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Abstract

Guided by a theoretical framework, we study how perceived relative income affects preferences for public goods. In a randomized survey experiment, we inform respondents from India of their official income rank and elicit preferences for air quality, including actual contributions to environmental initiatives. Right-wing supporters withdraw contributions when perceived relative income increases. The effect coincides with diminished health concerns and lower intentions to utilize private protection measures against air pollution. In contrast, center-left supporters do not reduce contributions. A second survey experiment demonstrates the causality of the relationship using a novel treatment that exogenously shifts relative income perceptions.

JEL Classification: C83, D31, H41, I14, O15, Q53
Keywords: perceived relative income; public goods; voluntary contributions; air pollution.

Public goods such as environmental quality, affordable education, and collective health care are redistributive in nature. Increasing their provision will generally have larger marginal benefits for the poor than for the rich (Hsiang, Oliva and Walker, 2019; Banzhaf, Ma and Timmins, 2019). Their redistributive nature implies that one needs to consider the

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shape of the income distribution and the individual's position within it to better understand preference formation. Yet, individuals typically have imprecise knowledge about income inequality and their own relative income (Norton and Ariely, 2011; Kuziemko et al., 2015; Karadja, Mollerstrom and Seim, 2017; Fehr, Mollerstrom and Perez-Truglia, 2022) and instead rely on *perceptions* to form policy preferences (Stantcheva, 2021).

In this paper, we fill a gap in the literature by studying the role of perceived relative income on preferences for the provision of public goods. Keeping absolute income levels constant, we study whether individuals that perceive to have a higher rank in the income distribution contribute differently to public goods than individuals that perceive to have a lower rank. Beyond aggregate effects, we focus on political leaning as a potentially critical determinant of preferences for public good provision, with the political left being generally more supportive of public goods that reduce inequality than the political right, see Hoenig, Pliskin and De Dreu (2023) and references therein.[1] We thus focus on how individuals' perceptions of where they stand in the income distribution interact with their political leaning in the formation of preferences for redistributive public goods.

We start by proposing a theoretical framework of voluntary public good provision in a setting of incomplete information about one's relative income. We assume that individuals are not informed about their personal marginal per capita return (MPCR) from the public good but instead form beliefs based on information about the population average MPCR. Considering the redistributive nature of the public good, we show that an individual's perceived MPCR decreases in perceived relative income. Under standard preferences, we predict that when perceived relative income increases, preferences for the public good decrease. We then extend the framework to study heterogeneity by political leaning, captured through inequality aversion (Fehr and Schmidt, 1999). The premise is based on evidence that the political divide between left and right is associated with substantial differences in policy views, whereby the political left has stronger preferences for equality than the right (Feldman, 2003; Claessens et al., 2020; Guriev and Papaioannou, 2022). We show that inequality aversion can mitigate the reduction in preferences for the public good induced by a decreasing MPCR. The model predicts that an increase in perceived relative income will reduce contributions to the public good more for the right-wing than for the left-wing.

We test our theoretical predictions with an empirical application to the context of air

[1] Hoenig, Pliskin and De Dreu (2023) show that left-leaning individuals are more likely to cooperate (and also more likely to expect others to cooperate) in public good games that achieve a more equal distribution of payoffs than right-leaning individuals. In public good games that lead to an unequal distribution of payoffs, left- and right-leaning individuals are similarly likely to cooperate.

quality in India. Air quality is a textbook example of a redistributive public good that is insufficiently provided around the globe. Despite its universal relevance, the burden of air pollution is disproportionately carried by the poor, see Currie, Voorheis and Walker (2023) and references therein. In India, a particularly severe air pollution crisis leads to an estimated 1.67 million premature deaths and economic costs of around 1.3% of India's total economic output each year, with even higher impacts on the poor (Pandey et al., 2021).[2] Moreover, the Indian context exemplifies prevalent underinvestments in environmental quality in developing countries: although pollution crises are mounting, the willingness to pay for environmental quality improvements remains surprisingly low (Greenstone and Jack, 2015; Greenstone, Lee and Sahai, 2021).

We conduct two randomized online survey experiments with an Indian sample (N = 2,472) to study the role of perceived relative income on preferences for air quality. In a first survey experiment, we use the standard approach of a growing literature on preferences for income redistribution and induce variation in perceived relative income by informing respondents about their place in the income distribution based on official statistics (Karadja, Mollerstrom and Seim, 2017; Hoy and Mager, 2021; Hvidberg, Kreiner and Stantcheva, 2023). The information treatment is designed to shift respondents' perceived relative income by reducing existing misperceptions. The approach is lauded for its ability to inform public policy, *e.g.*, income transparency programs. However, such information treatments induce a shift in perceived relative income that is, by design, endogenous to prior misperceptions.

To address the endogeneity, we run a second survey experiment where we propose a novel method to induce exogenous variation in perceived relative income. We design two treatments that shift perceptions either upwards or downwards, independent of whether respondents under- or overestimate their relative income at baseline. By asking respondents to place a very rich or very poor comparison household in the income distribution before placing their own household, the treatments expose respondents to a case of acute wealth or poverty. This results in an exogenous shift in own perceived income rank which allows us to test the causality of the relationship between relative income perceptions and

[2]The disparities in air pollution exposure with respect to socio-economic status are often referred to as double victimization of the poor. First, the poor are more exposed to air pollution which leads to lower health outcomes: they generally live closer to pollution sources such as high-traffic roads, have a higher likelihood of cooking with solid fuels on an open fire, and tend to spend more time outside during peak pollution levels that are detrimental to human health. Second, the poor are more susceptible to the adverse health effects of air pollution. They are less likely to be able to afford private protective measures such as air purifiers, have less access to health care, and are excluded from social practices against air pollution due to their low socio-economic status. See Kathuria and Khan (2007) and Chakraborty and Basu (2021) for empirical evidence in the Indian context.

preferences for the public good.

As outcomes, we collect both revealed and stated preferences. First, respondents are given the opportunity to contribute part of their remuneration for participating in the survey experiment to a non-governmental organization (NGO) that tackles the air pollution crisis in India. Second, we elicit preferences for a mandatory provision of the public good by measuring the stated support for public policies that aim to reduce air pollution. Third, we elicit stated support for the formal redistribution of income and governmental efforts to ensure environmental justice. Finally, we elicit stated preferences for the intended use of private protection measures against air pollution to quantify respondents' willingness to rely on private solutions along with or instead of public ones.

To shed light on the potential channels through which a change in perceived relative income affects preferences for public good provision, we proceed twofold. First, we elicit respondents' beliefs about the impact of air pollution on their personal health. The elicitation is conducted post-treatment and aims to capture changes in respondents' beliefs about the marginal benefit of the public good as proposed by the first mechanism in the theoretical framework. Second, we test whether treatment effects on preferences for the public good are heterogeneous by political leaning. Thereby, we assess whether results are consistent with different levels of inequality aversion between the right- and the left-wing.

In our first survey experiment, we find that providing information about respondents' actual place in the income distribution reduces misperceptions and thereby successfully induces variation in perceived relative income. Given a relatively rich sample, the aggregate effect is an increase in perceived relative income. The adjustment causes a reduction in voluntary contributions to the public good. Moreover, the effect coincides with a reduction in the perceived impact of air pollution on personal health. In line with our theoretical framework, results suggest that while keeping absolute income fixed, the perceived marginal benefit from the public good is decreasing in perceived relative income. The validity of the channel is reinforced by a simultaneous reduction in the intention to utilize private protection measures against air pollution. We exclude several competing mechanisms. We find no evidence that voluntary contributions are crowded out by a change in preferences for the implementation of public policies to address air pollution through dedicated taxation. We view this as suggestive evidence against an updating of beliefs about the level of taxation relative to others. Moreover, we observe neither changes in general altruism nor an emotional response, dismissing changes in inequality aversion and potential warm-glow effects (Andreoni, 1990).

We document strong heterogeneity by political leaning. In our sample, more than 50%

of respondents support right-wing parties, a share that is representative of the national political landscape in India where the governing right-wing Bharatiya Janata Party (BJP) holds the parliamentary majority since 2014. Compared to the control group, right-wing respondents are about 11 percentage points less likely to contribute to the public good when the information treatment induces an upwards adjustment of perceived relative income. As in the aggregate sample, the effect coincides with reduced health concerns and lower intended adoption of private protection measures against air pollution. Moreover, preferences for redistribution policies are reduced. For center-left respondents that account for about 20% of our sample, we find contrasting results. Here, the treatment effect on contributions is positive, albeit not significantly different from zero. Independent of political leaning, the treatment does not induce a change in preferences for public policies that target air quality improvements suggesting that results are not driven by the fact that right-wing and center-left supporters have different preferences for the government's role in providing the public good.

With our second survey experiment, we are successful in inducing sizeable exogenous variation in perceived relative income and thereby demonstrate the causality of the relationship between relative income perceptions and preferences for the provision of a redistributive public good. Right-wing respondents treated to feel relatively richer are less likely to contribute to the public good. Again, the effect coincides with a significant reduction in the perceived impacts of air pollution on personal health. In contrast, respondents that support the center-left do not withdraw their contributions when perceived relative income increases. In line with the first survey experiment, preferences for public policies to address air pollution, including dedicated taxes, as well as altruism and happiness are not responsive to changes in perceived relative income.

In both experiments, right-wing respondents reduce their contributions when their perceived relative income is shifted upward. However, we do not find the opposite effect when perceived relative income decreases. In the first experiment, we observe no adjustments in contributions, and in the second experiment, contributions even decrease among right-wing voters when perceived relative income is shifted downward. Perceived health impacts of air pollution and the intended adoption of protection measures respond accordingly. These asymmetric results suggest a behavioral bias: when right-wing respondents experience a disadvantageous shift in perceived relative income, they either do

not update their beliefs about the health impacts of air pollution or do so self-servingly.[3]

Our findings add to the ongoing discussion on income transparency (Card et al., 2012; Perez-Truglia, 2020). We show that information about relative income may compromise public good provision, especially when the political majority does not hold sufficiently strong preferences for equality. Of added concern to policy makers is that an increase in perceived relative income not only induces the withdrawal of contributions but also leads to a lower intention to adopt private measures that limit pollution exposure. Our study demonstrates that these effects are not conditional on correcting endogenous misperceptions but generally apply to the relationship between perceived relative income and preferences for public good provision. We propose and measure a key underlying mechanism: A change in perceived relative income diminishes concerns for an underprovision of the public good as respondents form beliefs about their personal marginal benefits. We believe that studying the formation of beliefs about marginal benefits is crucial for policy makers and researchers interested in understanding preferences for public good provision.

Our study makes three main contributions. First, we relate to the rich literature that studies relative income perceptions. Besides their effect on life- and job satisfaction (Luttmer, 2005; Card et al., 2012; Perez-Truglia, 2020), risk-taking (Fehr and Reichlin, 2021), and residential sorting (Bottan and Perez-Truglia, 2022), the related literature has particularly focused on the relationship between relative income perceptions and the demand for national and global redistribution, with conflicting results so far (Cruces, Perez-Truglia and Tetaz, 2013; Kuziemko et al., 2015; Nair, 2018; Hoy and Mager, 2021; Fehr, Mollerstrom and Perez-Truglia, 2022). Our study on preferences for air quality, a public good whose provision is redistributive in nature, adds to the literature twofold. On the one hand, we show that preferences for public good provision are dependent on perceived relative income and its interaction with political leaning. That is, when right-wing individuals become relatively richer, they reduce contributions to the public good. The effect is consistent with a lower demand for redistribution among the right-wing as documented by Karadja, Mollerstrom and Seim (2017). On the other hand, we find evidence that the effect occurs due to changes in the perception of the marginal benefit from the public good. We believe that future evaluations of the effects of perceived relative income will benefit from eliciting similar perceptions of marginal benefits in order to

[3]For instance, the results can be explained by an asymmetric processing of objective information, whereby negative signals are less likely to lead to updates in behavior (Eil and Rao, 2011; Kuzmanovic and Rigoux, 2017). In the domain of personal health beliefs, our results lend further empirical support to Oster, Shoulson and Dorsey (2013) and Schwardmann (2019) who document motivated health risk denial.

point to underlying mechanisms. In combination with a measurement of other-regarding preferences, such a step could help to reconcile conflicting evidence.

Second, we introduce a new methodology to exogenously vary perceived relative income. With the exception of Fehr and Reichlin (2021), the discipline relies on the correction of misperceptions to induce variation in perceived relative income. Such information provision treatments are endogenous to misperceptions at baseline, obscuring an attempt to causally interpret the relationship between perceptions and outcomes of interest. In contrast, our comparison approach allows researchers to assess the marginal effect of shifting perceived relative income upwards or downwards both independent of the respondent's rank in the income distribution and independent of existing misperceptions. We believe that our methodology is a valuable addition to the toolbox of economists that study relative income misperceptions in the domains of inequality, redistribution, and related topics.

Third, our study adds to the literature on the relationship between inequality, income rank, and preferences for public goods. To the best of our knowledge, we are the first to isolate the role of relative income *perceptions* on the formation of preferences for public good provision. Furthermore, we show that individuals form heterogeneous beliefs about their personal benefit from a real public good and demonstrate how this in turn affects preferences for its provision. Our approach differs from previous experiments, where the marginal benefit from the public good is either fixed by design (Heap, Ramalingam and Stoddard, 2016; Hauser et al., 2019) or not measured (Duquette and Hargaden, 2021).

I. Theoretical Framework

A. MPCR Belief Formation

We propose a theoretical framework to study how relative income perceptions affect preferences for public goods.[4] In a single-period static model, consider an individual i that derives utility from a private good p_i and a public good G. Individual i faces a budget constraint b_i with $b_i \geq p_i + g_i$. Each unit of the private good is valued at γ, while the public good has a MPCR δ_i that depends on individual characteristics. The public good we consider is redistributive such that δ_i is decreasing in b_i. The individual's total payoff is given by:

$$x_i = \gamma \cdot p_i + \delta_i \cdot G, \tag{1}$$

[4]Our focus is on preferences at the individual level. Implications for the aggregated provision of the public good are beyond the scope of this study.

where the public good provided $G = \sum_{j=1}^{N} g_j$ is the sum of contributions to the public good by all N individuals in the economy. We assume that individual i observes the contributions to the public good of all other individuals before deciding on g_i.[5] Assuming standard preferences, the utility function of individual i is $U_i = x_i$. The marginal willingness to contribute to the public good is given by the marginal rate of substitution between the public and the private good:

$$MWTP_i^S \equiv \frac{\frac{\partial U_i}{\partial g_i}}{\frac{\partial U_i}{\partial p_i}} = \frac{\delta_i}{\gamma}. \tag{2}$$

We assume that individual i does not know her personal marginal benefit δ_i, as personal benefits from public goods are intrinsically difficult to quantify. Instead, she forms a belief about δ_i, denoted $\hat{\delta}_i$. In particular, individual i is informed about the average marginal benefit of the public good in the population (denoted $\bar{\delta}$, where $\bar{\delta} = \frac{1}{N}\sum_{j=1}^{N} \delta_j$) and forms a belief about $\hat{\delta}_i$ by adjusting $\bar{\delta}$ to account for personal characteristics. This is plausible given that information about the marginal benefits of a public good, if available, is presented as a population average, at most highlighting particular costs for broad subgroups of the population.[6]

To isolate the role of perceived relative income, we fix all other individual characteristics and describe the mapping from $\bar{\delta}$ to $\hat{\delta}_i$ only in terms of the perceived income rank of individual i. Let $\hat{L}_i$ denote the number of individuals that i perceives to have a lower income than herself. $\bar{\delta}$ can be written as an average over the $\hat{L}_i$ individuals with a perceived lower income and the remaining $N - 1 - \hat{L}_i$ individuals with a perceived higher income than individual i. That is, ordering all N individuals by their absolute income from the lowest to the highest ($b_j \leq b_{j+1}$, $\forall j \in [1, N]$), the population average is: $\bar{\delta} = \frac{1}{N}(\sum_{j=1}^{\hat{L}_i} \hat{\delta}_j + \hat{\delta}_i + \sum_{j=\hat{L}_i+2}^{N} \hat{\delta}_j)$. Then, $\hat{\delta}_i$ can be written as:

$$\begin{aligned}\hat{\delta}_i &= N \cdot \bar{\delta} - \sum_{j=1}^{\hat{L}_i} \hat{\delta}_j - \sum_{j=\hat{L}_i+2}^{N} \hat{\delta}_j \\ &= N \cdot \bar{\delta} - \left(\hat{a}_i \hat{\bar{\delta}}_f + (1 - \hat{a}_i)\hat{\bar{\delta}}_k\right)(N-1),\end{aligned} \tag{3}$$

[5] With a sequential setup, the model abstracts from strategic considerations that could arise in a simultaneous game where individual i decides on g_i based on her beliefs about what others in the society contribute to the public good.

[6] Such information is usually presented in the media, scientific reports, and by governments or international organizations. In the example of air pollution, a popular formulation is that air pollution increases the chance of a premature death, often highlighting that children, pregnant women, and senior citizens are the most vulnerable.

where $\hat{a}_i = \frac{\hat{L}_i}{N-1}$ is the perceived rank in the income distribution of individual i and $\hat{\bar{\delta}}_f = \frac{1}{\hat{L}_i}\sum_{p=1}^{\hat{L}_i}\hat{\delta}_f$ and $\hat{\bar{\delta}}_k = \frac{1}{N-1-\hat{L}_i}\sum_{k=1}^{N-1-\hat{L}_i}\hat{\delta}_k$ are the perceived average marginal benefits from the public good over all individuals with lower payoffs and higher payoffs than individual i, respectively. In Equation (3), individuals are in ascending order according to their absolute income (*i.e.*, $b_j \leq b_{j+1}$, $\forall j \in [1, N]$). But given the negative relationship between marginal benefits and perceived relative income (*i.e.*, $\frac{\partial\hat{\delta}_j}{\partial b_j} < 0$), individuals in Equation (3) are in descending order according to the perceived MPCR (*i.e.*, $\hat{\delta}_j \leq \hat{\delta}_{j+1}$, $\forall j \in [1, N]$). It follows that $\hat{\bar{\delta}}_f > \hat{\delta}_i > \hat{\bar{\delta}}_k$, $\frac{\partial\hat{\bar{\delta}}_f}{\partial\hat{a}_i} > 0$, and $\frac{\partial\hat{\bar{\delta}}_k}{\partial\hat{a}_i} < 0$. Equation (3) shows that the perceived MPCR from the public good by individual i is a decreasing function of the perceived rank in the income distribution $\hat{a}_i$, since $\frac{\partial\hat{\delta}_i}{\partial\hat{a}_i} = (-\frac{\partial\hat{\bar{\delta}}_f}{\partial\hat{a}_i} + \frac{\partial\hat{\bar{\delta}}_k}{\partial\hat{a}_i})(N-1) < 0$.

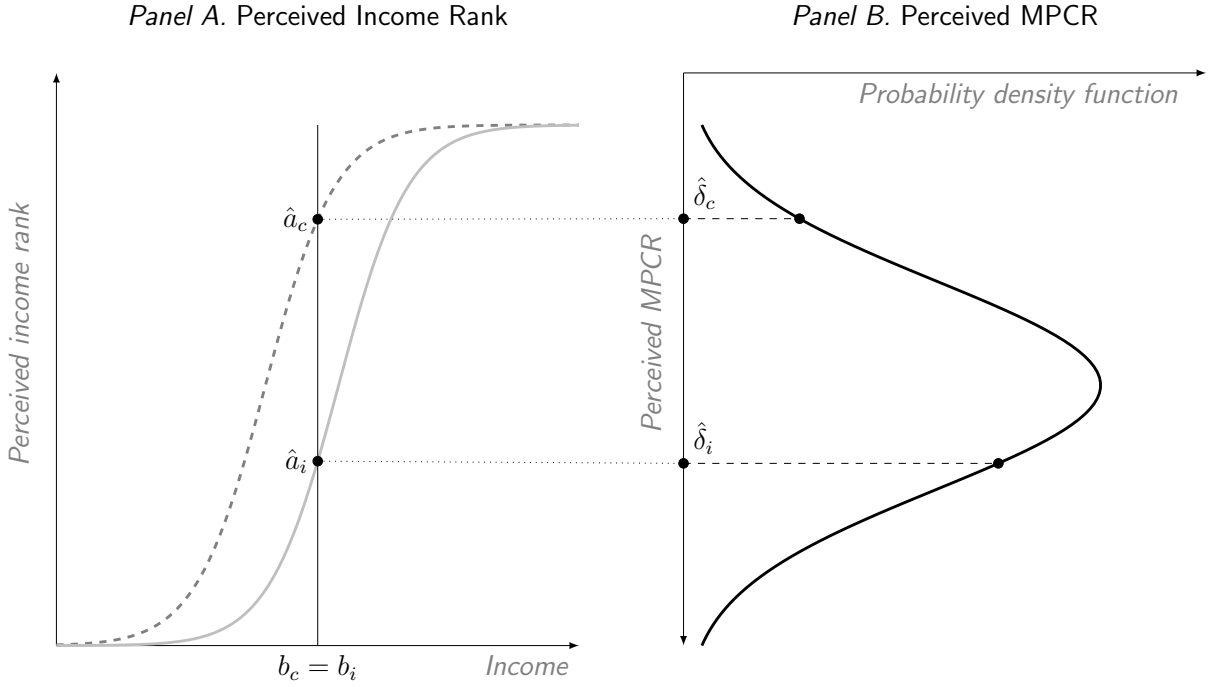

FIGURE 1 – MAPPING FROM PERCEIVED RELATIVE INCOME TO THE PERCEIVED MPCR FROM THE PUBLIC GOOD.

Notes: The figure illustrates the mapping from the perceived rank in the income distribution (panel A) onto the perceived distribution of marginal benefits from the redistributive public good (panel B, rotated by 90 degrees for a better illustration). Two individuals i and c have the same absolute income but differ in their perception of the income distribution and their own position within it. This lead to differences in the formation of beliefs about own marginal benefits from the public good. A higher relative income (exemplified by individual c) is associated with lower perceived marginal benefits.

