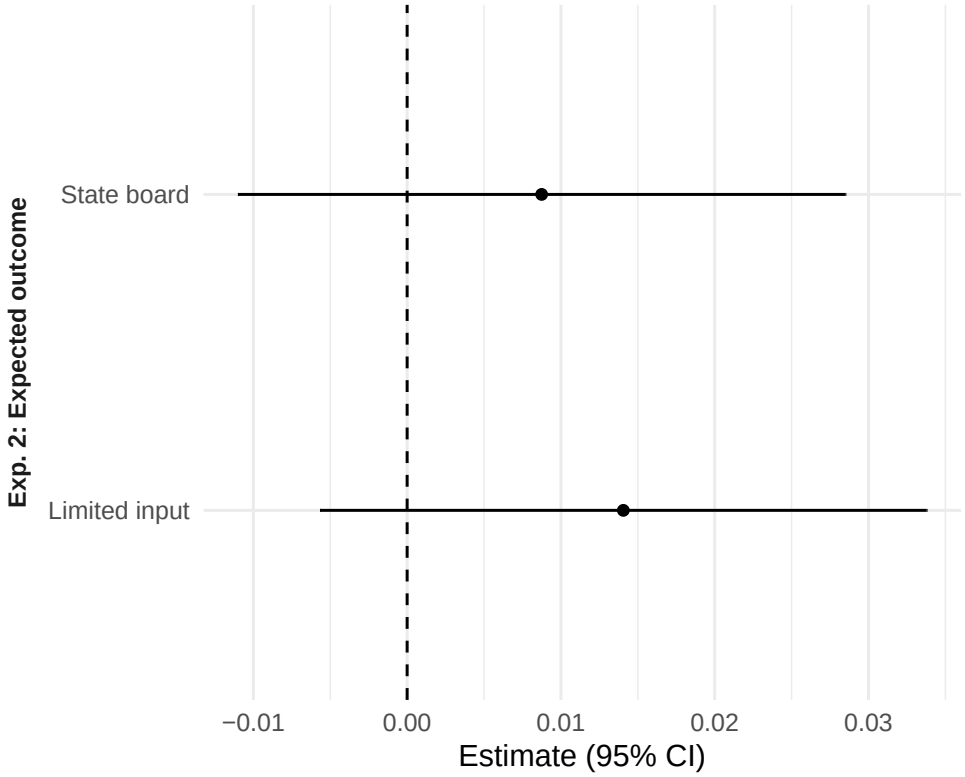


Figure H-10: Effect of process on expected outcome of turbine siting decision when the outcome is unknown (Branches 1 and 2). Point estimates shown with 95% confidence intervals.