Figure 1 illustrates the mapping from perceived relative income to the perceived MPCR from the public good of two individuals i and c that are identical in all aspects, including their absolute income levels ($b_i = b_c$), but differ with respect to their perceived position in the income distribution. Panel A depicts two perceived cumulative density

functions of income, where individual c perceives to have a higher rank in the income distribution than individual i (*i.e.*, $\hat{a}_c > \hat{a}_i$). This results in two different mappings to the MPCR distribution. Individual i, who assumes to be lower in the income distribution than individual c, perceives to have a higher MPCR than individual c (*i.e.*, $\hat{\delta}_i < \hat{\delta}_c$).[7]

With our framework, we can study how the marginal willingness to contribute to the public good varies with changes in perceived relative income. The first derivative of MWTP_i^S with respect to $\hat{a}_i$ is given by:

$$\frac{\partial MWTP_i^S}{\partial \hat{a}_i} = \frac{1}{\gamma} \cdot \frac{\partial \hat{\delta}_i}{\partial \hat{a}_i} < 0. \tag{4}$$

With MWTP_i^S decreasing in $\hat{a}_i$, we can formulate the following prediction:

Prediction 1 *All other things equal, an increase in perceived relative income will decrease individual preferences for public good provision.*

B. Inequality Aversion

We extend the framework to study how the interaction of perceived relative income with political leaning affects preferences for public good provision. A core difference between the political right and left is their preferences for equality and redistribution (Feldman, 2003; Claessens et al., 2020; Guriev and Papaioannou, 2022; Hoenig, Pliskin and De Dreu, 2023). We incorporate this difference into our model by introducing variation in the extent to which individuals are averse to population-wide inequality. We adapt the Fehr and Schmidt (1999) model of inequality aversion to our setting with two goods.[8] To study the role of perceived relative income, we consider an inequality averse individual whose utility function not only depends on the personal payoff x_i, but also on the difference between her own payoff and the payoffs of everyone else:

$$U_i(p_i, g_i) = x_i - \mu_i \frac{1}{N-1} \sum_{j \neq i}^{N} max\{x_i - x_j, 0\} - \mu_i \frac{1}{N-1} \sum_{j \neq i}^{N} max\{x_j - x_i, 0\}. \tag{5}$$

[7] The implications are independent of the assumed shape of the income and MPCR distributions.

[8] A related exercise is developed in Buckley and Croson (2006) who study the impact of income inequality (individuals with heterogeneous endowments) on voluntary public good provision in a setting of perfect information. Allowing for imperfect information, we add to the literature by studying the impact of relative income (mis)perceptions on preferences for the public good. Card et al. (2012) and Hoy and Mager (2021) present inequality aversion models where they study the impact of belief updating about relative income in the context of a single private good.

The second and third terms in Equation (5) capture the utility loss individual i incurs from having unequal payoffs to the other $N-1$ individuals in the economy, with $0 < \mu_i < 1$ as the sensitivity parameter for advantageous and disadvantageous inequality. To illustrate the role of perceived relative income, let individual i perceive that of all N individuals in the economy, $\hat{L}_i$ have a lower payoff and $N-1-\hat{L}_i$ have a higher payoff than herself.[9] The utility function can then be written as:

$$U_i(p_i, g_i) = x_i - \mu_i \frac{1}{N-1} \sum_{f=1}^{\hat{L}_i} (x_i - x_f) - \mu_i \frac{1}{N-1} \sum_{k=1}^{N-1-\hat{L}_i} (x_k - x_i), \tag{6}$$

where the subscript f corresponds to the $\hat{L}_i$ individuals perceived by individual i to have a lower payoff ($x_i > x_f, \forall f \in [1, \hat{L}_i]$), while the subscript k corresponds to the $N-1-\hat{L}_i$ individuals perceived by individual i to have a higher payoff ($x_i < x_k, \forall k \in [1, N-1-\hat{L}_i]$). Inserting Equation (1) for x_i, x_f, and x_k into Equation (6), the marginal willingness to contribute to the public good of an inequality averse individual is given by:[10]

$$MWTP_i^{IA} = \frac{\hat{\delta}_i}{\gamma} + \frac{\mu_i(\hat{a}_i \hat{\bar{\delta}}_f - (1-\hat{a}_i)\hat{\bar{\delta}}_k)}{\gamma(1+\mu_i(1-2\hat{a}_i))}, \tag{7}$$

where $\hat{a}_i = \frac{\hat{L}_i}{N-1}$ is the perceived rank in the income distribution of individual i and $\hat{\bar{\delta}}_f = \frac{1}{\hat{L}_i} \sum_{f=1}^{\hat{L}_i} \hat{\delta}_f$ and $\hat{\bar{\delta}}_k = \frac{1}{N-1-\hat{L}_i} \sum_{j=1}^{N-1-\hat{L}_i} \hat{\delta}_k$ are the perceived average marginal benefits from the public good over all individuals with lower payoffs and higher payoffs than individual i, respectively. Accounting for the negative relationship between marginal benefits and perceived relative income, it follows that $\hat{\bar{\delta}}_f > \hat{\delta}_i > \hat{\bar{\delta}}_k$, $\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}_i} > 0$, and $\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}_i} < 0$.

Equation (7) describes the marginal willingness to contribute to the public good of an inequality averse individual as a sum between the marginal willingness to contribute under standard preferences and an additional term. Let $m \equiv \frac{\mu_i(\hat{a}_i \hat{\bar{\delta}}_f - (1-\hat{a}_i)\hat{\bar{\delta}}_k)}{\gamma(1+\mu_i(1-2\hat{a}_i))}$. Then, $MWTP_i^{IA} = MWTP_i^S + m$. An increase in perceived relative income $\hat{a}_i$, all other things

[9] We assume the individual is similarly averse to advantageous and disadvantageous inequality. The model could be extended to allow for different sensitivities, as assumed in Fehr and Schmidt (1999). However, predictions from such an extension are not of interest within our survey experiment and we abstract from them in the theoretical framework. Also, note that in line with findings by Kuziemko et al. (2015) and Karadja, Mollerstrom and Seim (2017), we assume political preferences between left and right to be stable, *i.e.*, they are not substantially affected by a change in perceived relative income. That is, while Karadja, Mollerstrom and Seim (2017) do find that political preferences respond to a treatment that increases perceived relative income, authors document that those with a preference for the right-wing only move further to the right.

[10] See Appendix Section A for detailed derivations.

equal, will affect $MWTP_i^{IA}$ such that:

$$\frac{\partial MWTP_i^{IA}}{\partial \hat{a}_i} = \frac{\partial MWTP_i^{S}}{\partial \hat{a}_i} + \frac{\partial m}{\partial \hat{a}_i}, \tag{8}$$

where

$$\frac{\partial MWTP_i^{S}}{\partial \hat{a}_i} = \frac{1}{\gamma} \cdot \frac{\partial \hat{\delta}_i}{\partial \hat{a}_i} < 0, \tag{9}$$

and

$$\frac{\partial m}{\partial \hat{a}_i} = \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}_i))^2}\left[(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k) + \mu_i(\hat{\bar{\delta}}_f - \hat{\bar{\delta}}_k) + \left(\hat{a}_i\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}_i} - (1-\hat{a}_i)\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}_i}\right)(1+\mu_i(1-2\hat{a}_i))\right] > 0. \tag{10}$$

Here, $\frac{\partial m}{\partial \hat{a}_i} > 0$ as the square bracket contains a sum of terms that are each positive, given that $\mu_i \in (0,1)$, $\hat{a}_i \in (0,1)$, $\hat{\bar{\delta}}_f > \hat{\bar{\delta}}_k$, $\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}_i} > 0$ and $\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}_i} < 0$. Taken together, Equations (8) to (10) show that inequality aversion can mitigate the negative impact of an increase in perceived relative income on the marginal willingness to contribute to the public good induced by a decreasing MPCR.[11]

With the assumption that right-wing individuals are less inequality averse than left-leaning individuals, we formulate the following prediction:

Prediction 2 *All other things equal, an increase in perceived relative income will decrease individual preferences for public good provision more for right-wing than for left-wing individuals.*

II. The Survey Experiment on Income Information Provision

A. Data Collection

We conducted the first survey experiment with respondents from India on Dynata, a survey company commonly used for economic research (Stantcheva, 2022). Our sample is approximately representative of the national Indian adult population with respect to age and gender.[12] Respondents that completed the survey experiment were rewarded

[11] In the case where $\frac{\partial m}{\partial \hat{a}} > -\frac{1}{\gamma} \cdot \frac{\partial \hat{\delta}_i}{\partial \hat{a}}$, the inequality aversion effect dominates. The marginal willingness to pay for the public good would then increase at an increase in perceived relative income.

[12] The first survey experiment on information provision was conducted jointly with the second survey experiment on shifting perceived relative income exogenously which is described in Section III. Representativeness was based on information from the latest Indian census that was conducted in 2011. As older age brackets are generally under-represented for online panels in developing countries (Dechezleprêtre et al., 2022), we surveyed with flexibility above the age of 45.

by the survey company in the form of panel points that can be redeemed in various forms, including cash payments. In addition to the reward for completion, respondents received a bonus incentive payment of 120 Indian Rupees (INR).[13] Respondents remained fully anonymous and were free to leave the survey experiment at any time. The survey experiment was programmed in nodeGame (Balietti, 2017) and conducted in English. Data were collected in September and October 2022.

We took several steps to ensure data quality. Respondents were informed that surveys completed in a manner that appear to be rushed, inattentive, or otherwise negligent would not be rewarded, neither for completion nor with the bonus incentive. In particular, we pre-registered the following criteria that either prevented respondents from completing the survey or excludes them from the analysis. First, we introduced parts of the survey experiment as a "reading and comprehension" exercise in which progress was conditional on giving correct responses to questions about a page's content. Respondent that needed more than three attempts to correctly answer the third and final comprehension question could not continue with the survey. Second, we included an attention check in which we asked respondents directly whether they had paid attention. Respondents that answered with "no" were disconnected from the survey. Third, we excluded respondents with impossibly short completion times of less than 240 seconds for the full survey experiment or less than 90 seconds in the exit questionnaire. Fourth, we included questions with free text input to detect nonsensical and automated responses that are likely given by bots. And lastly, we excluded respondents with response patterns that we classify as straight-lining, *i.e.*, choosing the same response option multiple times in a row.

B. Design

The survey experiment was divided into four parts: (A) a short survey on demographic characteristics, (B) a reading and comprehension exercise on air pollution, (C) the experimental treatment variation, and (D) the elicitation of primary and secondary outcomes as well as an exit questionnaire on social and political preferences. Respondents were randomly assigned to either the control group or an income information group following a Latin square design.[14] Only part C varies by treatment, parts A, B, and D of the survey

[13] At the time of the survey, the bonus amounted to about USD 1.50. According to the Indian Ministry of Statistics and Programme Implementation (2021), the average hourly wage for regular salaried employees in India is between USD 0.65 and USD 1.34.

[14] Since the first survey experiment was conducted jointly with the second survey experiment (see Section III), the two treatments in the second survey experiment were part of the Latin square randomization procedure. See Appendix Table A-1 for an overview of the survey experiments procedure and the treatment variation therein.

experiment were identical for both groups.

Part A: Entry questionnaire – Respondents were asked a number of standard demographic questions. Among the survey questions in part A, we asked respondents for their yearly gross household income in 2021. The response options corresponded to the deciles of the official income decile for the respondent's state of residence.[15]

Part B: Air pollution information – In part B, all respondents received information on air pollution in order to reduce information asymmetries and differences in beliefs about the topic across treatment and control groups. We framed part B as a reading and comprehension exercise. The exercise comprised two information leaflets about air pollution in general and one personalized information leaflet about air pollution in the respondent's state of residence. The general leaflets included information on the main sources of air pollution and its adverse effects on health conditions caused by high exposure. Additionally, the personalized leaflet informed respondents on how the annual average $PM_{2.5}$ concentration in their respective state of residence based on the satellite grid data by van Donkelaar et al. (2021) compares to the current recommendation by the World Health Organization (WHO) of $5\mu g/m^2$. To give a tangible interpretation of the exposure level, we included a measure of expected average life years lost in the respective state based on the conversion proposed by Ebenstein, Lavy and Roth (2016). Respondents were not informed about the negative relationship between pollution exposure and income.

Part C: Treatment variation – Part C introduced the treatment variation. In both the control and treatment group, respondents were asked to think of the household income distribution for their state of residence divided into ten equally sized groups, *i.e.*, into deciles. In the control group, we simply elicited the perceived relative household income by asking respondents to which of the ten groups their own household belonged. In the income information treatment (IIT), respondents also gave their relative income perceptions but were then informed about their official income decile based on how their reported income (elicited in part A) fits into the representative income distribution of the respective state of residence. Afterwards, the elicitation of own relative household income was repeated to obtain posterior beliefs.

Part D: Outcome measurement and exit questionnaire – In part D, we elicited a set of

[15] Official income deciles were based on the periodic labor force survey (PLFS) conducted by the Indian Ministry of Statistics and Program Implementation. In this study, we use data from the third wave of the PLFS that ran from July 2019 to June 2020. The PLFS is representative of the Indian population on the national and state level.

outcome variables to explore potential channels. First, we measured respondents' revealed preferences for public good provision by offering the opportunity to voluntarily contribute any positive amount of their 120 INR bonus incentive to an Indian NGO that leads initiatives against air pollution.[16] Second, we elicited support for public policies aimed at reducing air pollution as a stated measure of preferences for the public good. The public policies included a ban on the burning of waste and agricultural residues, higher vehicle registration and road taxes, higher fuel taxes, and the extension or introduction of no-drive days for vehicles. Third, we elicited support for redistribution by asking respondents for their views on the severity of income inequality levels in India and the role of the government in reducing inequality and ensuring environmental justice. Fourth, we elicited respondents' intention to use private measures to protect themselves against air pollution or reduce exposure as a measure for private substitution effects. Protection measures included the use of an air purifier indoors, preventive medical check-ups, a change in the private schedule to avoid high pollution areas, and the frequent ventilation of rooms (at times of lower outdoor pollution).

As channels for potential treatment effects on our main outcomes, we conducted a post-treatment elicitation of perceived health impacts by asking respondents how much they believe their personal health is impacted by air pollution. Perceived health impacts provide an approximate measure of respondents' perceived MPCR, *i.e.*, the perceived marginal benefit from the public good. As a last step, we elicited respondents' political leaning. With an increasing polarization of the political system, clientelism, and caste, language as well as religion being important determinants of voting decisions, we assume political preferences in India to be relatively stable, particularly in the short term (Heath, 2005; Anderson, Francois and Kotwal, 2015; Dash and Ferris, 2021).

C. Summary Statistics

A total of 1,615 respondents completed the survey experiment in the control and income information groups. After applying the pre-registered exclusion criteria (see Section II.A),

[16] Available NGOs were (1) the "Chintan Environmental Research and Action Group", an organization fighting air pollution through better waste management, (2) the "Indian Pollution Control Association" which is committed to better air quality monitoring, (3) the "Lungcare Foundation" that supports research and awareness campaigns for the health effects of air pollution, and (4) "WWF India", a general pro-environmental initiative. Respondents also had the option to choose "none", *i.e.*, to not contribute.

we retain a total of 1,254 respondents, well-balanced across the two groups.[17]

Table 1 reports pre-treatment summary statistics for respondents characteristics. Respondents have an average age of 37 years, and live in households with an average of 4.4 members. 48% of the sample is female, 93% resides in urban areas, and about every fourth respondent reports to be unemployed. Also, education levels in our sample are high with only 12% of respondents reporting to not have college education. The dataset includes respondents from 28 of the 36 different Indian states.

Table 1 – Summary statistics of respondent characteristics.

		Political leaning			p-value: Right
	All	Undisclosed	Center-left	Right	vs. Center-left
	(1)	(2)	(3)	(4)	(5)
Age	37.19	38.02	36.95	36.91	0.96
Female	0.48	0.48	0.50	0.48	0.67
Household size	4.41	4.39	4.37	4.43	0.66
Unemployed	0.23	0.31	0.23	0.19	0.20
Official income decile	7.95	8.07	7.82	7.94	0.55
Perceived income decile (prior)	6.06	5.65	6.28	6.16	0.44
Misperception(prior)	-1.89	-2.42	-1.53	-1.78	0.25
Abs. misperception (prior)	2.85	3.12	2.62	2.81	0.18
University degree	0.88	0.84	0.89	0.90	0.72
Rural	0.07	0.06	0.09	0.06	0.23
Smoking	0.19	0.15	0.22	0.20	0.47
Infrequent physical exercise	0.14	0.15	0.14	0.14	0.90
Diagnosed illnesses	0.37	0.34	0.41	0.38	0.32
Observations	1254	309	232	713	945

Notes: Mean values of pre-treatment respondent characteristics in the control and income information treatment groups, split by political leaning (Columns 1-4). Column (5) displays the p-value of a mean comparison test between right-wing and center-left respondents. The classification by political leaning is defined in Table 2. Diagnosed illnesses include allergies, high blood pressure, lung disease, and diabetes.

The sample is relatively rich and right-skewed with respect to household income. When comparing the reported income levels to the state specific income distributions in the official PLFS statistics, the average respondent is assigned a decile value of about 8 while the median respondent belongs to the 10^{th} income decile. Moreover, we take a first look at the data on relative income (mis)perceptions at baseline. Here, we can pool relative income perceptions in the control group with pre-treatment perceptions (prior) in the IIT group. According to official data, the average respondent belongs to the 8^{th}

[17] 2,046 respondents started the survey experiment, out of which about 21% either voluntarily left the survey early or were disconnected due to failing the comprehension test or the attention check. About 85% of the attrition happens pre-treatment and attrition is balanced across treatment groups, see Appendix A-2. For tests on the balance of a large set of observable characteristics between the control and IIT group, see Appendix Table A-5. We find that samples are well-balanced, with the only exceptions being rural residency which differs by 3 percentage points. Also, see Appendix Table A-3 for information on exclusion due to data cleaning.

income decile but perceives to be in the 6^{th} decile. The average misperception of -1.89 deciles hides heterogeneity across respondents with a positive and negative misperception, *i.e.*, across those that underestimate their relative income and those that overestimate it. Indeed, the absolute misperception is 2.85 deciles (significantly different from zero with $p < .001, N = 1,254$ in a two-sided t-test). We also find evidence for systematic and asymmetric misperceptions that are consistent with results on a so-called "median bias" or "middle-class bias" observed in other studies, see *e.g.*, Cruces, Perez-Truglia and Tetaz (2013), Hoy and Mager (2021), or Fehr, Mollerstrom and Perez-Truglia (2022). While the relatively poor overestimate their position in the income distribution, the relatively rich underestimate it, for details see Section II.E.

Moreover, Table 1 reports summary statistics on health characteristics that can exacerbate the problem of air pollution exposure. About 37% of respondents report having been diagnosed with allergies, high blood pressure, lung disease, or diabetes in the last five years. Furthermore, 19% of all respondents report to smoke, and 17% exercise only once a month or less.

Beyond reporting average sample characteristics, Table 1 groups respondents according to their self-reported political leaning as defined in Table 2. Almost 57% of the sample support the governing populist right-wing while about 20% prefer a party in the center-left opposition. The distribution of political preferences in our sample is a good approximation for the distribution of representatives in the Indian parliament ("Lokh Saba", the House of the People) in which the right-wing governmental coalition holds 60% of all seats. We document no differences between the right-wing and the center-left with respect to observable characteristics, dismissing concerns that any observed treatment heterogeneity by political leaning would, in fact, be driven by these characteristics instead, see column 5.

D. Econometric Specification

We use the following specification to estimate the average effect of the income information treatment:

$$y_i = \beta_1 IIT_i + X_i'\Gamma + \eta_s + \epsilon_i, \tag{11}$$

where y_i is the respective dependent variable in our set of outcomes for respondent i and IIT_i is the income information treatment. η_s are state fixed effects and X_i is a vector of observable characteristics, namely an indicator for rural residence and the respondent's

official income decile. ϵ_i is the error term clustered at the state level.[18] We study β_1 as the aggregate treatment effect.

Table 2 – Variable definitions.

Panel A: Outcome variables	
Perceived rel. income	Based on the question: "Assume the entire population living in your state is divided into 10 income groups, each with the same number of households (...) ordered from the 10% with the lowest income to the 10% with the highest income. In your opinion, which income group is your household part of?"
Ext./int. margin	Indicator variable for respondents that make a positive contribution to an environmental NGO (extensive margin). Continuous variable for the share of the endowment contributed (intensive margin).
Public policy support	Indicator variable for relatively high and relatively low support for public policies that provide the public good. Based on the aggregate support (Strongly oppose; Somewhat oppose; Undecided; Somewhat support; Strongly support) for four policies: a ban on waste burning, an increase in fuel taxes, an increase in vehicle registration taxes, and the introduction of no-drive days. The threshold for the binary distinction is the control group average.
Redistribution support	Indicator variable for relatively high and relatively low preferences for redistribution. Based on the aggregate agreement (Strongly disagree; Disagree; Neutral; Agree; Strongly agree) with the following four statements: (1) "The gap between the rich and the poor in India is too large."; (2) "It is the responsibility of the government to reduce the income gap between the rich and the poor."; (3) "The government should make sure that everyone has equal access to protection measures against air pollution, no matter what their income is."; (4) "The government should make sure that those with a higher income contribute more to reducing air pollution than those with a lower income." The threshold for the binary distinction is the control group average.
Defensive measures	Indicator variable for relatively high and relatively low adoption of private defensive measures against air pollution. Based on the aggregate intention to adopt (Not likely at all; Rather unlikely; Undecided; Rather likely; Very likely) the following four measures: (1) the use of indoor air purifiers; (2) preventive medical checks; (3) the frequent ventilation of indoor areas; (4) a change in commuting route or schedule to avoid pollution peaks. The threshold for the binary distinction is the control group average.
Perceived health	Based on the question: "In your opinion, how much do you think your personal health is impacted by air pollution? Not at all; Only a little; Moderately; Quite a lot; Very much".
Panel B: Additional constructed variables	
Pos./neg. misperception	Indicator variable for respondents with a positive misperception (the perceived income decile is higher than the official income decile) and all others. For simplicity, we refer to those with a negative misperception and those with a correct perception as having a negative misperception.
Political leaning	Categorical variable based on the question: "If an election was held today, which political party would you vote for?" Response options were the eight nationally recognized parties in India. Respondents who support either the Bharatiya Janata Party (BJP) or the National People's Party (NPP) were classified as "right-wing". Respondents who support any of the six oppositional parties endorsing center, center-left, or left politics were classified as "Center-left". "Undisclosed" refers to respondents that either support a party that is not nationally recognized, would abstain from voting, or preferred to not disclose their choice.