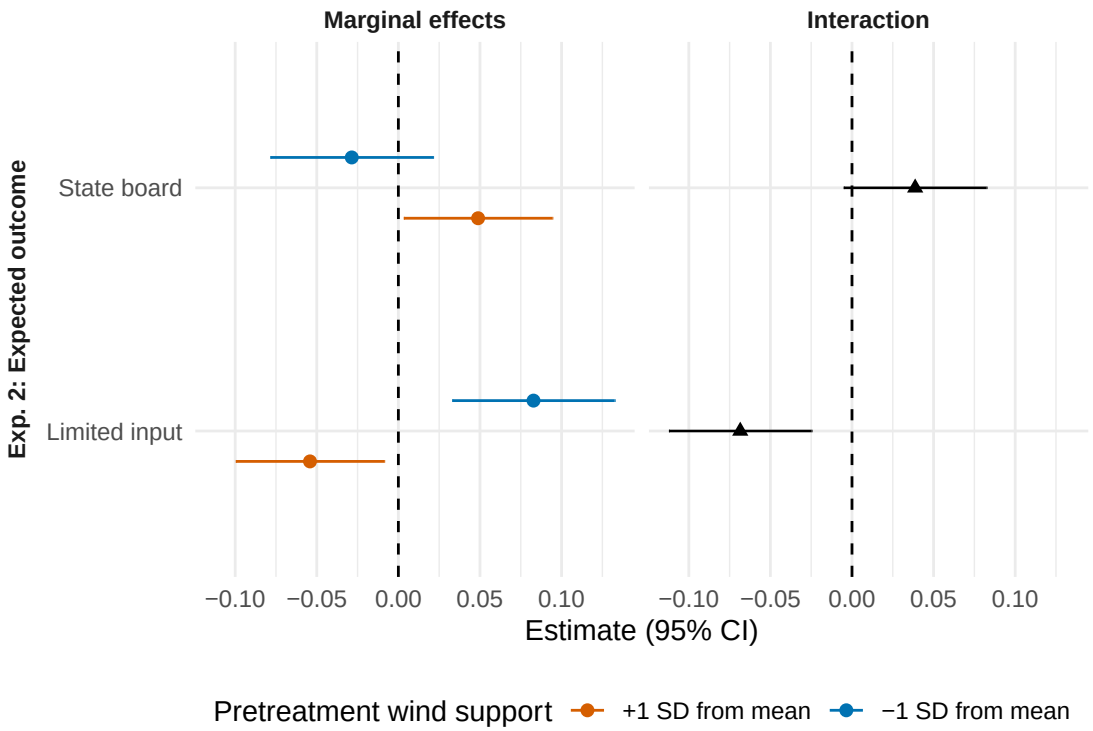


Figure H-11: Effect of process on expected outcome of turbine siting decision when the outcome is unknown (Branches 1 and 2) by respondents pretreatment support for the wind farm. Point estimates shown with 95% confidence intervals.

I Results in Tabular Form

I.1 Effect of Process

	Experiment 1: Fairness	
	Model 1	Model 2
State board, limited input	−0.103***	−0.104***
	(0.017)	(0.017)
Homeowner		−0.005
		(0.020)
White, non-Hispanic		0.018
		(0.020)
Income (cont.)		0.006
		(0.003)
Female (bi.)		−0.003
		(0.017)
College or more		0.041*
		(0.019)
Age		−0.002*
		(0.001)
Republican (-1, 1)		−0.046***
		(0.010)
(Intercept)	0.546***	0.550***
	(0.012)	(0.035)
R^2	0.035	0.081
Adj. R^2	0.034	0.073
Num. obs.	964	956
RMSE	0.270	0.265

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-4: Effect of process on perceived fairness of siting decision (Experiment 1, Branch 1 only).

	Experiment 2: Fairness		Experiment 2: Legitimacy	
	Model 1	Model 2	Model 3	Model 4
Limited input	-0.086^{***}	-0.088^{***}	-0.028^{**}	-0.030^{**}
	(0.015)	(0.015)	(0.010)	(0.010)
State board	-0.032^{*}	-0.031^{*}	-0.024^{*}	-0.024^{*}
	(0.015)	(0.015)	(0.010)	(0.010)
Homeowner		0.005		−0.021
		(0.018)		(0.012)
White, non-Hispanic		0.009		0.022
		(0.021)		(0.014)
Income (cont.)		−0.006		−0.001
		(0.003)		(0.002)
Female (bi.)		−0.022		−0.004
		(0.015)		(0.010)
College or more		0.010		0.013
		(0.018)		(0.012)
Age		-0.002^{***}		-0.002^{***}
		(0.000)		(0.000)
Republican (-1, 1)		-0.036^{***}		-0.025^{***}
		(0.008)		(0.006)
(Intercept)	0.602^{***}	0.746^{***}	0.524^{***}	0.631^{***}
	(0.012)	(0.030)	(0.008)	(0.020)
R^2	0.024	0.056	0.009	0.055
Adj. R^2	0.023	0.051	0.008	0.050
Num. obs.	1564	1527	1536	1500
RMSE	0.287	0.284	0.194	0.191

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-5: Effect of process on perceived fairness and legitimacy of siting decision (Experiment 2, Branch 1 only).

	Model 1	Model 2	Model 3	Model 4
State board	-0.104^{***}	-0.091^{***}	-0.103^{***}	-0.095^{***}
	(0.017)	(0.016)	(0.017)	(0.017)
Homeowner	-0.005	0.004	-0.003	0.002
	(0.020)	(0.019)	(0.020)	(0.020)
White, non-Hispanic	0.018	0.009	0.017	0.031
	(0.020)	(0.020)	(0.020)	(0.020)
Income (cont.)	0.006	0.006	0.006	0.006
	(0.003)	(0.003)	(0.003)	(0.003)
Female (bi.)	-0.003	0.013	-0.008	-0.001
	(0.017)	(0.016)	(0.017)	(0.017)
College or more	0.041^{*}	0.038^{*}	0.039^{*}	0.041^{*}
	(0.019)	(0.018)	(0.018)	(0.018)
Age	-0.002^{*}	-0.001	-0.001^{*}	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Republican (-1, 1)	-0.046^{***}	-0.001	-0.019	-0.030^{**}
	(0.010)	(0.010)	(0.012)	(0.010)
Pretreatment project support		0.328^{***}		
		(0.031)		
Climate change concern			0.162^{***}	
			(0.044)	
Expected effects on property				0.309^{***}
				(0.045)
(Intercept)	0.550^{***}	0.312^{***}	0.418^{***}	0.369^{***}
	(0.035)	(0.040)	(0.051)	(0.043)
R^2	0.081	0.189	0.095	0.137
Adj. R^2	0.073	0.181	0.086	0.129
Num. obs.	956	956	956	955
RMSE	0.265	0.249	0.263	0.257

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-6: Effect of state board with limited input on perceived fairness of siting decision, alternative specification (Experiment 1, Branch 1 only).