The income information treatment combines two distinct cases. First, respondents that overestimate their relative income, *i.e.*, have a positive misperception in prior beliefs, are informed that they are relatively poorer than initially thought. Second, for those that underestimate their relative income, *i.e.*, they have a negative misperception in prior beliefs, the treatment informs them that they are relatively richer. To study these

[18] We follow the recommendation in Abadie et al. (2023) and cluster standard errors at the state level to account for the fact that the income treatment provided feedback on the respondent's rank in the state-specific income distribution. Appendix Table A-11 shows the robustness of our results to controlling for a rich set of pre-treatment respondent characteristics.

two cases, we estimate the following specification that distinguishes respondents by the direction of their misperception (*Neg.misp.*$_i$, see Table 2 for a definition):

$$y_i = \beta_1 IIT_i + \beta_2 \text{Neg.misp.}_i + \beta_3 IIT_i \times \text{Neg.misp.}_i + X_i'\Gamma + \eta_s + \epsilon_i. \tag{12}$$

We study β_1 and β_3 and compute heterogeneous marginal treatment effects by respondents' prior misperception.

Furthermore, we distinguish between right-wing and center-left respondents (see Table 2 for a definition of political leaning) to study how perceived relative income interacts with political affiliation:

$$y_i = \beta_1 IIT_i + \beta_2 \text{Leaning}_i + \beta_3 IIT_i \times \text{Leaning}_i + X_i'\Gamma + \eta_s + \epsilon_i. \tag{13}$$

Once more, our focus is on the coefficients β_1 and β_3 that enable us to compute marginal heterogeneous treatment effects with respect to respondents' political leaning. While we include the subsample of respondents with undisclosed political preferences in all analyses, we will refrain from reporting their coefficients in the main text. Interested readers are referred to Appendix D.

With a triple interaction, we combine the analysis on heterogeneous treatment effects by political leaning with the distinction between the direction of misperception in prior relative income beliefs:

$$\begin{aligned} y_i = &\beta_1 IIT_i + \beta_2 \text{Leaning}_i + \beta_3 \text{Neg. misp.}_i + \beta_4 IIT_i \times \text{Leaning}_i + \beta_5 IIT_i \times \text{Neg.misp.}_i + \\ &\beta_6 \text{Leaning}_i \times \text{Neg.misp.}_i + \beta_7 IIT_i \times \text{Leaning}_i \times \text{Neg.misp.}_i + X_i'\Gamma + \eta_s + \epsilon_i. \end{aligned} \tag{14}$$

In Section II.E, we present results of the regression analyses specified in Equations (11) to (14) for all of our outcome variables defined in Panel A of Table 2.[19] In Appendix Table A-11 we show robustness to including a rich set of pre-treatment individual characteristics and in Appendix G, we adjust for multiple hypothesis testing.

[19] We transform the support for public policies, the support for redistribution, and the intended use of private protection measures into binary measures indicating relatively high and relatively low support or utilization. The transformation has two advantages. First, it eases the interpretation of our analyses. Second, it brings out meaningful variation for measures that tend to be over-reported in our sample, *i.e.*, their distributions resemble a truncated normal distribution, see Appendix C.

E. Results

E.1 Perceived Relative Income

First, we examine whether providing respondents with information about their household's relative income according to official statistics leads to an updating of relative income perceptions. Figure 2 is a binned scatter plot of average prior (pre-treatment, Panel A) and posterior misperceptions (post-treatment, Panel B) in the control and the IIT groups, by the official income decile. A positive (negative) value on the vertical axis denotes a positive (negative) average misperception, *i.e.*, the average respondent in the respective decile of the income distribution perceives to be richer (poorer) than what is implied by the official data for the respective state of residence.

A comparison between Panel A and B in Figure 2 illustrates that the income information treatment successfully reduces relative income misperceptions. While prior misperceptions are comparable across the control and treatment groups, we find that the treatment induces partial updating in the intended direction, as suggested by a flatter but still negative slope of the linear fit for posterior misperceptions in the IIT group.[20] As expected, the prior perception in the IIT group at an average of 6.15 does not differ significantly from the baseline perception in the control group at an average of 5.97 ($p = .105$ in a two-sided t-test, combined $N = 1,254$). More importantly, there is no difference in prior misperceptions with an average of -1.89 deciles in both the control and the IIT group ($p = .999$ in a two-sided t-test, combined $N = 1,254$).[21]

We estimate treatment effects for the IIT group on posterior relative income perceptions according to Equations (11) to (14). Results are presented in Table 3, column 1. We find that the income information treatment significantly affects relative income perceptions. Across all respondents in the IIT group, the posterior perception is, on average, about 1.2 deciles higher than the perception in the control group, see Panel A. The estimate suggests that the partial updating of relative income perceptions accounts for 62% of the pre-treatment average (negative) misperception.

Panel B displays the estimated marginal treatment effects from the interaction of the

[20] The elicitation of both prior and posterior perceptions is done by asking respondents the very same question twice (with the information provision in-between). The interpretation of posterior perception warrants some caution, as several processes might be at work. On the one hand, one can argue that the provision of information between prior and posterior might induce an experimenter demand effect that would bias the posterior towards a correct perception. On the other hand, Cruces, Perez-Truglia and Tetaz (2013) suggest that a full update of perceptions is likely to fail if respondents (a) have strong priors, or (b) do not trust the source of information.

[21] In our sample, the average respondent is relatively rich and, consistent with a median bias, prior misperceptions are therefore predominantly negative.

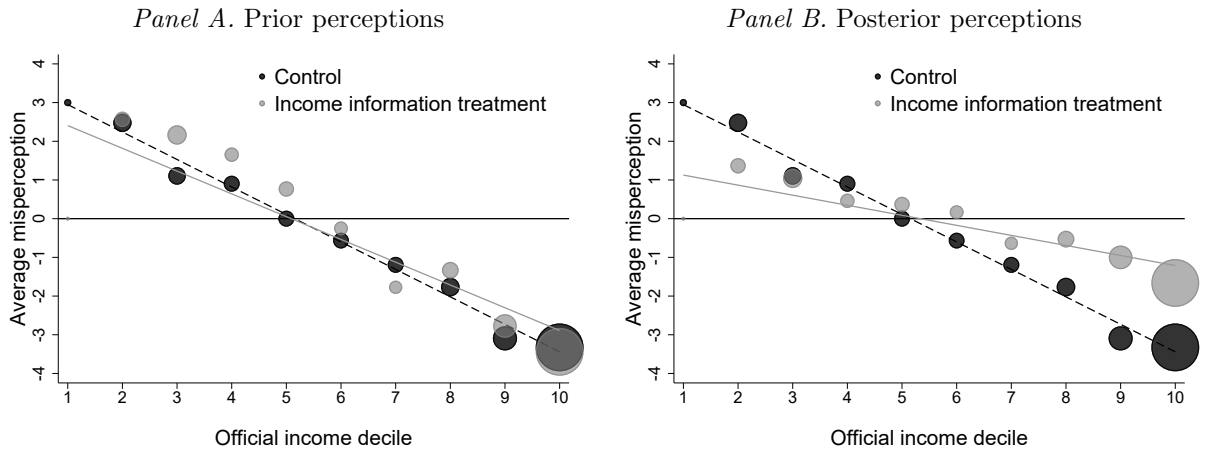

FIGURE 2 – AVERAGE RELATIVE INCOME MISPERCEPTIONS BY OFFICIAL INCOME DECILE.

Notes: The figure plots the average relative income misperception in each official income decile for the control group (in black) and the IIT group (in gray). The two panels plot misperceptions in the control group and compare them to the prior (pre-treatment) misperceptions (Panel A) and the posterior misperceptions (Panel B) in the IIT group. The size of the markers is relative to the sample size in the respective income decile. For both groups, we include linear fits.

treatment indicator with the sign of the prior misperception as specified in Equation (12). The analysis confirms that the treatment works as intended. The income information induces a significant upwards update in the perceived relative income of about 1.7 deciles ($p < 0.001$) for respondents with a negative misperception. For those with a positive misperception, the posterior is adjusted downwards by about 1.4 deciles ($p < 0.001$).

Next, we test whether the treatment affects perceived relative income in the intended direction across the political spectrum. The exercise aims to validate that the treatment is similarly effective for both the right and the center-left. Column 1 in Panel C of Table 3 presents the estimated marginal treatment effects of the interaction between the treatment and political leaning. We find that for right-wing and center-left respondents the treatment induces an average upwards adjustment in relative perceptions by about 1 decile (each with $p < 0.001$). Finally, Panel D presents estimated marginal effects for the triple interaction between treatment, sign of prior misperception, and political leaning in line with Equation (14). Again, perceptions move in the intended direction and by a similar magnitude for both the right-wing and the center-left (see the Wald tests for equality of marginal effects in column 1).

E.2 Revealed and Stated Preferences for Air Quality

After verifying that the treatment induces a change in perceived relative income, we turn our attention to treatment effects on respondents' preferences for the public good and

TABLE 3 – INCOME INFORMATION TREATMENT EFFECTS.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Average treatment effects							
IIT	1.168***	-0.046*	-0.012	-0.015	-0.038	-0.047**	-0.135***
	(0.080)	(0.025)	(0.024)	(0.027)	(0.031)	(0.020)	(0.038)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Control mean	5.970	0.770	0.330	0.590	0.560	0.590	3.990
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception							
IIT x Pos.misp.	-1.438***	-0.077	-0.002	-0.067	0.065	0.023	-0.124
	(0.263)	(0.055)	(0.044)	(0.044)	(0.066)	(0.073)	(0.140)
IIT x Neg.misp.	1.656***	-0.042	-0.017	-0.004	-0.064*	-0.064**	-0.148***
	(0.099)	(0.026)	(0.023)	(0.034)	(0.038)	(0.030)	(0.040)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning							
IIT x Right	0.956***	-0.090***	-0.013	-0.060	-0.078***	-0.059**	-0.135***
	(0.129)	(0.032)	(0.016)	(0.043)	(0.028)	(0.025)	(0.052)
IIT x Center-left	1.014***	-0.001	0.002	-0.003	0.033	-0.021	-0.138
	(0.256)	(0.059)	(0.059)	(0.050)	(0.065)	(0.068)	(0.125)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Wald test p-value	0.843	0.146	0.782	0.431	0.069	0.642	0.981
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: Marginal treatment effects of interaction with sign of prior misperception and political leaning							
IIT x Pos.misp. x Right	-1.606***	-0.034	0.116***	-0.080	0.022	0.054	-0.098
	(0.450)	(0.064)	(0.044)	(0.087)	(0.092)	(0.083)	(0.169)
IIT x Pos.misp. x Center-left	-1.231***	-0.150	-0.096	-0.010	0.076	0.063	0.034
	(0.473)	(0.115)	(0.083)	(0.128)	(0.121)	(0.141)	(0.271)
IIT x Neg.misp. x Right	1.489***	-0.106***	-0.046**	-0.055	-0.105***	-0.087***	-0.151***
	(0.137)	(0.036)	(0.021)	(0.047)	(0.038)	(0.023)	(0.051)
IIT x Neg.misp. x Center-left	1.598***	0.041	0.029	-0.001	0.021	-0.045	-0.190
	(0.211)	(0.062)	(0.060)	(0.068)	(0.074)	(0.103)	(0.137)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Wald test p-value Pos.misp.	0.650	0.418	0.030	0.691	0.702	0.941	0.585
Wald test p-value Neg.misp.	0.633	0.028	0.202	0.527	0.112	0.710	0.812
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A), Equation (12) (Panel B), Equation (13) (Panel C), and Equation (14) (Panel D). Panel B, C, and D report marginal treatment effects. Within each panel, each column corresponds to a separate OLS regression. All models include state fixed effects and control for rural location and official income decile. Although included in all models, we omit to report the coefficients for the "undisclosed" category with respect to political leaning. Standard errors (in parentheses) are clustered at the state level. In Panels C and D, we additionally report p-values for Wald tests that test for equality between the marginal effects of the right-wing and the center-left. See Table 2 for variable definitions. Appendix Table A-11 and Table A-18 show the robustness of results to the inclusion of a rich set of individual controls and the correction for multiple hypothesis testing, respectively. In the Appendix tables, we report also the estimated coefficients for the "undisclosed" political leaning category. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

discuss how the empirical findings align with the theoretical predictions of Section I. For each outcome variable, we estimate Equations (11) to (14).

Revealed preferences for the public good – We begin by studying voluntary contributions to an environmental NGO as our measure of revealed preferences for the public good. In the control group, 77% of all respondents make a positive contribution. Including the 23% of respondents that do not contribute, the average contribution is just under 40 INR or about 33% of the endowment.[22] At one third of the endowment, the intensive margin is in line with the related literature on voluntary contributions, see Engel (2011).

We present the average effect of the IIT treatment on the extensive and intensive margin of contributions in Table 3 (Panel A, columns 2 and 3). Results indicate a marginally significant negative treatment effect on the extensive margin of contributions. When respondents are informed about their place in the income distribution according to official data, the share of contributors is reduced by almost 5 percentage points ($p = 0.074$). The average intensive margin is not affected by the treatment. In Panel B, we distinguish between a positive and a negative prior misperception in relative income. While coefficient sizes are in line with the aggregate effect (or even larger in case of positive misperceptions), we do not have sufficient power to detect significance at the 10% level.

When distinguishing respondents by their political leaning, we find striking heterogeneity (Panel C). The treatment leads to the withdrawal of contributions in the extensive margin for right-wing voters by 9 percentage points ($p = 0.006$). In contrast, contributions appear unaffected by the treatment for center-left respondents. Panel D reports the marginal treatment effects for the triple interaction with the direction of prior misperceptions and political leaning. For right-wing respondents, the share of contributors decreases by 10.6 percentage points ($p = 0.003$) when they are informed to be relatively richer than they originally thought. On the intensive margin, the share of the bonus contributed decreases by 4.6 percentage points in the same group ($p = 0.029$). When informed to be relatively poorer than initially believed, right-wing respondents increase the intensive margin of contributions by almost 12 percentage points ($p = 0.009$).

Treatment effects on contributions by center-left voters appear to follow a different pattern. On both the extensive and intensive margins, the effect is positive for respondents with a negative misperception and negative for those with a positive misperception. However, these coefficients are not significantly different from zero. Nonetheless, we test for equality of marginal effects between the right-wing and the center-left to study

[22] The largest share of respondents (about 32%) contributed to the Indian Pollution Control Association, followed by WWF India (22%), Chintan (13%), and the Lung Care Foundation (11%).

whether the treatment has significantly different effects across the political spectrum, see the Wald test results reported in Panels C and D of Table 3. Among those with a negative prior misperception, treatment effects on the extensive margin of contribution between right-wing and center-left are significantly different ($p = 0.028$).

Accounting for political leaning puts the treatment effect in the aggregate sample into perspective. Overall, we find that the IIT treatment leads to an aggregate reduction in the likelihood to contribute. The effect is mainly driven by right-wing respondents who are informed to be relatively richer than initially thought. For them, an increase in perceived relative income leads to the withdrawal of contributions. In contrast, for center-left respondents, a withdrawal of contributions does not occur. The heterogeneous treatment effects suggest that different mechanisms are at work. We return to the discussion below.

Stated preferences for public policies that provide the public good – Next, we investigate treatment effects on the support for state-level public policies that target a reduction in air pollution. Here, we analyze the share of respondents with relatively high preferences for public policy support, as described in Table 2. In the control group, about 60% of the respondents have relatively high preferences for public policies addressing air pollution. Column 4 of Table 3 presents the estimated treatment effects in line with Equations (11) to (14). The sign of the coefficients are generally aligned with those on the revealed preference measure (particularly in the extensive margin, see above) but are not statistically significant. We find no treatment effect in the aggregate sample (panel A), nor when interacting the treatment with respondents' prior misperceptions, with political leaning, or in the triple interaction model see Panels B, C, and D. For treatment effects on each of the four component policies included in the aggregate measure, see Appendix Table A-7.

Stated preferences for redistribution – Next, we investigate treatment effects on respondents' stated support for redistribution. The outcome measure is a binary variable aggregating respondents' view on the severity of income inequality in India and the role of the government in reducing inequality and ensuring environmental justice (see Table 2 for the variable definition). Column 5 of Table 3 presents estimated treatment effects on the stated support for redistribution. While support for redistribution is unaffected in the average (Panel A), we find heterogeneous treatment effects by political leaning (Panel C). For right-wing voters, the income information treatment significantly reduces the share of respondents with relatively high preferences for redistribution by about 8 percentage points ($p = 0.005$). The triple interaction suggests that the decrease is mostly attributable to respondents with a negative prior misperception, *i.e.*, those informed to

be relatively richer. In contrast, the treatment effect on the share of center-left respondents with relatively high preferences for redistribution is not significant ($p = 0.609$). For treatment effect estimates on the individual index components, see Appendix Table A-8.

Stated preferences for the adoption of private protection measures – Lastly, we focus on stated preferences for the adoption of private measures as protection against air pollution. We rely on a binary measure that distinguishes between respondents with relatively high and relatively low preferences for private protection (see Table 2 for the definition). Table 3 presents the estimated treatment effects, see column 6. In the aggregate sample, the treatment leads to a reduction in the intended use of protection measures. The share of respondents with relatively high preferences for adoption is reduced by 4.7 percentage points ($p = 0.030$, see Panel A). For treatment effect estimates on the individual index components, see Appendix Table A-9.

We find that the overall negative treatment effect is predominantly driven by respondents with a negative prior misperception, see Panel B. Among them, the share of respondents with relatively high preferences for the adoption of protection measures decreases by 6.4 percentage points ($p = 0.032$). Turning to the interaction with political leaning (Panel C), preferences appear unaffected for the center-left but we find that for right-wing respondents, the treatment leads to a reduction by almost 6 percentage points ($p = 0.021$) in the share of relatively high adopters. Finally, Panel D displays the estimated coefficients for the triple interaction. We find significant treatment effects for right-wing respondents that have a negative prior misperception, with the share of high preference adopters falling by 8.7 percentage points ($p < 0.001$). The average effect is negative also for the center-left, but not statistically different from zero.

E.3 Perceived Health Impacts

We explore whether a change in perceived relative income affects respondents' perceived impacts of air pollution on personal health. We interpret this outcome as a measure of the perceived MPCR from improvements in air quality, *i.e.*, the δ_i parameter in the theoretical framework of Section I. We find that respondents in our sample are generally concerned about the effect of air pollution on their own health. In the control group, the average respondent believes their health to be impacted "quite a lot" (a value of 4 on a 5-point Likert scale).

Column 7 in Table 3 displays the estimated treatment effects on respondents' belief about the effects of air pollution on their own health. Panel A shows that the income

information significantly reduces perceived health impacts ($p = 0.001$). Given that the treatment induces an average upwards shift in perceived relative income (column 1), the result is in line with the apriori expected negative relationship between perceived relative income and health impacts. It is also consistent with the reduction in the extensive margin of contributions, see column 2. Moreover, it provides a plausible explanation for why respondents in the treatment group report a lower intention to adopt or continue using protection measures against pollution as documented in column 6.

Panel B displays the estimated marginal treatment effects in an interaction with the sign of the prior misperception in perceived relative income. We find a negative treatment effect for respondents with a negative misperception ($p < 0.001$), again showing that an increase in perceived relative income reduces perceived health impacts. With a positive misperception, the treatment effect is also negative but insignificant ($p = 0.374$).

Panel C presents the marginal effects of the interaction between IIT and political leaning. We find suggestive evidence that the reduction in health concerns induced by the treatment is observable across the political spectrum. Right-wing respondents report on average a 0.135 unit reduction in perceived health impacts ($p = 0.009$). For center-left respondents, the effect has a similar magnitude but is not significant (0.138 reduction, $p = 0.268$). Yet, a Wald test for equality of marginal effects between the right-wing and center-left suggests that treatment effects are comparable across the political spectrum ($p = 0.981$). The significant reduction in health concerns for right-wing voters is aligned with their diminished preference for air quality as reflected by their stated and revealed preferences. Panel D further breaks down the treatment effects by both the sign of the prior misperception and political leaning. The results reinforce the findings of Panels B and C. In particular, for negative misperceptions, we find that the treatment reduces perceived health impacts independent of respondents' political leaning. While we only have enough power to find a significant marginal treatment effect for the right-wing ($p = 0.003$) but not for the center-left ($p = 0.164$), a Wald test indicates that the size of the treatment effect is not different between the two ($p = 0.812$).

E.4 Linking the Empirical Results to Our Theoretical Predictions

From the analysis of the first survey experiment, two main results transpire. We shortly discuss how they relate to our theoretical predictions in Section I.

First, we find that an increase in perceived relative income leads to the withdrawal of contributions for right-wing respondents. When they are informed to be relatively richer than previously thought, positive contributions are 10.6 percentage points less likely.