	Experiment 1: Fairness	
	Model 1	Model 2
State board, limited input	−0.096***	−0.097***
	(0.017)	(0.017)
Prefer local government	0.171***	0.167***
	(0.022)	(0.023)
State board, limited input x Local preference	−0.057	−0.063
	(0.034)	(0.033)
Homeowner		−0.011
		(0.019)
White, non-Hispanic		0.025
		(0.019)
Income (cont.)		0.003
		(0.003)
Female (bi.)		−0.002
		(0.017)
College or more		0.029
		(0.018)
Age		−0.002***
		(0.001)
Republican (-1, 1)		−0.035***
		(0.010)
(Intercept)	0.541***	0.593***
	(0.011)	(0.034)
R^2	0.109	0.144
Adj. R^2	0.106	0.135
Num. obs.	964	956
RMSE	0.260	0.256

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-7: Effect of process—interacted with preference for local government—on perceived fairness and legitimacy of siting decision (Experiment 1, Branch 1 only).

	Experiment 2: Fairness		Experiment 2: Legitimacy	
	Model 1	Model 2	Model 3	Model 4
Drop box comment	−0.087***	−0.089***	−0.029**	−0.030**
	(0.014)	(0.015)	(0.010)	(0.010)
State board	−0.030*	−0.029*	−0.023*	−0.023*
	(0.014)	(0.015)	(0.010)	(0.010)
Prefer local government	−0.042	−0.034	−0.012	−0.004
	(0.025)	(0.024)	(0.015)	(0.015)
Drop box x Local preference	0.036	0.025	0.014	0.009
	(0.031)	(0.030)	(0.020)	(0.020)
State board x Local preference	−0.056	−0.056	−0.039	−0.043*
	(0.031)	(0.031)	(0.020)	(0.020)
Homeowner		0.006		−0.021
		(0.018)		(0.012)
White, non-Hispanic		0.009		0.022
		(0.021)		(0.014)
Income (cont.)		−0.006		−0.001
		(0.003)		(0.002)
Female (bi.)		−0.024		−0.005
		(0.015)		(0.010)
College or more		0.012		0.014
		(0.018)		(0.012)
Age		−0.002***		−0.002***
		(0.000)		(0.000)
Republican (-1, 1)		−0.036***		−0.025***
		(0.008)		(0.006)
(Intercept)	0.602***	0.743***	0.524***	0.631***
	(0.012)	(0.030)	(0.008)	(0.020)
R^2	0.035	0.066	0.015	0.061
Adj. R^2	0.032	0.058	0.012	0.054
Num. obs.	1563	1526	1535	1499
RMSE	0.286	0.283	0.194	0.190

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-8: Effect of process—interacted with preference for local government—on perceived fairness and legitimacy of siting decision (Experiment 2, Branch 1 only).

I.2 Resilience of Process

	Experiment 1: Fairness	
	Model 1	Model 2
State board, limited input	−0.103***	−0.104***
	(0.017)	(0.017)
Outcome known	0.005	0.005
	(0.017)	(0.017)
State board, limited input x Outcome known	0.021	0.020
	(0.024)	(0.024)
Homeowner		0.008
		(0.014)
White, non-Hispanic		0.013
		(0.014)
Income (cont.)		0.002
		(0.002)
Female (bi.)		−0.016
		(0.012)
College or more		0.027*
		(0.013)
Age		−0.002***
		(0.000)
Republican (-1, 1)		−0.044***
		(0.007)
(Intercept)	0.546***	0.576***
	(0.012)	(0.027)
R^2	0.029	0.064
Adj. R^2	0.028	0.060
Num. obs.	1995	1979
RMSE	0.273	0.268

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-9: Effect of process—interacted with knowledge of decision outcome—on perceived fairness and legitimacy of siting decision (Experiment 1, Branches 1 and 2).