The reduction in contributions is accompanied by (i) less support for redistribution, (ii) a decrease in the intention to use private protection measures against air pollution exposure, and (iii) a reduction in the perceived health impacts of air pollution. These preferences are in line with Prediction 1. Overall, results are consistent with a scenario in which the increase in perceived relative income is used in a simple heuristic to re-assess personal benefits from the public good, *i.e.*, respondents believe to be less impacted and intend to use less private protection. With lower marginal benefits, the marginal willingness to pay for the public good decreases and contributions are withdrawn.

Second, we find that a change in perceived relative income does not translate to differences in contributions for center-left respondents. The result is noteworthy because center-left respondents perceive a decrease in the marginal benefit from the public good that is comparable to the one observed for the right-wing. Yet, they do not withdraw contributions indicating that their willingness to pay does not change. In Prediction 2, we propose inequality aversion as a channel that can mitigate the negative effects of a reduced MPCR when perceived relative income increases. Such preferences are ideologically embedded in the political left much more so than in the political right (Feldman, 2003; Claessens et al., 2020; Guriev and Papaioannou, 2022). Although we are not able to make causal claims, results are consistent with higher inequality aversion for the center-left. We view this as a plausible explanation for the differences between center-left and right-wing with respect to revealed preferences.

We nonetheless test for potential alternative mechanisms. In particular, rather than through inequality aversion and through a change in perceived health impacts, one may be worried that the information treatment affects outcomes through a change in altruistic preferences (*i.e.*, changes in the sensitivity to income inequality – μ_i in the theoretical framework) or induces a temporary emotional response. By testing for treatment effects on measures of altruism and happiness, we show that this is not the case, see Appendix Table A-10.[23] Additionally, we show that the IIT effect is not dependent on and does not induce learning about actual inequality, see Appendix I. Finally, our skewed sample towards relatively rich and well-educated respondents may raise concerns that the treatment differences between the right-wing and center-left are not due to differences in preferences for equality but rather due to other observable characteristics. Note however

[23] We elicit altruism following Falk et al. (2018). Namely, the question was phrased as "How do you assess your willingness to do good for others without expecting anything in return?" with response options from: 1 – completely unwilling to 10 – very willing. To elicit happiness, respondents were asked "How happy do you feel right now?" with response options 'Not at all happy', 'Not very happy', 'Neutral', 'Rather happy', and 'Very happy'.

that we document no differences between the right-wing and the center-left with respect to as age, education, income, or other factors (see Table 1) ruling out that the observed treatment heterogeneity by political leaning is driven by these characteristics.

III. Exogenously Shifting Perceived Relative Income

A. Design

In our second survey experiment, we exogenously shift perceived relative income. The exogenous shift allows us to test whether the results of the first survey experiment are specific to the reduction of endogenous misperceptions or apply more broadly to variations in perceived relative income. The entry questionnaire in part A, the provision of air pollution information in part B, and the preference elicitation, as well as the exit questionnaire in part D of the second survey experiment, are identical to the control group in the first survey experiment presented in Section II.[24]

We introduced the treatment variation during the perceived relative income elicitation in part C. All respondents were asked to place their own household in a decile of the income distribution for their state of residence. Before placing their own household, respondents in the two treatment groups had to place another specific household. In the rich comparison treatment (RT), we asked respondents to place a household living in the same state that has an annual household income of 10 million INR (ca. USD 130,000). In the poor comparison treatment (PT), we asked respondents to place a household living in the same state that was depicted as very poor. In particular, we described the members of the poor comparison household as (i) having no education, (ii) being unemployed, (iii) not being able to afford enough food and clothing, (iv) living in a non-recognized slum with overcrowded rooms, and (v) having no toilet or access to fresh water.

The design unambiguously suggests that the comparison household should be placed in the respective tail of the income distribution. The placement of the comparison household at the end of the distribution aims to induce an upward (PT) or downward (RT) shift in own perceived relative income compared to the control group. The approach draws on experiments in social psychology that generate variation in the perceived social class by directly asking respondents to compare themselves to households at the very top (or

[24]The second survey experiment was conducted jointly with the first survey experiment. Hence, sampling, randomization, and steps to ensure good data quality are equivalent to the strategy described in Section II.A. For summary statistics when pooling the sample from both survey experiments, see Appendix Table A-4. Additionally, we report summary statistics and balance tests for the second survey experiment in Appendix Table A-6.

bottom) of the social ladder (Kraus, Côté and Keltner, 2010; Piff et al., 2010; Condon and Wichowsky, 2020).[25]

The description of the two comparison households intends to be as parsimonious as possible. With a long and thin right tale of the income distribution, the annual income of the rich comparison household sends a clear signal that it should be placed at the upper end of the distribution. In contrast, on the left-hand side of the distribution, more than 20% of Indian households have no formal income. Thus, using a positive income figure, even if very small, would not necessarily be successful in pointing respondents to the very bottom of the distribution. Instead, we use a qualitative description of the poor household that addresses several dimensions of poverty such as education, employment, and access to sanitation. Additionally, the asymmetric treatment design recognizes that respondents tend to be more responsive to disadvantageous inequality, *i.e.*, when others are richer, than to advantageous inequality, *i.e.*, when others are poorer (Loewenstein, Thompson and Bazerman, 1989; Day and Fiske, 2019). Carlsson, Gupta and Johansson-Stenman (2009) additionally show that the Indian caste system amplifies the sensitivity to disadvantageous inequality.

B. Results

We focus on two main analyses: First, we test whether the comparison treatments are successful in shifting perceived relative income. Second, we test whether we find support for the main results from the first survey experiment. Namely, while both right-wing and center-left respondents perceive a reduction in marginal benefits from the public good when perceived relative income increases, only right-wing voters withdraw their contributions.

B.1 Perceived Relative Income

We find strong evidence that both comparison treatments are successful in inducing a change in perceived relative income. At baseline, the average relative income perception is 5.97.[26] In contrast, the average perception is 6.81 in the PT and 5.27 in the RT group. Both treatment effects are sizeable and significant with $p < 0.001$ in a two-sided t-test with a combined $N = 1,243$ and $N = 1,272$, respectively. Figure 3 displays a

[25]For a detailed discussion on the mechanism of the comparison treatments in our survey experiment, we refer to Appendix J. Also, note that respondents in the PT and RT groups were informed of their actual position in the income distribution at the end of the survey experiment.

[26]We can pool respondents in the control group and the income information group IIT in the first survey experiment to form the baseline with unaffected prior relative income perceptions.

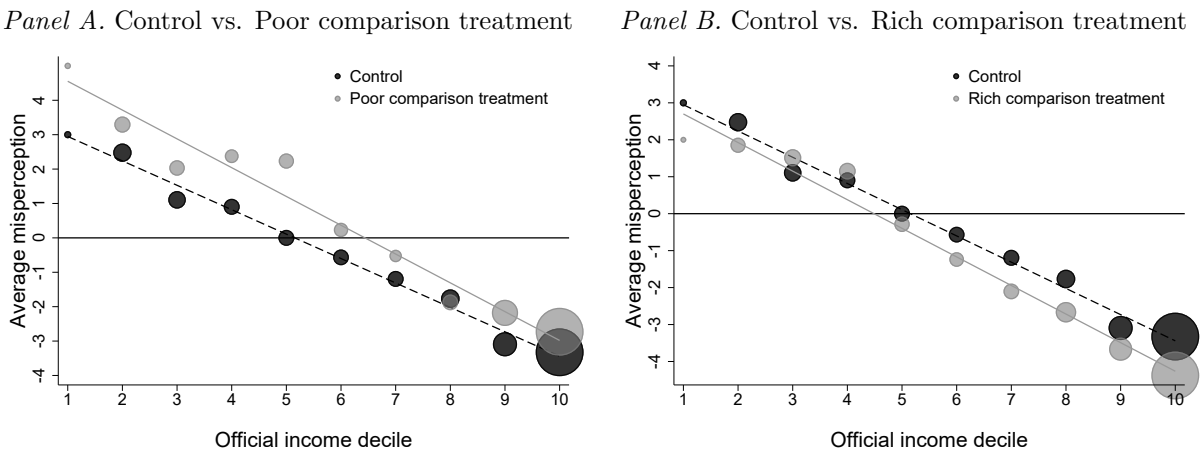

FIGURE 3 – AVERAGE RELATIVE INCOME MISPERCEPTIONS BY OFFICIAL INCOME DECILE IN CONTROL AND COMPARISON TREATMENTS.

Notes: The figure plots the average relative income misperception in each official income decile for the control group (in black) and the respective comparison treatment group (in gray). The two panels contrast the perceptions in the control group to the perceptions in the poor comparison treatment (Panel A) or the rich comparison treatment (Panel B). The size of the markers is relative to the sample size in the respective income decile. For all groups, we include linear fits.

binned scatter plot and a linear fit of average relative income misperceptions by reported income decile for the control and treatment groups (panel A compares control and PT, panel B compares control and RT). For both the PT and RT group, we observe that perceptions are shifted in the intended direction across the distribution. That is, at the same reported income levels, respondents in the PT (RT) group perceive themselves to be relatively richer (poorer) than respondents in the control group.

In the following analysis, we study the average treatment effects in the PT and RT group as well as the marginal treatment effect for the interaction with respect to political leaning. That is, in Table 4 we show regressions following Equations (11) (Panel A) and (13) (Panel B) with treatment indicators for PT_i and RT_i instead of IIT_i.

Column 1 in Table 4 displays treatment effects on the perceived income decile for the PT and RT group, conditional on state fixed effects, the official income decile, and an indicator for rural residence. On average, both treatments induce a change in perceived relative income in the intended direction that are of a similar magnitude (0.79 deciles for PT and -0.72 deciles for RT, both with $p < 0.001$), see Panel A. Thus, the asymmetric design of our comparison treatments appears successful in inducing equally sized treatment effects. In comparison with the IIT treatment in the first survey experiment, the PT and

Table 4 – Comparison groups treatment effects.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Average treatment effects							
PT	0.792***	-0.017	0.011	-0.002	0.008	-0.013	-0.140**
	(0.081)	(0.021)	(0.022)	(0.029)	(0.025)	(0.029)	(0.054)
RT	-0.722***	-0.022	-0.003	-0.020	0.009	-0.063***	-0.212***
	(0.085)	(0.018)	(0.025)	(0.030)	(0.025)	(0.022)	(0.050)
Observations	1,852	1,852	1,852	1,852	1,852	1,852	1,852
Control mean	5.970	0.770	0.330	0.590	0.560	0.590	3.990
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Marginal effects in interaction with political leaning							
PT x Right	0.807***	-0.056*	0.001	0.002	-0.011	-0.050	-0.210***
	(0.112)	(0.030)	(0.024)	(0.054)	(0.029)	(0.031)	(0.060)
PT x Center-left	0.141	-0.023	0.009	-0.044	0.028	0.033	-0.170
	(0.273)	(0.049)	(0.060)	(0.054)	(0.063)	(0.046)	(0.138)
RT x Right	-0.471***	-0.055**	-0.014	-0.021	-0.014	-0.107***	-0.256***
	(0.146)	(0.026)	(0.026)	(0.044)	(0.028)	(0.034)	(0.072)
RT x Center-left	-1.345***	0.011	0.007	-0.034	0.128**	0.066	-0.127
	(0.380)	(0.041)	(0.061)	(0.067)	(0.058)	(0.072)	(0.129)
Observations	1,852	1,852	1,852	1,852	1,852	1,852	1,852
Control mean right	6.040	0.810	0.340	0.650	0.570	0.640	4.080
Control mean center-left	6.400	0.770	0.330	0.560	0.560	0.540	4.020
Wald test p-value PT	0.031	0.603	0.907	0.554	0.609	0.128	0.777
Wald test p-value RT	0.066	0.281	0.733	0.867	0.037	0.063	0.468
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A) and Equation (13) (Panel B), with random treatment assignment to the poor (PT) and rich (RT) comparison groups. Within each panel, each column corresponds to a separate OLS regression. All models include state fixed effects and control for rural location and official income decile. Although included in all models, we omit to report the coefficients for the "undisclosed" category with respect to political leaning. Standard errors (in parentheses) are clustered at the state level. In Panels C and D, we additionally report p-values for Wald tests that test for equality between the marginal effects of the right-wing and the center-left. See Table 2 for variable definitions. Appendix Table A-16 and Table A-19 show the robustness of results to the inclusion of a rich set of individual controls and the correction for multiple hypothesis testing, respectively. In the Appendix tables, we report also the estimated coefficients for the "undisclosed" political leaning category. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

RT treatments are about half as effective in changing perceived relative income.[27]

Panel B studies heterogeneity by political leaning. For center-left respondents, we find that the poor comparison is ineffective. In contrast, the rich comparison induces a considerably strong downward shift in perceived relative income by more than 1.3 deciles ($p < 0.001$). Results suggest that center-left voters are insensitive to disadvantageous but

[27]Our treatment effects are considerably larger than those reported in the related psychological literature that studies misperceptions via a social ladder. In particular, Condon and Wichowsky (2020) find a 0.2 decile change for both a poor and a rich treatment condition while Kraus, Côté and Keltner (2010) and Piff et al. (2010) run studies without a control condition and find a treatment effect of 0.8 deciles when comparing respondents that are exposed to a poor comparison with respondents exposed to a rich comparison (such a comparison would yield a treatment difference of 1.5 deciles in our estimation).

all the more sensitive to advantageous inequality. For right-wing voters, both treatments are effective in shifting perceived relative income with the poor comparison inducing a larger shift (+0.8 deciles with $p < 0.001$) than the rich comparison (-0.5 deciles with $p = 0.001$).

B.2 Revealed and Stated Preferences for Air Quality

We find strong support for the results of our first survey experiment when studying our main set of outcomes in the PT and RT groups, see Table 4 for average treatment effects (Panel A) and interaction with political leaning (Panel B).[28] In the extensive margin of contributions, we find a marginally significant decrease by 5.6 percentage points for right-wing voters in the PT group ($p = 0.059$), see column 2. The effect is in line with our finding in the first survey experiment where right-wing respondents that receive information to adjust their relative income perception upwards were 10.6 percentage points less likely to contribute. Since the PT treatment leads to a smaller increase in perceived relative income than what is observed in IIT, a smaller effect size is expected. For center-left voters, we find no reduction in the likelihood to contribute in the PT treatment. Again, the finding aligns with our first survey experiment.

Just like in the IIT group, the increase in perceived relative income in the PT group induces a reduction in the perceived personal health impact of air pollution, see column 7 in Table 4. The result shows that the reduction of perceived marginal benefits from the public good also occurs when the change in perceived relative income is independent of prior misperceptions.[29] In the interaction with political leaning, the marginal treatment effect is precisely estimated only for the right-wing ($p < 0.001$). So similar to the first survey experiment, the behavior of right-wing respondents is in line with Prediction 1: when perceived relative income increases, perceived health impacts decrease and contributions are withdrawn. The negative effect on preferences for redistribution and on the intended use of protection measures for the right-wing when perceived relative income

[28] For several robustness analyses on the treatment effects in the PT and RT groups akin to those presented for the first survey experiment, see Appendix E. For a joint estimation of the first and second survey experiment, see Appendix Table A-17.

[29] To compare the magnitude of effects in both survey experiments, we run an instrumental variable analysis where we study the relationship between perceived relative income and perceived health impacts, see Appendix Table A-20 and Table A-21. On the one hand, we use the random assignment to IIT of respondents with a negative prior misperception as an instrument for perceived relative income. We find that an increase of one decile in perceived relative income reduces the perceived health impact by 0.088 units ($p = 0.002$). On the other hand, we use the random assignment to PT as an instrument for perceived relative income and estimate a 0.187 unit decrease ($p = 0.025$) in perceived health impacts at an increase of one decile in perceived relative income.

adjusts upwards in IIT is not replicated by our poor comparison treatment.[30]

Our results on the RT group offer additional insights. As perceived relative income is shifted downwards, we find a significant decrease in the extensive margin by 5.5 percentage points for the right-wing ($p = 0.033$). The effect contrasts with the first survey experiment in which right-wing supporters informed to adjust their perceptions downwards show no response in their revealed preferences.[31] The withdrawal of contributions is accompanied by a considerable reduction in the share of relatively high intended adoption of protection measures (10.7 percentage points, $p = 0.001$) as well as a marked reduction in perceived health impacts (0.26 unit reduction, $p < 0.001$). The result is unexpected and not explained by our theory in Section I. It may indicate the formation of self-serving beliefs, whereby respondents form overly optimistic beliefs about their health to compensate for a decrease in utility induced by a lower perceived relative income. In Appendix A.2, we rationalize these results through a modification of the theoretical framework to account for the emotional impact of updating beliefs about one's perceived relative income on utility.

Among center-left voters, the rich comparison treatment has no effect on the likelihood to contribute, which is again in line with the results in the IIT group of our first survey experiment. Interestingly, we find that in the center-left, the share of respondents with relatively high preferences for redistribution increases by about 13 percentage points in the RT group ($p = 0.027$), see Panel B in column 5 of Table 4.[32]

IV. Conclusion

To better understand the formation of preferences for the provision of redistributive public goods, one needs to consider the shape of the income distribution and the individual's position within it. We focus on relative income perceptions and propose as well as test an explanation for why an increase in perceived relative income can reduce preferences for the provision of a public good. We develop a theoretical framework of voluntary public good provision, both under standard preferences and inequality aversion, in which individuals have incomplete information about their relative income and their personal marginal per capita return of the public good. The model predicts that when individuals

[30] Appendix Tables A-13 and A-14 show that the PT moves some of the index components significantly in the same direction as the IIT, but the effect is not significant in the aggregate index.

[31] If anything, right-wing respondents with a positive misperception increase their contributions on the intensive margin in the IIT treatment.

[32] Also in the second survey experiment, we document no treatment effects on measures of altruism or happiness, allowing us to exclude these two potential mechanisms, see Appendix Table A-15.

are not sufficiently inequality averse, voluntary contributions decrease as perceived relative income increases.

Empirical results from two randomized survey experiments with a sample from India on the issue of air pollution support our theory. We find a decrease in revealed preferences for air quality improvements among right-wing voters when they are treated to feel relatively richer. The effect is robust to whether the increase in perceived relative income is endogenous (induced through the provision of income information) or exogenous (induced through a household comparison treatment) with respect to prior misperceptions. The effect is accompanied by a reduced perceived health impact of air pollution and coincides with a decrease in the intended adoption of private protection measures against exposure. Results for the right-wing thereby indicate that an increase in perceived relative income can reduce perceived marginal benefits from the public good and ultimately decrease revealed preferences. We exclude alternative channels including changes in preferences for governmental policies (*e.g.*, dedicated taxes to reduce air pollution), altruism, and an emotional response. These results are particularly relevant as the right-wing corresponds to more than 50% of our sample and is thereby representative of the national political landscape in India.

We find different result patterns for supporters of the political center-left. In both survey experiments, an increase in perceived relative income for the center-left does not affect revealed preferences for the public good although health concerns appear to be diminished in a similar manner as they are for the right-wing. Findings are consistent with a theory that when perceived relative income increases, other-regarding preferences traditionally embedded in the ideology of the political left, counteract the effect of a reduced private marginal benefit of the public good. We thereby add to the literature on the importance of political leaning as a determinant for the formation of redistributive preferences in light of income inequality and its associated misperceptions (see *e.g.*, Kuziemko et al., 2015; Karadja, Mollerstrom and Seim, 2017; Fehr, Mollerstrom and Perez-Truglia, 2022).

We show that relative income perceptions affect public good provision via a change in perceived marginal benefits. Our findings are particularly relevant for environmental public goods where benefits differ by socio-economic status, naturally raising questions of environmental justice and the distributional effects of public good provision (Banzhaf, Ma and Timmins, 2019; Hauser et al., 2019). With a broader interpretation, our findings may also be informative for other public goods – *e.g.*, improvements in public service provision through hospitals, schools, or transportation – that (are perceived to) facilitate a more equal distribution of resources and services. Results point to a gap in the literature that

aims to understand the effects of inequality on public good provision. With increasing economic inequality, both income levels and perceptions of relative income are expected to change. As their impacts might not be aligned, further research is needed to determine the overall effect of inequality on preferences for redistributive public goods.

We note some limitations of our study that open promising avenues for future research. First, we limit our study to the Indian context. With striking economic inequality and a particularly severe air pollution crisis, India is an ideal setting to study the relationship between perceived relative income and public good provision. But as Feichtmayer and Gründler (2021) and Hoy and Mager (2021) show, there is global heterogeneity in how relative income perceptions inform preferences for equality and redistribution. Global evidence with respect to public good provision would provide a comprehensive understanding of relative income perceptions as driving factors in preference formation. Second, like any online survey experiment in developing countries, we study a sample that is skewed towards younger, richer, and well-educated respondents. Aggregate measures such as overall welfare effects are therefore difficult to estimate and will necessitate future research with a nationally representative sample.

We also find some evidence of a reduction in the perceived health impact of air pollution when respondents are treated to feel relatively *poorer*. Based on our theoretical framework and the rationale discussed above, the effect is unexpected. A potential mechanism is the formation of self-serving beliefs. Respondents may compensate for the loss in utility induced by a treatment that makes them feel relatively poorer with overly optimistic beliefs about the impact of air pollution on their own health. The observed optimism bias echoes with results on asymmetric processing of objective information, whereby negative signals are less likely to lead to updates in beliefs and behavior (Eil and Rao, 2011; Kuzmanovic and Rigoux, 2017). The formation of overly optimistic beliefs that maximize current well-being at the expense of future utility is subject to a growing literature supported by both theoretical (Brunnermeier and Parker, 2005; Schwardmann, 2019) and empirical contributions (Kunda, 1987; Oster, Shoulson and Dorsey, 2013) with applications in domains ranging from financial investments to health. A comprehensive review is offered by Golman, Hagmann and Loewenstein (2017). In the words of Banerjee and Duflo (2011, 60): "There is potentially another reason the poor may hold on to beliefs that might seem indefensible: When there is little else they can do, hope becomes essential."