	Experiment 2: Fairness		Experiment 2: Legitimacy	
	Model 1	Model 2	Model 3	Model 4
Drop box comment	−0.086***	−0.088***	−0.028**	−0.029**
	(0.015)	(0.015)	(0.010)	(0.010)
State board	−0.032*	−0.033*	−0.024*	−0.024*
	(0.015)	(0.015)	(0.010)	(0.010)
Outcome known	0.020	0.019	0.025*	0.026*
	(0.018)	(0.018)	(0.012)	(0.012)
Drop box x Outcome known	−0.005	−0.006	−0.001	−0.002
	(0.021)	(0.021)	(0.015)	(0.015)
State board x Outcome known	−0.003	−0.002	0.010	0.013
	(0.021)	(0.021)	(0.015)	(0.015)
Homeowner		−0.003		−0.011
		(0.013)		(0.009)
White, non-Hispanic		−0.013		0.002
		(0.016)		(0.010)
Income (cont.)		−0.005		−0.001
		(0.002)		(0.002)
Female (bi.)		−0.010		−0.003
		(0.011)		(0.008)
College or more		0.020		0.019*
		(0.013)		(0.010)
Age		−0.001*		−0.001***
		(0.000)		(0.000)
Republican (-1, 1)		−0.029***		−0.015***
		(0.006)		(0.004)
(Intercept)	0.602***	0.684***	0.524***	0.585***
	(0.012)	(0.024)	(0.008)	(0.016)
R^2	0.025	0.039	0.012	0.026
Adj. R^2	0.024	0.036	0.010	0.022
Num. obs.	3076	3004	3022	2953
RMSE	0.294	0.292	0.204	0.203

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-10: Effect of process—interacted with knowledge of decision outcome—on perceived fairness and legitimacy of siting decision (Experiment 2, Branches 1 and 2).

	Experiment 1: Fairness	
	Model 1	Model 2
State board, limited input	−0.086**	−0.086***
	(0.026)	(0.026)
Outcome match	0.139***	0.137***
	(0.025)	(0.025)
State board, limited input x Outcome match	0.006	0.003
	(0.035)	(0.035)
Homeowner		0.017
		(0.021)
White, non-Hispanic		0.010
		(0.021)
Income (cont.)		0.001
		(0.003)
Female (bi.)		−0.014
		(0.018)
College or more		0.002
		(0.019)
Age		−0.002**
		(0.001)
Republican (-1, 1)		−0.043***
		(0.010)
(Intercept)	0.483***	0.538***
	(0.019)	(0.041)
R^2	0.085	0.114
Adj. R^2	0.082	0.104
Num. obs.	953	946
RMSE	0.270	0.267

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-11: Effect of process—interacted with outcome match—on perceived fairness and legitimacy of siting decision (Experiment 1, Branch 2 only).

	Experiment 2: Fairness		Experiment 2: Legitimacy	
	Model 1	Model 2	Model 3	Model 4
Drop box comment	−0.079***	−0.079***	−0.039*	−0.041*
	(0.024)	(0.024)	(0.017)	(0.017)
State board	−0.088***	−0.088***	−0.032	−0.027
	(0.024)	(0.024)	(0.017)	(0.017)
Outcome match	0.157***	0.159***	0.114***	0.114***
	(0.027)	(0.027)	(0.020)	(0.020)
Drop box x Outcome match	−0.033	−0.038	0.024	0.027
	(0.032)	(0.033)	(0.023)	(0.024)
State board x Outcome match	0.086**	0.087**	0.031	0.027
	(0.032)	(0.032)	(0.023)	(0.024)
Homeowner		−0.020		−0.002
		(0.022)		(0.015)
White, non-Hispanic		−0.033		−0.014
		(0.026)		(0.018)
Income (cont.)		−0.004		0.000
		(0.004)		(0.003)
Female (bi.)		0.016		0.004
		(0.017)		(0.012)
College or more		0.033		0.025
		(0.020)		(0.015)
Age		0.000		−0.000
		(0.001)		(0.000)
Republican (-1, 1)		−0.023*		−0.008
		(0.009)		(0.007)
(Intercept)	0.558***	0.581***	0.496***	0.501***
	(0.021)	(0.039)	(0.014)	(0.027)
R^2	0.121	0.135	0.110	0.113
Adj. R^2	0.118	0.126	0.107	0.104
Num. obs.	1315	1290	1292	1269
RMSE	0.294	0.292	0.210	0.210

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table I-12: Effect of process—interacted with outcome match—on perceived fairness and legitimacy of siting decision (Experiment 2, Branch 2 only).