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Appendix

A. Theoretical Framework: Derivations and Extensions

1. Inequality Aversion

In this section, we detail the derivations of the theoretical model presented in Section I.B of the main text. The utility function of a risk-averse individual i is given by:

$$
\begin{aligned}
U_i(p_i, g_i) &= x_i - \mu_i \frac{1}{N-1} \sum_{f=1}^{\hat{L}_i} (x_i - x_f) - \mu_i \frac{1}{N-1} \sum_{k=1}^{N-1-\hat{L}_i} (x_k - x_i) \\
&= \gamma p_i + \hat{\delta}_i G - \mu_i \frac{1}{N-1} \sum_{f=1}^{\hat{L}_i} (\gamma p_i + \hat{\delta}_i G - \gamma p_f - \hat{\delta}_f G) - \mu_i \frac{1}{N-1} \sum_{k=1}^{N-1-\hat{L}_i} (\gamma p_k + \hat{\delta}_k G - \gamma p_i - \hat{\delta}_i G) \\
&= \gamma p_i + \hat{\delta}_i G - \mu_i \frac{\hat{L}_i}{N-1} \gamma p_i - \mu_i \frac{\hat{L}_i}{N-1} \hat{\delta}_i G + \mu_i \frac{1}{N-1} \gamma \sum_{f=1}^{\hat{L}_i} p_f + \mu_i \frac{1}{N-1} G \sum_{f=1}^{\hat{L}_i} \hat{\delta}_f - \\
&\quad - \mu_i \frac{1}{N-1} \gamma \sum_{k=1}^{N-1-\hat{L}_i} p_k - \mu_i \frac{1}{N-1} G \sum_{k=1}^{N-1-\hat{L}_i} \hat{\delta}_k + \mu_i \frac{N-1-\hat{L}_i}{N-1} \gamma p_i + \mu_i \frac{N-1-\hat{L}_i}{N-1} \hat{\delta}_i G \\
&= \gamma p_i + \hat{\delta}_i G + \mu_i \frac{N-1-2\hat{L}_i}{N-1} \gamma p_i + \mu_i \frac{N-1-2\hat{L}_i}{N-1} \hat{\delta}_i G + \\
&\quad + \mu_i \frac{1}{N-1} \gamma \left(\sum_{f=1}^{\hat{L}_i} p_f - \sum_{k=1}^{N-1-\hat{L}_i} p_k \right) + \mu_i \frac{1}{N-1} G \left(\sum_{f=1}^{\hat{L}_i} \hat{\delta}_f - \sum_{k=1}^{N-1-\hat{L}_i} \hat{\delta}_k \right)
\end{aligned} \tag{15}
$$

The first derivative of the utility function with respect to the consumption of the private good is given by:

$$
\begin{aligned}
\frac{\partial U(p_i, g_i)}{\partial p_i} &= \gamma + \mu_i \frac{N-1-2\hat{L}_i}{N-1} \gamma \\
&= \gamma \left(1 + \mu_i (1 - 2 \frac{\hat{L}_i}{N-1}) \right) \\
&= \gamma \left(1 + \mu_i (1 - 2\hat{a}) \right)
\end{aligned} \tag{16}
$$

where $\hat{a} \equiv \frac{\hat{L}_i}{N-1}$ is individual's i rank in the income distribution.

The first derivative of the utility function with respect to the consumption of the

public good is given by:

$$\begin{aligned}
\frac{\partial U(p_i, g_i)}{\partial g_i} &= \hat{\delta}_i + \mu_i \frac{N-1-2\hat{L}_i}{N-1}\hat{\delta}_i + \mu_i \frac{1}{N-1}\left(\sum_{f=1}^{\hat{L}_i}\hat{\delta}_f - \sum_{k=1}^{N-1-\hat{L}_i}\hat{\delta}_k\right) \\
&= \hat{\delta}_i + \mu_i \frac{N-1-2\hat{L}_i}{N-1}\hat{\delta}_i + \mu_i \frac{1}{N-1}\left(\hat{L}_i \frac{1}{\hat{L}_i}\sum_{f=1}^{\hat{L}_i}\hat{\delta}_f - (N-1-\hat{L}_i)\frac{1}{N-1-\hat{L}_i}\sum_{k=1}^{N-1-\hat{L}_i}\hat{\delta}_k\right) \\
&= \hat{\delta}_i + \mu_i \frac{N-1-2\hat{L}_i}{N-1}\hat{\delta}_i + \mu_i \frac{1}{N-1}\left(\hat{L}_i\hat{\bar{\delta}}_f - (N-1-\hat{L}_i)\hat{\bar{\delta}}_k\right) \\
&= \hat{\delta}_i(1+\mu_i(1-2\hat{a})) + \mu_i(\hat{a}\hat{\bar{\delta}}_f - (1-\hat{a})\hat{\bar{\delta}}_k) \qquad (17)
\end{aligned}$$

where $\hat{\bar{\delta}}_f \equiv \frac{1}{\hat{L}_i}\sum_{f=1}^{\hat{L}_i}\hat{\delta}_f$ and $\hat{\bar{\delta}}_k \equiv \frac{1}{N-1-\hat{L}_i}\sum_{k=1}^{N-1-\hat{L}_i}\hat{\delta}_f$ are the average marginal benefits from the public good of the individuals with a lower and higher payoff, respectively, from the perspective of individual i whose perceived rank in the income distribution is $\hat{a} = \frac{\hat{L}_i}{N-1}$. Accounting for the negative relation between absolute income levels and the marginal benefit of the public good, the following conditions hold $\hat{\bar{\delta}}_f > \hat{\bar{\delta}}_k$, $\frac{\partial\hat{\bar{\delta}}_f}{\partial\hat{a}} > 0$, and $\frac{\partial\hat{\bar{\delta}}_k}{\partial\hat{a}} < 0$.

The marginal willingness to pay for the public good by individual i is then given by:

$$MWTP_i^{IA} = \frac{\frac{\partial U_i(p_i,g_i)}{\partial g_i}}{\frac{\partial U_i(p_i,g_i)}{\partial p_i}} = \frac{\hat{\delta}_i}{\gamma} + \frac{\mu_i(\hat{a}\hat{\bar{\delta}}_f - (1-\hat{a})\hat{\bar{\delta}}_k)}{\gamma\,(1+\mu_i(1-2\hat{a}))} \qquad (18)$$

Equation (18) illustrates that the marginal willingness to contribute to the public good of an inequality averse individual is given by the marginal willingness to contribute under standard preferences and an additional term, *i.e.*, let $m = \frac{\mu_i(\hat{a}\hat{\bar{\delta}}_f - (1-\hat{a})\hat{\bar{\delta}}_k)}{\gamma(1+\mu_i(1-2\hat{a}))}$ such that $MWTP_i^{IA} = MWTP_i^S + m$. An increase in perceived relative income $\hat{a}$, all other things equal, will affect $MWTP_i^{IA}$ such that:

$$\frac{\partial MWTP_i^{IA}}{\partial\hat{a}} = \frac{\partial MWTP_i^S}{\partial\hat{a}} + \frac{\partial m}{\partial\hat{a}}, \qquad (19)$$

where

$$\frac{\partial MWTP_i^S}{\partial\hat{a}} = \frac{1}{\gamma}\cdot\frac{\partial\hat{\delta}_i}{\partial\hat{a}} < 0, \qquad (20)$$

and

$$\frac{\partial m}{\partial \hat{a}} = \frac{1}{\gamma^2(1+\mu_i(1-2\hat{a}))^2}\left[\mu_i\left(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k + \hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\gamma\Big(1+\mu_i(1-2\hat{a})\Big) - \mu_i\gamma\Big(\hat{a}\hat{\bar{\delta}}_f - (1-\hat{a})\hat{\bar{\delta}}_k\Big)(-2\mu_i)\right]$$

$$= \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}))^2}\left[\left(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k + \hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\Big(1+\mu_i(1-2\hat{a})\Big) + 2\mu_i\Big(\hat{a}\hat{\bar{\delta}}_f - (1-\hat{a})\hat{\bar{\delta}}_k\Big)\right]$$

$$= \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}))^2}\left[(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k)\Big(1+\mu_i(1-2\hat{a})\Big) + 2\mu_i\Big(\hat{a}\hat{\bar{\delta}}_f - \hat{\bar{\delta}}_k + \hat{a}\hat{\bar{\delta}}_k\Big) + \left(\hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\Big(1+\mu_i(1-2\hat{a})\Big)\right]$$

$$= \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}))^2}\left[(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k)\Big(1+\mu_i(1-2\hat{a})\Big) + 2\mu_i\hat{a}(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k) - 2\mu_i\hat{\bar{\delta}}_k + \left(\hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\Big(1+\mu_i(1-2\hat{a})\Big)\right]$$

$$= \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}))^2}\left[(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k)\Big(1+\mu_i - 2\hat{a}\mu_i + 2\hat{a}\mu_i\Big) - 2\mu_i\hat{\bar{\delta}}_k + \left(\hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\Big(1+\mu_i(1-2\hat{a})\Big)\right]$$

$$= \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}))^2}\left[(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k)\Big(1+\mu_i\Big) - 2\mu_i\hat{\bar{\delta}}_k + \left(\hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\Big(1+\mu_i(1-2\hat{a})\Big)\right]$$

$$= \frac{\mu_i}{\gamma(1+\mu_i(1-2\hat{a}))^2}\left[(\hat{\bar{\delta}}_f + \hat{\bar{\delta}}_k) + \mu_i(\hat{\bar{\delta}}_f - \hat{\bar{\delta}}_k) + \left(\hat{a}\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} - (1-\hat{a})\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}}\right)\Big(1+\mu_i(1-2\hat{a})\Big)\right] \tag{21}$$

The expression in the square brackets of Equation 21 is a sum of positive terms, as $\mu_i \in (0,1)$, $a \in (0,1)$, $\hat{\bar{\delta}}_f > \hat{\bar{\delta}}_k$, $\frac{\partial \hat{\bar{\delta}}_f}{\partial \hat{a}} > 0$ and $\frac{\partial \hat{\bar{\delta}}_k}{\partial \hat{a}} < 0$. It follows that $\frac{\partial m}{\partial \hat{a}} > 0$.

2. Motivated beliefs

In the second survey experiment, we find a reduction in the perceived health impact of air pollution when respondents are treated to feel relatively *poorer*. Based on our theoretical framework from Section I, the effect is unexpected. A potential mechanism is the formation of self-serving beliefs. Respondents may compensate for the loss in utility induced by a treatment that makes them feel relatively poorer with overly optimistic beliefs about the impact of air pollution on their own health. Such optimism echoes with results on asymmetric processing of objective information, whereby negative signals are less likely to lead to updates in beliefs and behavior (Eil and Rao, 2011; Kuzmanovic and Rigoux, 2017). A growing literature in economics and sociology acknowledges the emotional impact of beliefs and argues for its inclusion in the utility function. As beliefs become decision variables in the utility maximization problem, individuals form them overly optimistic, as indicated by both theoretical (Brunnermeier and Parker, 2005; Schwardmann, 2019) and empirical contributions (Kunda, 1987; Oster, Shoulson and Dorsey, 2013) with applications in domains ranging from financial investments to health. Comprehensive reviews are offered by Bénabou (2015) and Golman, Hagmann and Loewenstein (2017).

To reflect the results of the second experiment, we propose a modification of the theoretical framework from Section I to account for the emotional impact of updating beliefs about one's perceived relative income. To do so, we add a new term to the utility

function of individual i that represents the hedonic value of updating beliefs about the perceived rank in the income distribution, denoted $\Delta HV(\hat{a}_i)$. Then, the total utility of individual i is given by:

$$TU_i = U_i + \Delta HV(\hat{a}_i). \tag{22}$$

Since the perceived health impact of air pollution is affected by the perceived rank in the income distribution as documented by our experiments ($\frac{\partial \hat{\delta}}{\partial \hat{a}_i} \neq 0$), we expect the hedonic value of updating beliefs about $\hat{a}_i$ to include a component that accounts for changes in beliefs about the health impacts of air pollution. Let I_0 be the baseline information held by individual i about her perceived rank in the income distribution and I_1 the information held after a treatment that modifies the perceived rank in the income distribution. The hedonic value of updating beliefs about $\hat{a}_i$ will then be given by:

$$\Delta HV(\hat{a}_i) = \Big(hv(\hat{a}_{i|I_1}) - hv(\hat{a}_{i|I_0})\Big) + \Big(hv(\hat{\delta}(\hat{a}_{i|I_1})) - hv(\hat{\delta}(\hat{a}_{i|I_0}))\Big). \tag{23}$$

The first term in Equation (23) describes the hedonic value of updating information about the perceived rank in the income distribution (feeling relatively poorer or relatively richer). We assume that individuals derive positive utility from learning that they are relatively richer. That is, an increase in a_i corresponds to a positive hedonic value, *i.e.*, $\frac{\partial hv(\hat{a}_i)}{\partial \hat{a}_i} > 0$ or, otherwise stated $hv(\hat{a}_{i|I_1}) - hv(\hat{a}_{i|I_0}) > 0$ if $\hat{a}_{i|I_1} > \hat{a}_{i|I_0}$. Conversely, a decrease in $\hat{a}_i$ leads to a negative hedonic value.

The second term captures the hedonic value of updating beliefs about the health impacts of air pollution (feeling more or less impacted), given the change in beliefs about the perceived rank. We assume that an increase in the perceived health impacts of air pollution leads to a decrease in the hedonic value, as feeling personally more impacted can lead to feelings of stress and anxiety (Xie, Yuan and Zhang, 2023). With our notations, this is equivalent to $\frac{\partial hv(\hat{\delta}_i)}{\partial \hat{\delta}_i} < 0$ and $hv(\hat{\delta}(\hat{a}_{i|I_1})) - hv(\hat{\delta}(\hat{a}_{i|I_0}) < 0$ if $\hat{\delta}_{i|I_1} > \hat{\delta}_{i|I_0}$.

First, to study the effect of an *increase* in perceived relative income rank on total utility, everything else constant, we compute the first derivative of the total utility function[33] with respect to the updated perceived income rank $\hat{a}_{i|I_1}$:

$$\frac{\partial TU_i}{\partial \hat{a}_{i|I_1}} = \frac{\partial hv(\hat{a}_i)}{\partial \hat{a}_i} + \Big(\frac{\partial hv(\hat{\delta}_i)}{\partial \hat{\delta}_i} - G\Big)\frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i} \tag{24}$$

In Equation (24), believing that $\frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i} < 0$, as theorized in Section I, is favorable for individual i as it ensures an increase in total utility at an increase in the perceived income rank, given that $\frac{\partial hv(\hat{a}_i)}{\partial \hat{a}_i} > 0$ and $\frac{\partial hv(\hat{\delta}_i)}{\partial \hat{\delta}_i} < 0$.[34] In other words, the hedonic value of updating the perceived income rank offers an additional incentive for individual i to assume that personal health impacts are a decreasing function of income rank.

[33] For illustration, we use here the standard preferences utility form from Section IA, whereby $U_i = x_i$.

[34] The condition that $\frac{\partial TU_i}{\partial \hat{a}_{i|I_1}} > 0$ would be satisfied also when $\frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i} > 0$, but only provided that $\frac{\partial hv(\hat{a}_i)}{\partial \hat{a}_i} > \Big(G - \frac{\partial hv(\hat{\delta}_i)}{\partial \hat{\delta}_i}\Big)\frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i}$.

Second, to study the effect of a *decrease* in perceived relative income rank on total utility, everything else constant, we compute the first derivative of the total utility function with respect to the baseline perceived income rank $\hat{a}_{i|I_0}$:

$$\frac{\partial TU_i}{\partial \hat{a}_{i|I_0}} = -\frac{\partial hv(\hat{a}_i)}{\partial \hat{a}_i} - \frac{\partial hv(\hat{\delta}_i)}{\partial \hat{\delta}_i} \cdot \frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i} \tag{25}$$

In Equation (25), the change in total utility depends on the hedonic value of updating beliefs about the perceived income rank and updating beliefs about the health impacts of air pollution, with $\frac{\partial hv(\hat{a}_i)}{\partial \hat{a}_i} > 0$ and $\frac{\partial hv(\hat{\delta}_i)}{\partial \hat{\delta}_i} < 0$. If $\frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i} < 0$ as in the standard case presented in Section I, the total utility will decrease at a decrease in the perceived relative income rank, *i.e.*, $\frac{\partial TU_i}{\partial \hat{a}_{i|I_0}} < 0$. However, the effect on total utility can be mitigated if individual i chooses to believe that the perceived health impact of air pollution is an increasing function in income rank, *i.e.*, $\frac{\partial \hat{\delta}(\hat{a}_i)}{\partial \hat{a}_i} > 0$. In other words, the hedonic impact on the utility of an update downwards in perceived relative income provides an incentive for the individual to form self-serving beliefs about the relationship between income rank and the health impacts of air pollution. This is indeed the effect we observe in the second experiment: at a decrease in perceived relative income induced by the RT treatment, right-wing respondents report significantly lower perceived impacts of air pollution on their own health.

B. Procedure, Balance, and Attrition

In Table A-1, we give an overview of the procedure in both survey experiments, outlining the differences between the control group and the three treatment groups, *i.e.*, the income information treatment (IIT), the poor comparison treatment (PT), and the rich comparison treatment (RT).

Table A-1 – Survey experiment procedure.

Part	*Step*	C	IIT	PT	RT
A	1. Entry questionnaire on demographic characteristics	X	X	X	X
B	2. General and personalized air pollution info	X	X	X	X
C	3. Perception: relative income of comparison group			X	X
	4. Perception: prior relative own income	X	X		
	5. Information on position in income distribution		X		
	6. Perception: posterior relative own income		X	X	X
D	7. Stated and revealed outcome elicitation	X	X	X	X
	8. Exit questionnaire	X	X	X	X

Notes: Experimental procedure and the treatment variation therein. C = control, IIT = income information treatment, PT = poor comparison treatment, RT = rich comparison treatment.

Tables A-2 and A-3 report sample attrition and the outcome of our data cleaning according to the pre-registered exclusion criteria, respectively. Over all respondents that started the survey experiment in the four groups, 78.3% completed the full procedure, see Table A-2. Note that the overwhelming majority (85%) of the observed attrition occurs towards the beginning of the survey experiment with respondents either not giving consent, leaving during the entry questionnaire, or leaving during the reading and comprehension exercise on air pollution information. Crucially, these parts of the procedure are before the treatment variation where only about 3% of respondents decided to leave the survey experiment. Hence, neither of the treatments caused any additional attrition beyond what is expected as the procedure progresses.

Similarly, we do not observe any differences between treatments with respect to data cleaning due to the pre-registered exclusion criteria, see Table A-3. In total, we observe that 725 respondents from all four groups were dropped from the analysis due to either giving nonsensical answers, completing the survey experiment under four minutes (or part D under 90 seconds), failing one of two checks on straight-lining, *i.e.*, choosing the same response option multiple times in a row, or violating several of the criteria. We additionally test whether the total number of excluded respondents differs between the control group and the respective treatment, thereby testing whether any of the treatments potentially caused these violations. For neither of the three treatments, this is the case.

TABLE A-2 – Completion rates and sample attrition, by treatment.

	Control	IIT	PT	RT	Total
Completed	0.792	0.786	0.791	0.763	0.783
Consent form	0.016	0.013	0.016	0.023	0.017
Entry survey	0.086	0.091	0.102	0.103	0.095
Air pollution info	0.068	0.071	0.067	0.072	0.070
Treatment variation	0.001	0.005	0.002	0.004	0.003
Voluntary contribution	0.031	0.030	0.021	0.030	0.028
Support for public policies	0.003	0.000	0.000	0.002	0.001
Adoption of protection measures	0.001	0.000	0.001	0.000	0.000
Exit questionnaire	0.000	0.001	0.001	0.001	0.001
Nr. obs. before data cleaning	1025	1021	1024	1019	4089

Notes: Rates of experiment completion and attrition, by treatment and stage of the experiment. C = control, IIT = income information treatment, PT = poor comparison treatment, RT = rich comparison treatment.

TABLE A-3 – SAMPLE LOST DUE TO DATA CLEANING, BY TREATMENT.

	Control	IIT	PT	RT	Total
Nonsensical answers	26	22	22	20	90
Speeding	73	71	76	67	287
Straight-lining check 1	116	121	115	117	469
Straight-lining check 2	34	40	39	48	161
Nr. obs. lost	175	185	184	181	725
p-value t-test against control		.47	.57	.41	

Notes: Number of observations lost during data cleaning, by treatment and cleaning criteria. Nonsensical answers are unambiguously automated responses. Speeding is defined as a total response time of fewer than 240 seconds for the full survey experiment or less than 90 seconds for the full exit questionnaire. Straight-lining check 1 refers to a survey question specifically designed to identify straight-lining respondents. Straight-lining check 2 additionally omits participants that use the same response option in 13 consecutive questions during the exit questionnaire that are all answered with a 5-point Likert scale. C = control, IIT = income information treatment, PT = poor comparison treatment, RT = rich comparison treatment.

In Table A-4, we report summary statistics when pooling all four groups, *i.e.*, the control group, the IIT group, as well as the PT and RT groups. Characteristics are split by political leaning with about 57% of respondents on the right-wing, 18% on the center-left, and approximately 24% either not disclosing their political preference or reporting that they would abstain from voting (summarized in the "undisclosed" category). Participant characteristics in the pooled sample are generally comparable across the political spectrum.

TABLE A-4 – SUMMARY STATISTICS OF RESPONDENT CHARACTERISTICS IN THE POOLED SAMPLE, BY POLITICAL LEANING.

		Political leaning			p-value: Right
	All	Undisclosed	Center-left	Right	vs. Center-left
	(1)	(2)	(3)	(4)	(5)
Age	37.59	38.19	37.19	37.46	0.70
Female	0.48	0.51	0.50	0.47	0.22
Household size	4.38	4.33	4.32	4.43	0.21
Unemployed	0.24	0.33	0.22	0.21	0.69
Official income decile	8.02	8.08	8.01	8.00	0.95
University degree	0.88	0.86	0.90	0.88	0.22
Rural	0.06	0.06	0.06	0.06	0.70
Smoking	0.20	0.14	0.24	0.22	0.25
Infrequent physical exercise	0.13	0.16	0.12	0.13	0.62
Diagnosed illnesses	0.38	0.32	0.43	0.39	0.12
Observations	2472	603	452	1417	1869

Notes: Mean values of pre-treatment respondent characteristics in the control and the three treatment groups (IIT, PT, and RT), split by political leaning. The classification by political leaning is defined in Table 2. Diagnosed illnesses include allergies, high blood pressure, lung disease, and diabetes. C = control, IIT = income information treatment, PT = poor comparison treatment, RT = rich comparison treatment.

Tables A-5 and A-6 report balance tests on the set of observable characteristics between the control and treatment group for the first and second survey experiment, respectively. In the first survey experiment, the only unbalanced characteristic is rural residence with 8 percent of all respondents in the control group reporting to live in a rural area while in the income information group, only 5 percent report a rural residence, see Table A-5. The difference is significant at the 5% level in a mean comparison t-test. We control for rural residence throughout our analysis.

Table A-5 – Sample characteristics and balance tests in C and IIT.

	C		IIT		IIT - C
	N	Mean	N	Mean	
Age	636	36.72	618	37.67	0.95
		(12.73)		(13.24)	(0.73)
Female	636	0.48	618	0.49	0.00
		(0.50)		(0.50)	(0.03)
Household size	636	4.43	618	4.38	-0.05
		(1.67)		(1.65)	(0.09)
Unemployed	636	0.22	618	0.23	0.02
		(0.41)		(0.42)	(0.02)
Official income decile	636	7.86	618	8.05	0.19
		(2.79)		(2.71)	(0.16)
Right-wing	636	0.56	618	0.58	0.02
		(0.50)		(0.49)	(0.03)
Center-left	636	0.20	618	0.17	-0.03
		(0.40)		(0.38)	(0.02)
University degree	636	0.88	618	0.89	0.01
		(0.33)		(0.32)	(0.02)
Rural	636	0.08	618	0.05	-0.03**
		(0.27)		(0.22)	(0.01)
Infrequent physical exercise	636	0.14	618	0.15	0.01
		(0.34)		(0.36)	(0.02)
Smoking	636	0.19	618	0.19	-0.00
		(0.40)		(0.39)	(0.02)
Diagnosed illnesses	636	0.36	618	0.39	0.03
		(0.48)		(0.49)	(0.03)
Joint orthogonality F-stat					0.97
					(0.48)

Notes: Summary statistics of pre-treatment respondent characteristics and balance tests between control and income information treatment group. Standard deviations are reported in parentheses. The right-most column reports the difference in means between C and IIT with estimated standard error in parentheses. C = control, IIT = income information treatment. Significant t-test estimates are denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

We run similar mean comparison tests for our set of observable characteristics between the control and the comparison treatment, *i.e.*, between C and PT as well as between C and RT, see Table A-6. We find a slightly higher age and lower share of rural residence for both treatment groups when comparing them to the average characteristic in the control group. Respondents in the PT and RT group are about 1.3 years older and 3 percentage points less likely to live in a rural area than respondents in the control group. Additionally, we observe that respondents in the RT group are 5 percentage points more likely to be unemployed and that respondents in the PT group report having a slightly higher (0.3 deciles) income. For both treatments, an F-test of joint significance rejects a difference to the control group at the 5% confidence level.

Table A-6 – Sample characteristics and balance checks in the control and comparison treatment groups.

	C		PT		RT		PT - C	RT - C
	N	Mean	N	Mean	N	Mean		
Age	636	36.72	622	38.00	596	37.98	1.29*	1.26*
		(12.73)		(13.60)		(14.21)	(0.74)	(0.77)
Female	636	0.48	622	0.48	596	0.49	-0.00	0.01
		(0.50)		(0.50)		(0.50)	(0.03)	(0.03)
Household size	636	4.43	621	4.41	595	4.31	-0.02	-0.12
		(1.67)		(2.01)		(1.51)	(0.10)	(0.09)
Unemployed	636	0.22	622	0.25	596	0.27	0.03	0.05**
		(0.41)		(0.43)		(0.44)	(0.02)	(0.02)
Official income decile	636	7.86	622	8.17	596	8.02	0.31**	0.16
		(2.79)		(2.65)		(2.65)	(0.15)	(0.16)
Right-wing	636	0.56	622	0.58	596	0.57	0.03	0.02
		(0.50)		(0.49)		(0.50)	(0.03)	(0.03)
Center-left	636	0.20	622	0.18	596	0.18	-0.01	-0.02
		(0.40)		(0.39)		(0.38)	(0.02)	(0.02)
University degree	636	0.88	622	0.88	596	0.87	0.01	-0.00
		(0.33)		(0.32)		(0.33)	(0.02)	(0.02)
Rural	636	0.08	622	0.05	596	0.06	-0.03**	-0.03*
		(0.27)		(0.22)		(0.23)	(0.01)	(0.01)
Infrequent physical exercise	636	0.14	622	0.11	596	0.13	-0.02	-0.00
		(0.34)		(0.32)		(0.34)	(0.02)	(0.02)
Smoking	636	0.19	622	0.21	596	0.21	0.01	0.02
		(0.40)		(0.41)		(0.41)	(0.02)	(0.02)
Diagnosed illnesses	636	0.36	622	0.37	596	0.40	0.02	0.04
		(0.48)		(0.48)		(0.49)	(0.03)	(0.03)
Joint orthogonality F-stat							1.58	1.43
							(0.09)	(0.15)

Notes: Summary statistics of pre-treatment respondent characteristics and balance tests between control and the two comparison treatments. Standard deviations are reported in parentheses. The two right-most columns report the difference in means between C and PT as well as C and RT with estimated standard error in parentheses. C = control, PT = poor comparison treatment, RT = rich comparison treatment. Significant t-test estimates are denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

C. Preferences in the Control Group

We transform the support for public policies, the support for redistribution, and the intended use of private protection measures into binary measures indicating relatively high and relatively low support or utilization. While the transformation has empirical advantages, we report the distribution and mean values across the response categories for each outcome variable in Figure A-1 (for the support of public policies), Figure A-3 (for redistribution support), and Figure A-5 (for the intended adoption of private protection measure).

Additionally, we plot histograms of the aggregate measures for each outcome by political leaning in the control group, *i.e.*, for respondents on the right-wing as well as respondents on the center-left, see Figure A-2 (for the support of public policies), Figure A-4 (for redistribution support), and Figure A-6 (for the intended adoption of private protection measure). Finally, we report a histogram across response options for the right-wing and center-left respondents in the control group also for altruism, see Figure A-7

Public policy support

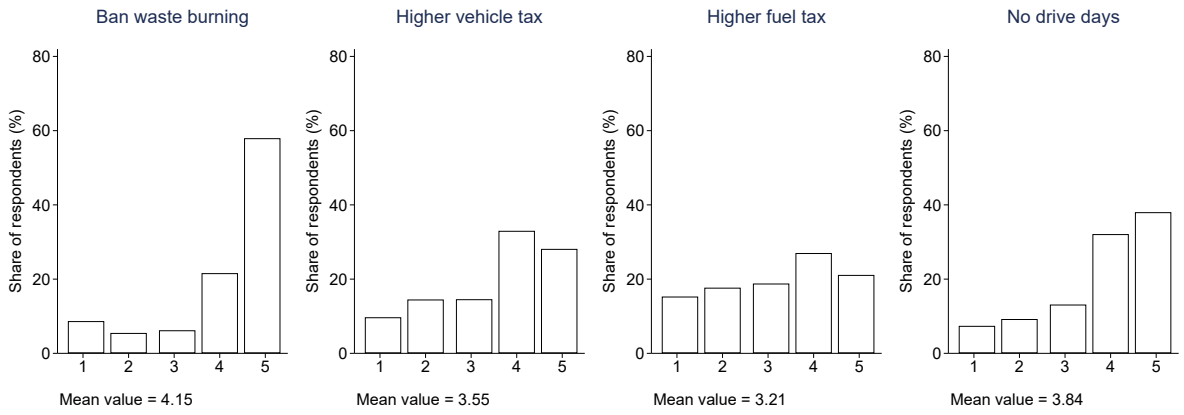


FIGURE A-1 – DISTRIBUTION OF PREFERENCES FOR THE IMPLEMENTATION OF STATE-LEVEL PUBLIC POLICIES AGAINST AIR POLLUTION IN THE CONTROL GROUP.

Notes: Distribution and mean value of responses for each component of the public policy support measure in the control group. Each question was phrased as "How willing are you to support the implementations of the following policies in your state?" with the following response options: 1 – Strongly oppose, 2 – Somewhat oppose, 3 – Undecided, 4 – Somewhat support, 5 – Strongly support.

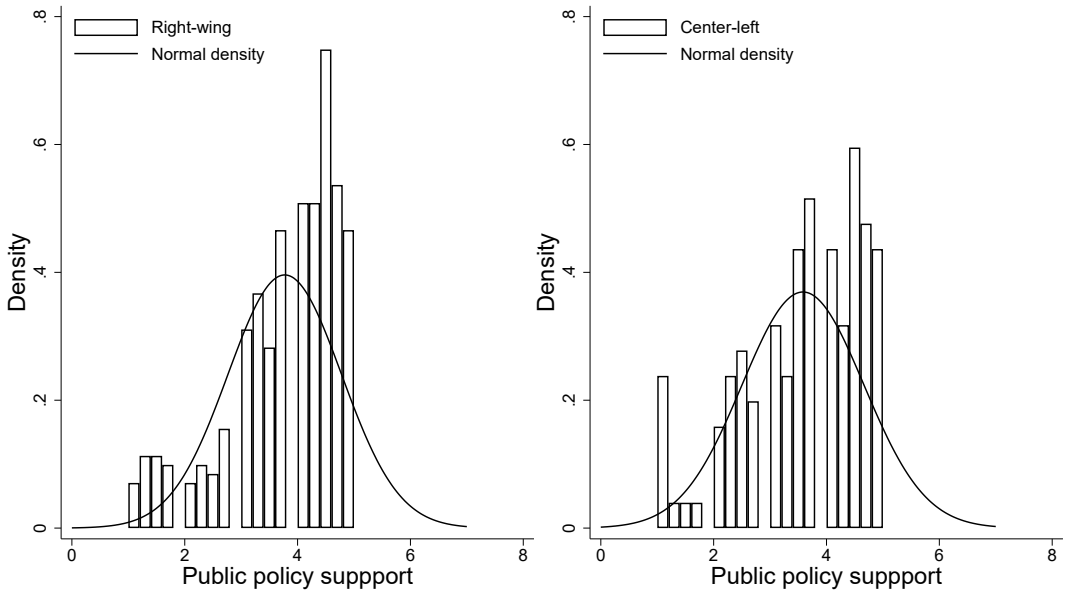


FIGURE A-2 – AGGREGATE PREFERENCE FOR STATE-LEVEL PUBLIC POLICIES AGAINST AIR POLLUTION IN THE CONTROL GROUP, BY POLITICAL LEANING.

Notes: Distribution of the aggregate measure for public policy support (for components, see Figure A-1) in the control group by political leaning. The classification by political leaning is defined in Table 2. We additionally plot a norm density distribution.

Redistribution support

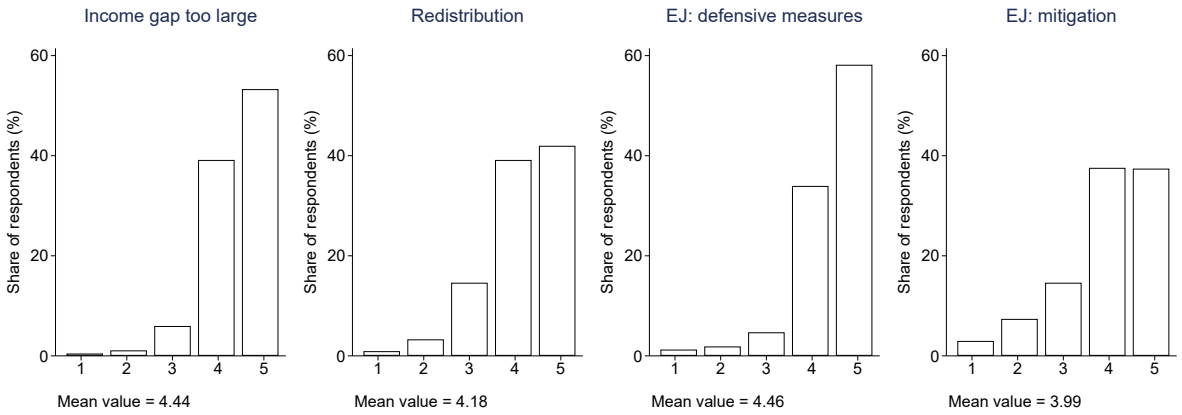


FIGURE A-3 – DISTRIBUTION OF PREFERENCES FOR REDISTRIBUTION IN THE CONTROL GROUP.

Notes: Distribution and mean value of responses for each component of the redistribution support measure in the control group. Statements were as follows: Inequality aversion – "The gap between the rich and the poor in India is too large", redistribution – "It is the responsibility of the government to reduce the income gap between the rich and the poor", EJ: protection measures – "The government should make sure that everyone has equal access to protection measures against air pollution, no matter what their income is", EJ: mitigation – "The government should make sure that those with a higher income contribute more to reducing air pollution than those with a lower income". For each statement, respondents were asked to indicate their agreement with 1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree.

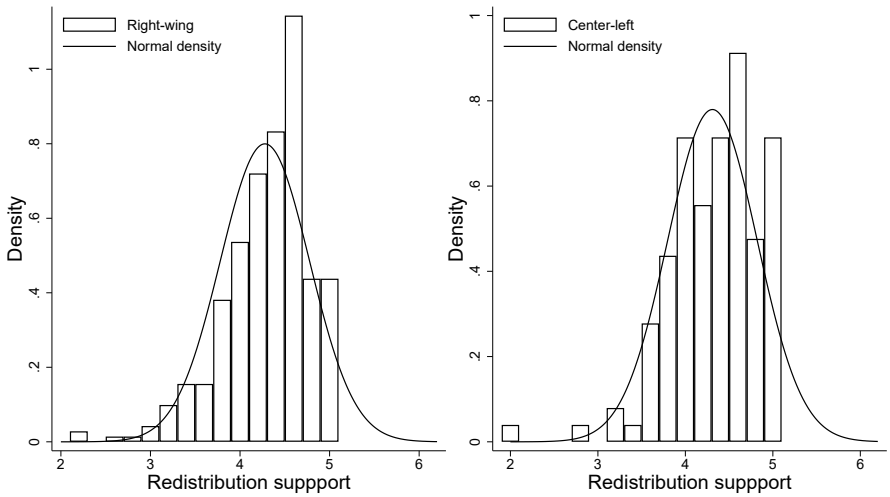


FIGURE A-4 – AGGREGATE PREFERENCES FOR REDISTRIBUTION IN THE CONTROL GROUP, BY POLITICAL LEANING.

Notes: Distribution of the aggregate measure for redistribution support (for components, see Figure A-5) in the control group by political leaning. The classification by political leaning is defined in Table 2. We additionally plot a norm density distribution.

Private protection measures adoption

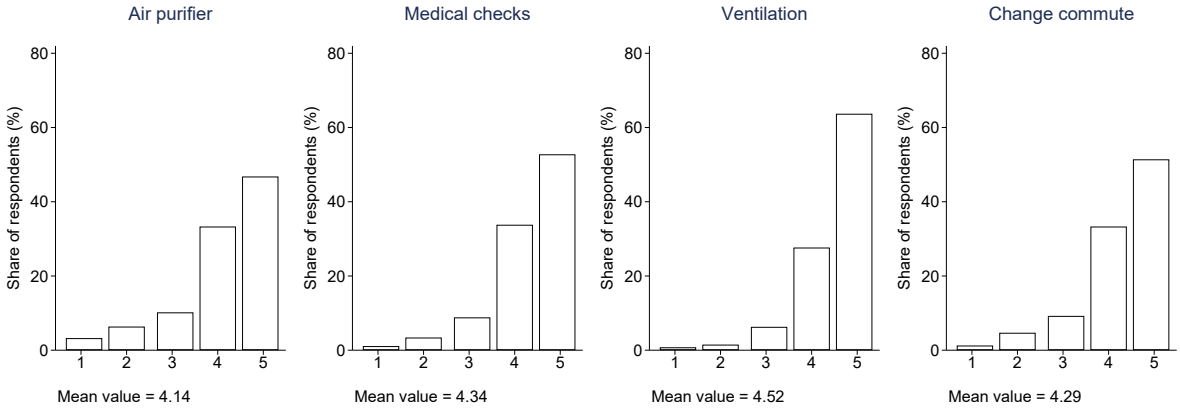


FIGURE A-5 – DISTRIBUTION OF THE INTENDED ADOPTION OF PROTECTION MEASURES IN THE CONTROL GROUP.

Notes: Distribution of responses for each component of the intended adoption of private protection measure in the control group. Each question was phrased as "How likely are you to adopt or continue using the following defensive strategies against air pollution?" with the following response options: 1 – Not likely at all, 2 – Rather unlikely, 3 – Undecided, 4 – Rather likely, 5 – Very likely.

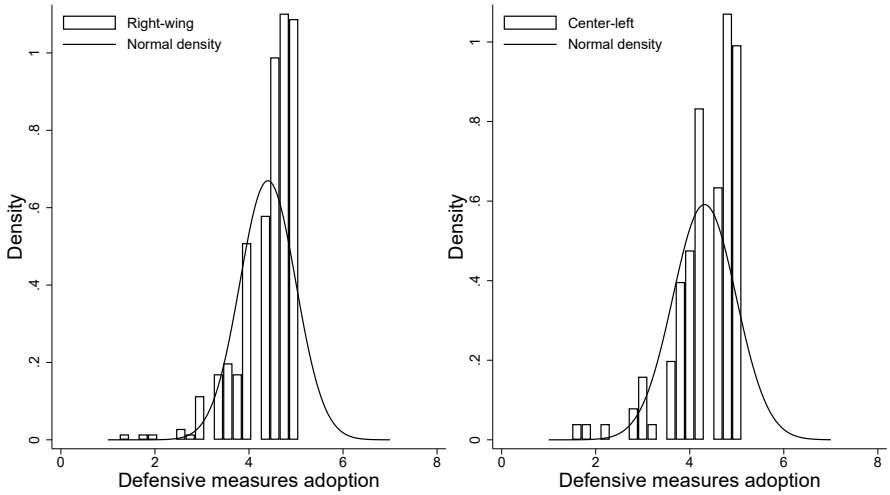


FIGURE A-6 – DISTRIBUTION OF THE AGGREGATE MEASURE FOR THE INTENDED ADOPTION OF PRIVATE PROTECTION MEASURES IN THE CONTROL GROUP, BY POLITICAL LEANING.

Notes: Distribution of the aggregate measure for the intended adoption of private protection measures (for components, see Figure A-5) in the control group by political leaning. The classification by political leaning is defined in Table 2. We additionally plot a norm density distribution.

Altruism

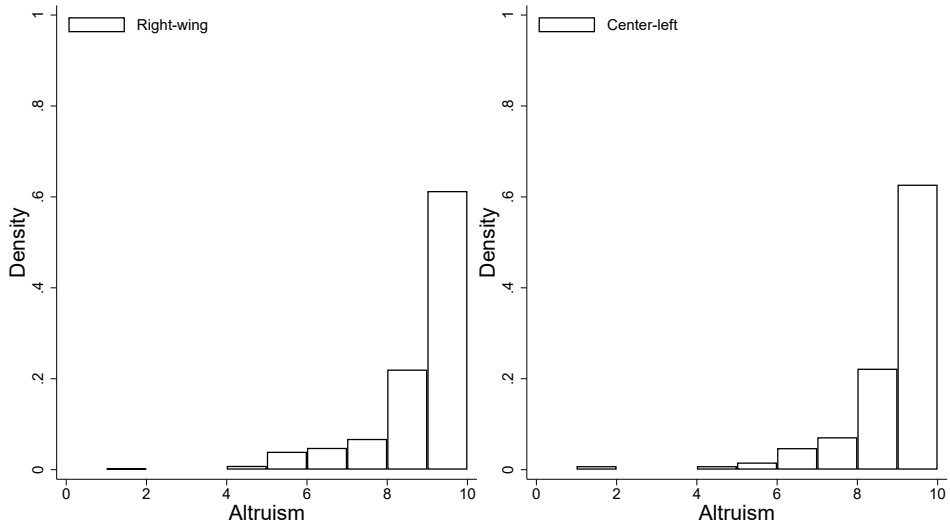


FIGURE A-7 – DISTRIBUTION OF STATED ALTRUISM IN THE CONTROL GROUP BY POLITICAL LEANING.

Notes: Distribution of stated altruism in the control group for right-wing respondents in the left plot and center-left respondents in the right plot. The classification by political leaning is defined in Table 2. The question was phrased as "How do you assess your willingness to do good for others without expecting anything in return?" with response options from : 1 – completely unwilling to 10 very willing.

D. Supporting Results: The Income Information Treatment

In the following, we report additional results for the first survey experiment. We begin by running our econometric analysis in the spirit of Equations (11) to (14) from Section D, testing for the treatment effect of the information provision on the individual components of the index measure for public policy support that is used in our main analysis in Table 3. For results, see Table A-7. We find no noteworthy result patterns for the individual policies, neither for a ban on waste burning (column 1), a higher vehicle tax (column 2), a higher fuel tax (column 3), nor for the introduction or extension of no drive days (column 4). A significant treatment effect is only observed with respect to marginally increased support for a ban on waste burning for the center-left (see Panel C) and reduced support for no-drive days when respondents have a positive prior misperception and are not willing to disclose their political preferences (see Panel D).

We repeat the same exercise with the individual components of our measure for the support of redistribution policies, see Table A-8. Those include the agreement with statements on whether the income gap between the rich and poor is too large (column 1), whether the government has the responsibility to close that income gap (column 2), whether the government should ensure that everyone has equal access to protection measures against air pollution exposure, no matter their income (column 3), and whether the government should ensure that those with a higher income contribute more to reducing air pollution (column 4). While there are no treatment effects of the information provision in the aggregate, we observe that those that were informed to be relatively poorer than initially thought (*i.e.*, those with a positive prior misperception) are significantly more likely to think that the income gap is too large and are more in favor of the government ensuring environmental justice than their counterparts in the control group, see Panel B. The negative treatment effects for the right-wing that we observe in the main analysis appear to be mostly due to a treatment effect on a reduced agreement with the statement that the government should close the income gap between the rich and the poor, see Panel C.

Lastly, we repeat the approach for the individual protection measures that are part of our index in the main analysis, see Table A-9. Those include the use of air purifiers, medical check-ups, the frequent ventilation of indoor spaces, and a change in commute to avoid peak pollution exposure. We find aggregate negative treatment effect of the information provision on the potentially more costly protection measures, *i.e.*, use of air purifiers (significant at 1%) and medical check-ups (significant at 10%), see Panel A. We find that especially those with a negative prior misperception drive the overall effect, see Panel B. When distinguishing by political leaning, the reduction in intended adoption of air purifiers and medical checks appears to be present across the spectrum (most sharply estimated for the right-wing due to the highest sample size) with an additional negative effect on frequent violation among voters of the right-wing. The intention to change commuting patterns appears unaffected by the treatment.

In addition to our main outcomes, we test for treatment effects with respect to a measure of happiness and a measure of altruistic preferences, see Table A-10. For neither happiness nor altruism, we find any treatment effect of the income information provision

in the IIT group. The same is true when we distinguish the sample by the prior misperception or by the respondents' political leaning. It appears that the income information treatment does not lead to an emotional response and has no effect on respondents' preference for altruism.

To finish our additional analyses on the income information treatment, we repeat our main analysis in Table 3 to show robustness to the inclusion of a rich set of control variables. That is, in addition to controlling for rural residence and the respondent's official income decile, we include age, gender, household size, an indicator for unemployment, an indicator for having a university degree, an indicator for smoking, an indicator for infrequent physical exercise, and an indicator for a diagnosed illness in the past 5 years (all self-reported) as covariates and repeat the analysis according to Equations (11) to (14), see Table A-11. Furthermore, we additionally report marginal effects for the "undisclosed" category of respondents' political leaning

Table A-7 – Effects on public policy support for fighting air pollution in the income information treatment.

	Ban waste burning (1)	Higher vehicle tax (2)	Higher fuel tax (3)	No drive days (4)
Panel A: Average treatment effects				
IIT	-0.081	-0.002	-0.045	-0.010
	(0.065)	(0.067)	(0.074)	(0.046)
Observations	1,253	1,253	1,253	1,253
Control mean	4.180	3.550	3.230	3.840
Controls	Yes	Yes	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception				
IIT x Pos.misp.	-0.044	-0.154	-0.080	-0.057
	(0.198)	(0.156)	(0.210)	(0.114)
IIT x Neg.misp.	-0.091	0.029	-0.035	0.002
	(0.069)	(0.096)	(0.094)	(0.053)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning				
IIT x Right	-0.121	-0.091	-0.089	-0.029
	(0.100)	(0.094)	(0.091)	(0.088)
IIT x Center-left	0.199*	-0.033	-0.213	0.180
	(0.119)	(0.217)	(0.186)	(0.188)
IIT x Undisclosed	-0.182	0.198	0.150	-0.118
	(0.133)	(0.156)	(0.134)	(0.117)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes
Panel D: Marginal treatment effects of interaction with direction of prior misperception and political leaning				
IIT x Pos.misp. x Right	-0.004	-0.164	-0.098	0.059
	(0.301)	(0.242)	(0.225)	(0.143)
IIT x Pos.misp. x Center-left	0.069	-0.019	0.221	0.077
	(0.381)	(0.406)	(0.383)	(0.349)
IIT x Pos.misp. x Undisclosed	-0.378	-0.263	-0.305	-0.642**
	(0.302)	(0.362)	(0.307)	(0.250)
IIT x Neg.misp. x Right	-0.153	-0.076	-0.083	-0.049
	(0.127)	(0.110)	(0.114)	(0.103)
IIT x Neg.misp. x Center-left	0.222	-0.042	-0.333	0.218
	(0.144)	(0.276)	(0.224)	(0.229)
IIT x Neg.misp. x Undisclosed	-0.162	0.258	0.224	-0.040
	(0.123)	(0.170)	(0.152)	(0.123)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A), Equation (12) (Panel B), Equation (13) (Panel C), and Equation (14) (Panel D) for each component of the support for public policies measure. Within each panel, each column corresponds to a separate OLS regression. Panels B, C, and D report marginal treatment effects. All models include state fixed effects and control for rural location and official income decile. See Table 2 for variable definitions. Standard errors (in parentheses) are clustered at the state level. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

TABLE A-8 – EFFECTS ON SUPPORT FOR REDISTRIBUTION POLICIES IN THE INCOME INFORMATION TREATMENT.

	Income gap too large	Income redistribution	Environmental justice: protection measures	Environmental justice: mitigation
	(1)	(2)	(3)	(4)
Panel A: Average treatment effects				
IIT	-0.004	-0.059	-0.020	-0.009
	(0.043)	(0.061)	(0.039)	(0.044)
Observations	1,253	1,253	1,253	1,253
Control mean	4.440	4.180	4.460	3.990
Controls	Yes	Yes	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception				
IIT x Pos.misp.	0.199**	0.028	0.134***	0.279*
	(0.084)	(0.114)	(0.050)	(0.151)
IIT x Neg.misp.	-0.050	-0.081	-0.058	-0.074
	(0.051)	(0.083)	(0.051)	(0.054)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning				
IIT x Right	-0.029	-0.112*	0.010	0.015
	(0.040)	(0.066)	(0.040)	(0.050)
IIT x Center-left	0.134	0.089	-0.173*	-0.057
	(0.102)	(0.065)	(0.102)	(0.116)
IIT x Undisclosed	-0.043	-0.027	0.028	-0.037
	(0.078)	(0.138)	(0.110)	(0.101)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes
Panel D: Marginal treatment effects of interaction with direction of prior misperception and political leaning				
IIT x Pos.misp. x Right	0.100	-0.040	0.279***	0.325*
	(0.105)	(0.138)	(0.102)	(0.168)
IIT x Pos.misp. x Center-left	0.488*	0.105	-0.362	0.200
	(0.257)	(0.262)	(0.243)	(0.341)
IIT x Pos.misp. x Undisclosed	0.159	0.153	0.214	0.279
	(0.213)	(0.261)	(0.224)	(0.331)
IIT x Neg.misp. x Right	-0.061	-0.132	-0.060	-0.061
	(0.054)	(0.084)	(0.046)	(0.058)
IIT x Neg.misp. x Center-left	0.044	0.097	-0.121	-0.129
	(0.104)	(0.081)	(0.103)	(0.117)
IIT x Neg.misp. x Undisclosed	-0.076	-0.059	-0.010	-0.083
	(0.102)	(0.157)	(0.122)	(0.125)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A), Equation (12) (Panel B), Equation (13) (Panel C), and Equation (14) (Panel D) for each component of the redistribution support measure. Within each panel, each column corresponds to a separate OLS regression. Panel B, C, and D report marginal treatment effects. All models include state fixed effects and control for rural location and official income decile. See Table 2 for variable definitions. Standard errors (in parentheses) are clustered at the state level. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

TABLE A-9 – EFFECTS ON STATED ADOPTION OF PROTECTION MEASURES IN THE INCOME INFORMATION TREATMENT.

	Air purifier (1)	Medical check-up (2)	Frequent ventilation (3)	Change in commute (4)
Panel A: Average treatment effects				
IIT	-0.176***	-0.097*	-0.035	0.043
	(0.037)	(0.048)	(0.041)	(0.034)
Observations	1,253	1,253	1,253	1,253
Control mean	4.230	4.380	4.530	4.260
Controls	Yes	Yes	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception				
IIT x Pos.misp.	-0.121	-0.086	-0.047	0.082
	(0.096)	(0.120)	(0.096)	(0.093)
IIT x Neg.misp.	-0.201***	-0.102**	-0.033	0.030
	(0.055)	(0.051)	(0.053)	(0.042)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning				
IIT x Right	-0.194***	-0.093	-0.084**	0.046
	(0.064)	(0.073)	(0.042)	(0.057)
IIT x Center-left	-0.373***	-0.077	0.023	0.078
	(0.117)	(0.107)	(0.106)	(0.113)
IIT x Undisclosed	-0.000	-0.131*	0.025	-0.014
	(0.136)	(0.077)	(0.104)	(0.082)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes
Panel D: Marginal treatment effects of interaction with direction of prior misperception and political leaning				
IIT x Pos.misp. x Right	-0.036	-0.165	-0.025	0.177
	(0.160)	(0.171)	(0.089)	(0.113)
IIT x Pos.misp. x Center-left	-0.489**	0.101	0.220	-0.026
	(0.227)	(0.244)	(0.270)	(0.192)
IIT x Pos.misp. x Undisclosed	0.123	-0.012	-0.402**	-0.087
	(0.416)	(0.225)	(0.191)	(0.203)
IIT x Neg.misp. x Right	-0.243***	-0.078	-0.096	0.010
	(0.071)	(0.071)	(0.060)	(0.067)
IIT x Neg.misp. x Center-left	-0.338**	-0.133	-0.029	0.107
	(0.147)	(0.161)	(0.164)	(0.148)
IIT x Neg.misp. x Undisclosed	-0.036	-0.151*	0.093	-0.009
	(0.136)	(0.083)	(0.120)	(0.099)
Observations	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A), Equation (12) (Panel B), Equation (13) (Panel C), and Equation (14) (Panel D) for each component of the intended use of private protection measure. Within each panel, each column corresponds to a separate OLS regression. Panel B, C, and D report marginal treatment effects. All models include state fixed effects and control for rural location and official income decile. Standard errors (in parentheses) are clustered at the state level. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

TABLE A-10 – EFFECTS ON HAPPINESS AND ALTRUISM IN THE INCOME INFORMATION TREATMENT.

	Happiness (1)	Altruism (2)
Panel A: Average treatment effects		
IIT	-0.004	-0.074
	(0.039)	(0.080)
Observations	1,253	1,253
Control mean	4.150	8.640
Controls	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception		
IIT x Pos.misp.	0.015	-0.207
	(0.098)	(0.211)
IIT x Neg.misp.	-0.028	-0.060
	(0.044)	(0.101)
Observations	1,253	1,253
Controls	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning		
IIT x Right	0.025	0.106
	(0.049)	(0.124)
IIT x Center-left	-0.099	-0.292
	(0.136)	(0.207)
IIT x Undisclosed	-0.011	-0.344
	(0.079)	(0.242)
Observations	1,253	1,253
Controls	Yes	Yes
Panel D: Marginal treatment effects of interaction with direction of prior misperception and political leaning		
IIT x Pos.misp. x Right	0.088	-0.026
	(0.118)	(0.249)
IIT x Pos.misp. x Center-left	-0.285	-0.471
	(0.283)	(0.483)
IIT x Pos.misp. x Undisclosed	0.195	-0.370
	(0.265)	(0.682)
IIT x Neg.misp. x Right	-0.010	0.126
	(0.048)	(0.141)
IIT x Neg.misp. x Center-left	-0.047	-0.245
	(0.158)	(0.227)
IIT x Neg.misp. x Undisclosed	-0.077	-0.354
	(0.079)	(0.230)
Observations	1,253	1,253
Controls	Yes	Yes

Notes: This table reports the results of the regression analysis specified in Eq. 11 (Panel A), Eq. 12 (Panel B), Eq. 13 (Panel C), and Eq. 14, where the outcome variable is stated in the column headings. Happiness was elicited as a response to the question: "How happy are you in general?" with "very happy", "rather happy", "neutral", "not very happy", and "not at all happy" as response options. Altruism was elicited with the question "How do you assess your willingness to do good for others without expecting anything in return?" with response options from : 1 – completely unwilling to 10 – very willing. Within each panel, each column corresponds to a separate OLS regression. Panels B, C, and D report marginal treatment effects for the respective interactions. All models include state fixed effects and control for rural residence and official income decile. Our measures of happiness and altruism are included in the computation of q-values to adjust for multiple hypothesis testing, see Table A-18. Standard errors are clustered at the state level and reported in parentheses. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

TABLE A-11 – ESTIMATED TREATMENT EFFECTS IN THE INCOME INFORMATION TREATMENT, CONTROLLING FOR A RICH SET OF PERSONAL CHARACTERISTICS.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Average treatment effects							
IIT	1.183***	-0.043	-0.012	-0.016	-0.038	-0.045**	-0.130***
	(0.082)	(0.026)	(0.023)	(0.026)	(0.030)	(0.020)	(0.036)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Control mean	5.970	0.770	0.330	0.590	0.560	0.590	3.990
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception							
IIT x Pos.misp.	-1.472***	-0.073	-0.001	-0.069	0.046	-0.001	-0.181
	(0.283)	(0.057)	(0.048)	(0.046)	(0.070)	(0.070)	(0.139)
IIT x Neg.misp.	1.675***	-0.039	-0.018	-0.004	-0.059	-0.055*	-0.126***
	(0.099)	(0.027)	(0.022)	(0.033)	(0.037)	(0.028)	(0.039)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning							
IIT x Right	1.005***	-0.084**	-0.012	-0.058	-0.074***	-0.049*	-0.115**
	(0.117)	(0.033)	(0.016)	(0.042)	(0.026)	(0.026)	(0.047)
IIT x Center-left	0.949***	-0.006	-0.005	-0.008	0.022	-0.037	-0.172
	(0.239)	(0.059)	(0.060)	(0.046)	(0.065)	(0.068)	(0.127)
IIT x Undisclosed	1.805***	0.021	-0.019	0.068	0.007	-0.053	-0.144
	(0.165)	(0.058)	(0.047)	(0.048)	(0.061)	(0.053)	(0.128)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: Marginal treatment effects of interaction with direction of prior misperception and political leaning							
IIT x Pos.misp. x Right	-1.617***	-0.029	0.124**	-0.073	-0.001	0.030	-0.165
	(0.459)	(0.066)	(0.054)	(0.086)	(0.099)	(0.080)	(0.169)
IIT x Pos.misp. x Center-left	-1.383***	-0.156	-0.101	-0.029	0.051	0.016	-0.054
	(0.413)	(0.116)	(0.082)	(0.121)	(0.119)	(0.126)	(0.268)
IIT x Pos.misp. x Undisclosed	-0.988*	-0.094	-0.287**	-0.088	0.192	-0.093	-0.282
	(0.543)	(0.125)	(0.115)	(0.116)	(0.149)	(0.127)	(0.298)
IIT x Neg.misp. x Right	1.537***	-0.100***	-0.049**	-0.054	-0.095**	-0.068***	-0.110**
	(0.137)	(0.036)	(0.021)	(0.046)	(0.038)	(0.023)	(0.046)
IIT x Neg.misp. x Center-left	1.566***	0.037	0.023	-0.003	0.014	-0.052	-0.209
	(0.209)	(0.063)	(0.063)	(0.062)	(0.076)	(0.101)	(0.139)
IIT x Neg.misp. x Undisclosed	2.085***	0.034	0.015	0.090*	-0.023	-0.048	-0.131
	(0.168)	(0.061)	(0.041)	(0.051)	(0.075)	(0.067)	(0.125)
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A), Equation (12) (Panel B), Equation (13) (Panel C), and Equation (14) (Panel D). Within each panel, each column corresponds to a separate OLS regression. Panels B, C, and D report marginal treatment effects. All models include state fixed effects and control for the following respondent characteristics: rural residence, official income decile, age, gender, household size, an indicator for currently unemployed, an indicator for having a university degree, an indicator for smoking, an indicator for doing physical exercise once a month or less, and an indicator for having been diagnosed with an air pollution-related illness in the past 5 years. Standard errors (in parentheses) are clustered at the state level. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

E. Supporting Results: The Comparison Treatments

Similar to the supporting analyses presented in Appendix D, we test for treatment effects on the individual index components of our main outcomes variables also for the second survey experiment, *i.e.*, for the PT and RT treatments.

For an analysis of the individual policies in our index measure of public policy support, see Table A-12. With the exception of a marginally significant increase in the support for no drive days for the poor comparison treatment, we find no significant treatment effects.

Table A-13 reports results for the individual components of our measure for redistribution support. With the exception of an increase in the support for the government to step in to ensure that the rich do more for pollution mitigation in the PT treatment, we find no significant treatment effects in the aggregate, see Panel A. The significant increase in redistribution support among the center-left in the RT treatment appears does not appear to be driven by a single policy. That is, while we cannot document a significant effect for either of the four components, both a higher vehicle tax and no drive days find increased support after center-left respondents are treated with the rich comparison household, see Panel B.

Next, we analyze the individual protection measures, see Table A-14. Again, we find that the intended use of relatively costly protection measures is reduced when the treatment induces an upwards shift in perceived relative income, *i.e.*, in the PT treatment. The effect appears to occur independent of political leaning. We find a very similar effect for the RT treatment, *i.e.*, when relative income perceptions decrease. Similar to the first survey experiment, the use of inexpensive protection measures (frequent ventilation and a change in commute) appears unaffected by a change in perceived relative income.

Once again, we also test for treatment effects on a measure of happiness and a measure of altruistic preferences, see Table A-15. For neither outcome, we find any treatment effects in the PT or RT group. In line with the income information treatment, there is no emotional response or a change in altruism when perceived relative income changes.

Lastly, we repeat our main analysis in Table 4 with a rich set of control variables including age, gender, household size, an indicator for unemployment, an indicator for having a university degree, an indicator for smoking, and indicator for infrequent physical exercise, and an indicator for a diagnosed illness in the past 5 years (additionally reporting marginal effects for the "undisclosed" category of political leaning). Results showcase the robustness of our results.

Table A-12 – Effects on public policy support to fight air pollution in the comparison treatments.

	Ban waste burning (1)	Higher vehicle tax (2)	Higher fuel tax (3)	No drive days (4)
	Panel A: Average treatment effects			
PT	0.094	-0.001	-0.031	0.115*
	(0.064)	(0.097)	(0.043)	(0.064)
RT	-0.053	-0.009	-0.079	0.032
	(0.064)	(0.104)	(0.062)	(0.066)
Observations	1,852	1,852	1,852	1,852
Control mean	4.180	3.550	3.230	3.840
Controls	Yes	Yes	Yes	Yes
	Panel B: Marginal effects in interaction with political leaning			
PT x Right	0.151	-0.036	0.014	0.107
	(0.104)	(0.148)	(0.099)	(0.111)
PT x Center-left	0.005	-0.020	-0.142	0.250
	(0.171)	(0.180)	(0.145)	(0.167)
PT x Undisclosed	0.022	0.067	-0.091	0.020
	(0.122)	(0.154)	(0.116)	(0.194)
RT x Right	0.002	-0.141	-0.098	-0.000
	(0.088)	(0.131)	(0.100)	(0.096)
RT x Center-left	-0.053	0.088	-0.047	0.208
	(0.158)	(0.199)	(0.105)	(0.177)
RT x Undisclosed	-0.179	0.210*	-0.063	-0.034
	(0.126)	(0.119)	(0.112)	(0.130)
Observations	1,852	1,852	1,852	1,852
Controls	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A) and Equation (13) (Panel B), with random treatment assignment to the poor (PT) and rich (RT) comparison groups. Each component of the support for public policies measure serves as the dependent variable. Within each panel, each column corresponds to a separate OLS regression. Panel B reports marginal treatment effects. All models include state fixed effects and control for rural location and official income decile. Standard errors (in parentheses) are clustered at the state level. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

Table A-13 – Estimated treatment effects on support for redistribution in the comparison treatments.

	Inequality aversion	Income redistribution	Environmental justice: defensive measures	Environmental justice: mitigation
		Panel A: Average treatment effects		
PT	0.006	-0.018	0.053	0.127***
	(0.055)	(0.041)	(0.034)	(0.035)
RT	0.032	-0.057	0.040	0.066
	(0.036)	(0.041)	(0.034)	(0.044)
Observations	1,852	1,852	1,852	1,852
Control mean	4.44	4.18	4.46	3.99
Controls	Yes	Yes	Yes	Yes
		Panel B: Marginal effects in interaction with political leaning		
PT x Right	-0.071	-0.078**	0.077	0.099**
	(0.050)	(0.038)	(0.058)	(0.049)
PT x Center-left	0.200***	0.083	-0.054	0.080
	(0.078)	(0.079)	(0.101)	(0.111)
PT x Undisclosed	0.051	0.064	0.087	0.224***
	(0.094)	(0.134)	(0.096)	(0.077)
RT x Right	0.007	-0.096**	0.079	-0.046
	(0.033)	(0.044)	(0.052)	(0.056)
RT x Center-left	0.087	0.129	0.052	0.305**
	(0.108)	(0.118)	(0.105)	(0.152)
RT x Undisclosed	0.048	-0.098	-0.049	0.149***
	(0.058)	(0.097)	(0.106)	(0.056)
Observations	1,852	1,852	1,852	1,852
Controls	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A) and Equation (13) (Panel B), with random treatment assignment to the poor (PT) and rich (RT) comparison groups. Each component of the redistribution support measure serves as the dependent variable. Within each panel, each column corresponds to a separate OLS regression. Panel B reports marginal treatment effects. All models include state fixed effects and control for rural location and official income decile. Standard errors (in parentheses) are clustered at the state level. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

TABLE A-14 – EFFECTS ON STATED ADOPTION OF PROTECTION MEASURES IN THE COMPARISON TREATMENTS.

	Air purifier (1)	Medical check-up (2)	Frequent ventilation (3)	Change in commute (4)
		Panel A: Average treatment effects		
PT	-0.115**	-0.053	-0.016	0.000
	(0.052)	(0.045)	(0.049)	(0.063)
RT	-0.099***	-0.097*	-0.006	0.005
	(0.032)	(0.049)	(0.045)	(0.039)
Observations	1,852	1,852	1,852	1,852
Control mean	4.23	4.38	4.53	4.26
Controls	Yes	Yes	Yes	Yes
		Panel B: Marginal effects in interaction with political leaning		
PT x Right	-0.160***	-0.061	-0.075	-0.008
	(0.059)	(0.069)	(0.052)	(0.087)
PT x Center-left	-0.156	-0.069	0.033	0.077
	(0.108)	(0.094)	(0.107)	(0.118)
PT x Undisclosed	0.013	-0.033	0.078	-0.056
	(0.113)	(0.071)	(0.095)	(0.088)
RT x Right	-0.109	-0.100	-0.057	-0.028
	(0.073)	(0.075)	(0.072)	(0.057)
RT x Center-left	-0.025	0.012	0.113	0.132
	(0.118)	(0.128)	(0.140)	(0.095)
RT x Undisclosed	-0.126	-0.169*	0.020	-0.023
	(0.086)	(0.094)	(0.094)	(0.091)
Observations	1,852	1,852	1,852	1,852
Controls	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A) and Equation (13) (Panel B), with random treatment assignment to the poor (PT) and rich (RT) comparison groups. Each component of the intended adoption of private protection measures serves as the dependent variable. Within each panel, each column corresponds to a separate OLS regression. Panel B reports marginal treatment effects. All models include state fixed effects and control for rural location and official income decile. Standard errors (in parentheses) are clustered at the state level. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

Table A-15 – Effects on happiness and altruism in the comparison treatments.

	Happiness (1)	Altruism (2)
	Panel A: Average treatment effects	
PT	0.037	0.014
	(0.046)	(0.074)
RT	-0.034	0.039
	(0.046)	(0.096)
Observations	1,852	1,852
Control mean	4.150	8.640
Controls	Yes	Yes
	Panel B: Marginal effects in interaction with political leaning	
PT x Right	0.056	0.118
	(0.068)	(0.157)
PT x Center-left	-0.107	-0.115
	(0.111)	(0.173)
PT x Undisclosed	0.087	-0.147
	(0.113)	(0.262)
RT x Right	-0.039	0.130
	(0.062)	(0.125)
RT x Center-left	-0.049	-0.013
	(0.093)	(0.167)
RT x Undisclosed	-0.007	-0.122
	(0.092)	(0.205)
Observations	1,852	1,852
Controls	Yes	Yes

Notes: Each column corresponds to a separate OLS regression. All models include state fixed effects and control for rural location and official income decile. Standard errors are clustered at the state level and reported in parentheses. Happiness was elicited as a response to the question: "How happy are you in general?" with "very happy", "rather happy", "neutral", "not very happy", and "not at all happy" as response options. Altruism was elicited with the question "How do you assess your willingness to do good for others without expecting anything in return?" with response options from: 1 – completely unwilling to 10 – very willing. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1. We include happiness and altruism in the computation of q-values to adjust for multiple hypothesis testing, as reported in Table A-19.

TABLE A-16 – ESTIMATED TREATMENT EFFECTS IN THE COMPARISON TREATMENTS, CONTROLLING FOR A RICH SET OF PERSONAL CHARACTERISTICS.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Average treatment effects							
PT	0.799***	-0.016	0.009	-0.005	0.009	-0.012	-0.138**
	(0.082)	(0.022)	(0.021)	(0.028)	(0.026)	(0.031)	(0.052)
RT	-0.715***	-0.017	-0.004	-0.022	0.010	-0.055**	-0.212***
	(0.085)	(0.018)	(0.025)	(0.029)	(0.023)	(0.021)	(0.051)
Observations	1,850	1,850	1,850	1,850	1,850	1,850	1,850
Control mean	5.970	0.770	0.330	0.590	0.560	0.590	3.990
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Marginal effects in interaction with political leaning							
PT x Right	0.859***	-0.054**	-0.001	0.005	-0.006	-0.039	-0.194***
	(0.112)	(0.027)	(0.023)	(0.052)	(0.031)	(0.030)	(0.053)
PT x Center-left	0.043	-0.025	0.007	-0.056	0.016	0.016	-0.205
	(0.278)	(0.048)	(0.061)	(0.051)	(0.060)	(0.047)	(0.137)
PT x Undisclosed	1.225***	0.077	0.032	-0.006	0.043	0.024	0.040
	(0.194)	(0.052)	(0.051)	(0.059)	(0.054)	(0.064)	(0.116)
RT x Right	-0.451***	-0.052**	-0.017	-0.023	-0.013	-0.096***	-0.253***
	(0.146)	(0.023)	(0.027)	(0.042)	(0.027)	(0.034)	(0.071)
RT x Center-left	-1.402***	0.007	0.006	-0.039	0.114**	0.055	-0.167
	(0.363)	(0.042)	(0.063)	(0.065)	(0.055)	(0.072)	(0.126)
RT x Undisclosed	-0.793***	0.041	0.021	-0.012	-0.013	-0.044	-0.151
	(0.256)	(0.055)	(0.057)	(0.040)	(0.048)	(0.064)	(0.130)
Observations	1,850	1,850	1,850	1,850	1,850	1,850	1,850
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (11) (Panel A) and Equation (13) (Panel B), with random treatment assignment to the poor (PT) and rich (RT) comparison groups. Within each panel, each column corresponds to a separate OLS regression. All models include state fixed effects and control for the following respondent characteristics: rural residence, official income decile, age, gender, household size, an indicator of currently unemployed, an indicator of having a university degree, an indicator of smoking, an indicator for doing physical exercise once a month or less, and an indicator for having been diagnosed with an air pollution-related illness in the past 5 years. Standard errors (in parentheses) are clustered at the state level. Panel B reports marginal treatment effects. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

F. Joint Estimation

We use a single control group to test impacts of our three treatments in the first and second survey experiment. Here, we present treatment effects in interaction with the respondent's political leaning from a joint estimation where all treatments are compared simultaneously against the control group. The estimation takes the form:

$$y_i = \beta_1 IIT_i + \beta_2 PT_i + \beta_3 RT_i + \beta_4 \text{Leaning}_i + \beta_5 IIT_i \times \text{Leaning}_i + \beta_6 PT_i \times \text{Leaning}_i + \beta_7 RT_i \times \text{Leaning}_i + X_i'\Gamma + \eta_s + \epsilon_i. \tag{26}$$

where y_i is the respective dependent variable in our set of outcomes for respondent i. IIT is an indicator for random assignment to the income information treatment, PT for poor comparison treatment, and RT for the rich comparison treatment. The classification by political leaning is defined in Table 2. η_s are state fixed effects and X_i is a vector of observable characteristics, namely an indicator for rural residence and the respondent's official income decile. ϵ_i is the error term clustered at the state level. Table A-17 reports marginal treatment effects on our main outcomes of interest. Results are in line with our main analysis.

Table A-17 – Marginal treatment effects in a joint estimation model.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IIT x Right	1.024***	-0.087***	-0.009	-0.056	-0.080***	-0.050**	-0.114**
	(0.118)	(0.033)	(0.016)	(0.042)	(0.027)	(0.024)	(0.051)
IIT x Center-left	0.963***	-0.005	-0.003	-0.007	0.037	-0.020	-0.138
	(0.270)	(0.058)	(0.060)	(0.052)	(0.065)	(0.066)	(0.130)
IIT x Undisclosed	1.832***	0.014	-0.017	0.075	-0.003	-0.049	-0.139
	(0.133)	(0.055)	(0.048)	(0.048)	(0.061)	(0.056)	(0.125)
PT x Right	0.775***	-0.060**	-0.002	-0.002	-0.012	-0.052	-0.213***
	(0.117)	(0.029)	(0.024)	(0.054)	(0.027)	(0.032)	(0.061)
PT x Center-left	0.097	-0.023	0.010	-0.046	0.033	0.032	-0.164
	(0.264)	(0.049)	(0.060)	(0.053)	(0.063)	(0.045)	(0.141)
PT x Undisclosed	1.215***	0.073	0.033	0.003	0.038	0.031	0.038
	(0.206)	(0.046)	(0.052)	(0.064)	(0.057)	(0.060)	(0.111)
RT x Right	-0.493***	-0.053**	-0.012	-0.024	-0.014	-0.110***	-0.257***
	(0.160)	(0.026)	(0.026)	(0.044)	(0.028)	(0.034)	(0.074)
RT x Center-left	-1.368***	0.014	0.006	-0.038	0.134**	0.066	-0.123
	(0.358)	(0.041)	(0.060)	(0.068)	(0.058)	(0.073)	(0.128)
RT x Undisclosed	-0.830***	0.031	0.016	-0.011	-0.022	-0.058	-0.170
	(0.277)	(0.053)	(0.055)	(0.043)	(0.051)	(0.067)	(0.127)
Observations	2,470	2,470	2,470	2,470	2,470	2,470	2,470
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents results of the regression analyses specified in Equation (26) with a joint sample of the control and all treatment groups (IIT, PT, and RT). Each column corresponds to a separate OLS regression and reports marginal treatment effects. See Table 2 for variable definitions. All models include state fixed effects and control for rural location and official income decile. Standard errors (in parentheses) are clustered at the state level. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

G. Multiple Hypothesis Testing

In Table A-18, we adjust the main analysis in the first survey experiment (see Table 3) for multiple hypothesis testing using the Benjamini-Hochberg method as described in Anderson (2008) to compute q-values that we report in square brackets. In addition to the seven main outcome variables displayed in the table, the adjustment procedure also considers the treatment effects (although they are not reported) on both altruism and happiness that are analyzed in Table A-10.

Table A-18 – Estimated treatment effects in the income information treatment and correction for multiple hypothesis testing.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Average treatment effects							
IIT	1.168***	-0.046*	-0.012	-0.015	-0.038	-0.047**	-0.135***
	(0.080)	(0.025)	(0.024)	(0.027)	(0.031)	(0.020)	(0.038)
	[0.001]	[0.125]	[0.658]	[0.658]	[0.310]	[0.076]	[0.006]
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Control mean	5.970	0.770	0.330	0.590	0.560	0.590	3.990
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Marginal treatment effects of interaction with sign of the prior misperception							
IIT x Pos.misp.	-1.438***	-0.077	-0.002	-0.067	0.065	0.023	-0.124
	(0.263)	(0.055)	(0.044)	(0.044)	(0.066)	(0.073)	(0.140)
	[0.001]	[0.379]	[1.000]	[0.345]	[0.546]	[1]	[0.546]
IIT x Neg.misp.	1.656***	-0.042	-0.017	-0.004	-0.064*	-0.064**	-0.148***
	(0.099)	(0.026)	(0.023)	(0.034)	(0.038)	(0.030)	(0.040)
	[0.001]	[0.335]	[0.641]	[1.000]	[0.335]	[0.136]	[0.002]
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Marginal treatment effects of interaction with political leaning							
IIT x Right	0.956***	-0.090***	-0.013	-0.060	-0.078***	-0.059**	-0.135***
	(0.129)	(0.032)	(0.016)	(0.043)	(0.028)	(0.025)	(0.052)
	[0.001]	[0.028]	[0.703]	[0.427]	[0.028]	[0.067]	[0.035]
IIT x Center-left	1.014***	-0.001	0.002	-0.003	0.033	-0.021	-0.138
	(0.256)	(0.059)	(0.059)	(0.050)	(0.065)	(0.068)	(0.125)
	[0.001]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.677]
IIT x Undisclosed	1.812***	0.018	-0.021	0.071	0.006	-0.050	-0.144
	(0.146)	(0.055)	(0.049)	(0.050)	(0.062)	(0.055)	(0.128)
	[0.001]	[1.000]	[1.000]	[0.427]	[1.000]	[0.703]	[0.677]
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(continued)

(Table A-18 continued)

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel D: Marginal treatment effects of interaction with the direction of prior misperception and political leaning							
IIT x Pos.misp. x Right	-1.606***	-0.034	0.116***	-0.080	0.022	0.054	-0.098
	(0.450)	(0.064)	(0.044)	(0.087)	(0.092)	(0.083)	(0.169)
	[0.004]	[1.000]	[0.045]	[0.998]	[1.000]	[1.000]	[1.000]
IIT x Pos.misp. x Center-left	-1.231***	-0.150	-0.096	-0.010	0.076	0.063	0.034
	(0.473)	(0.115)	(0.083)	(0.128)	(0.121)	(0.141)	(0.271)
	[0.045]	[0.751]	[0.923]	[1.000]	[1.000]	[1.000]	[1.000]
IIT x Pos.misp. x Undisclosed	-1.017*	-0.112	-0.275**	-0.081	0.205	-0.099	-0.297
	(0.533)	(0.125)	(0.118)	(0.119)	(0.145)	(0.126)	(0.318)
	[0.224]	[0.998]	[0.087]	[1.000]	[0.631]	[1.000]	[0.998]
IIT x Neg.misp. x Right	1.489***	-0.106***	-0.046**	-0.055	-0.105***	-0.087***	-0.151***
	(0.137)	(0.036)	(0.021)	(0.047)	(0.038)	(0.023)	(0.051)
	[0.001]	[0.022]	[0.116]	[0.923]	[0.036]	[0.002]	[0.022]
IIT x Neg.misp. x Center-left	1.598***	0.041	0.029	-0.001	0.021	-0.045	-0.190
	(0.211)	(0.062)	(0.060)	(0.068)	(0.074)	(0.103)	(0.137)
	[0.001]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.631]
IIT x Neg.misp. x Undisclosed	2.093***	0.032	0.011	0.092*	-0.028	-0.045	-0.132
	(0.156)	(0.057)	(0.043)	(0.054)	(0.077)	(0.071)	(0.123)
	[0.001]	[1.000]	[1.000]	[0.349]	[1.000]	[1.000]	[0.998]
Observations	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reproduces Table 3 from the main text with the additional reporting of q-values that correct for multiple hypothesis testing. Here, we additionally report coefficient estimates for the "undisclosed" political leaning category. We compute the q-values using the Benjamini-Hochberg method as described in Anderson (2008). Reported q-values (in square brackets) indicate the smallest false discovery rate at which the null hypothesis of a zero effect is rejected. In addition to the seven main outcome variables displayed in this table, the adjustment procedure also considers the treatment effects on both altruism and happiness, displayed in Table A-10. Within each panel, each column corresponds to a separate OLS regression. Panels B, C, and D report marginal treatment effects for the respective interactions. All models include state fixed effects and control for rural residence and official income decile. Standard errors are clustered at the state level and reported in parentheses. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

In Table A-19, we repeat the adjustment for multiple hypothesis testing in the second survey experiment using the same procedure as described for the first survey experiment (see above).

Table A-19 – Estimated treatment effects in the comparison treatments and correction for multiple hypothesis testing.

	Perceived income decile	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Panel A: Average treatment effects						
PT	0.792***	-0.017	0.011	-0.002	0.008	-0.013	-0.140**
	(0.081)	(0.021)	(0.022)	(0.029)	(0.025)	(0.029)	(0.054)
	[0.001]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.043]
RT	-0.722***	-0.022	-0.003	-0.020	0.009	-0.063***	-0.212***
	(0.085)	(0.018)	(0.025)	(0.030)	(0.025)	(0.022)	(0.050)
	[0.001]	[0.950]	[1.000]	[1.000]	[1.000]	[0.030]	[0.002]
Observations	1,852	1,852	1,852	1,852	1,852	1,852	1,852
Control mean							
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B: Marginal effects in interaction with political leaning						
PT x Right	0.807***	-0.056*	0.001	0.002	-0.011	-0.050	-0.210***
	(0.112)	(0.030)	(0.024)	(0.054)	(0.029)	(0.031)	(0.060)
	[0.001]	[0.555]	[1.000]	[1.000]	[1.000]	[0.777]	[0.004]
PT x Center-left	0.141	-0.023	0.009	-0.044	0.028	0.033	-0.170
	(0.273)	(0.049)	(0.060)	(0.054)	(0.063)	(0.046)	(0.138)
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
PT x Undisclosed	1.240***	0.074	0.035	0.007	0.038	0.031	0.042
	(0.197)	(0.047)	(0.051)	(0.064)	(0.057)	(0.060)	(0.112)
	[0.001]	[0.777]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
RT x Right	-0.471***	-0.055**	-0.014	-0.021	-0.014	-0.107***	-0.256***
	(0.146)	(0.026)	(0.026)	(0.044)	(0.028)	(0.034)	(0.072)
	[0.01]	[0.118]	[1.000]	[1.000]	[1.000]	[0.010]	[0.006]
RT x Center-left	-1.345***	0.011	0.007	-0.034	0.128**	0.066	-0.127
	(0.380)	(0.041)	(0.061)	(0.067)	(0.058)	(0.072)	(0.129)
	[0.006]	[1.000]	[1.000]	[1.000]	[0.112]	[1.000]	[1.000]
RT x Undisclosed	-0.813***	0.029	0.013	-0.011	-0.024	-0.061	-0.171
	(0.274)	(0.055)	(0.056)	(0.043)	(0.051)	(0.066)	(0.129)
	[0.015]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.878]
Observations	1,852	1,852	1,852	1,852	1,852	1,852	1,852
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reproduces Table 4 from the main text with the additional reporting of q-values that correct for multiple hypothesis testing. We additionally report coefficient estimates for the "undisclosed" political leaning category. We compute the q-values using the Benjamini-Hochberg method as described in Anderson (2008). Reported q-values (in square brackets) indicate the smallest false discovery rate at which the null hypothesis of a zero effect is rejected. In addition to the seven main outcome variables displayed in this table, the adjustment procedure also considers the treatment effects on both altruism and happiness, displayed in Table A-15. Within each panel, each column corresponds to a separate OLS regression. Panels B, C, and D report marginal treatment effects for the respective interactions. All models include state fixed effects and control for rural residence and official income decile. Standard errors are clustered at the state level and reported in parentheses. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

H. Instrumental Variable Analysis

To compare the magnitude of effects in both survey experiments, we run an instrumental variable analysis. In Table A-20, we use the random assignment to IIT of respondents with a negative prior misperception in the first survey experiment as an instrument for perceived relative income, *i.e.*, the case when relative income perceptions are shifted upwards. Similarly, we use the random treatment assignment to the poor comparison treatment in the second survey experiment as an instrument for a change in perceived relative income in the same direction, see Table A-21. In both cases, we study the relationship with our set of main outcome variables.

The results of our instrumental variable analyses are in line with our main analysis. Especially for the right-wing, an increase in perceived relative income (in both the IIT for negative misperceptions and in the PT group) leads to a significant withdrawal of contribution alongside reduced health concerns and a lower intention to adopt private protection measures. The same pattern is not observed for the center-left.

Table A-20 – Instrumental variable estimates of the impact of perceived relative income on main outcomes in the income information treatment.

	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Entire sample						
Perceived relative income	-0.026*	-0.009	-0.003	-0.036*	-0.036*	-0.088***
	(0.015)	(0.014)	(0.021)	(0.021)	(0.018)	(0.026)
Observations	1,029	1,029	1,029	1,029	1,029	1,029
Kleibergen-Paap F stat	254.42	254.42	254.42	254.42	254.42	254.42
Control mean	0.76	0.32	0.61	0.57	0.60	3.97
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Right-wing respondents						
Perceived relative income	-0.072***	-0.023	-0.038	-0.069***	-0.050***	-0.074**
	(0.019)	(0.014)	(0.033)	(0.023)	(0.015)	(0.033)
Observations	574	574	574	574	574	574
Kleibergen-Paap F stat	132.46	132.46	132.46	132.46	132.46	132.46
Control mean	0.80	0.35	0.67	0.57	0.65	4.06
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Center-left respondents						
Perceived relative income	0.018	0.014	-0.013	0.024	-0.006	-0.145
	(0.042)	(0.037)	(0.038)	(0.044)	(0.067)	(0.097)
Observations	180	180	180	180	180	180
Kleibergen-Paap F stat	64.39	64.39	64.39	64.39	64.39	64.39
Control mean	0.75	0.31	0.58	0.56	0.55	4.00
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: Undisclosed leaning respondents						
Perceived relative income	0.007	-0.005	0.045*	-0.024	-0.022	-0.089
	(0.030)	(0.024)	(0.025)	(0.040)	(0.036)	(0.076)
Observations	265	265	265	265	265	265
Kleibergen-Paap F stat	148.85	148.85	148.85	148.85	148.85	148.85
Control mean	0.67	0.29	0.50	0.56	0.52	3.75
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table presents the results of an instrumental variable analysis on our set of main outcomes. Each column corresponds to a separate IV regression. The sample used for the estimation consists of respondents with a negative prior misperception of their relative income in the control and the income information treatment group. The instrument used is the random assignment to the income information treatment. All models include state fixed effects and control for rural location and official income decile. Standard errors are clustered at the state level and reported in parentheses. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

Table A-21 – Instrumental variable estimates of the impact of perceived relative income on main outcomes in the poor comparison treatment.

	Contrib. extensive margin	Contrib. intensive margin	Public policy support	Redistr. policy support	Protection measures	Perceived health impacts
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Entire sample						
Perceived relative income	-0.020	0.015	-0.003	0.013	-0.015	-0.187**
	(0.029)	(0.028)	(0.037)	(0.033)	(0.038)	(0.079)
Observations	1,256	1,256	1,256	1,256	1,256	1,256
Kleibergen-Paap F stat	83.78	83.78	83.78	83.78	83.78	83.78
Control mean	0.77	0.33	0.59	0.56	0.59	3.99
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Right-wing respondents						
Perceived relative income	-0.076*	0.012	-0.006	-0.018	-0.081*	-0.300***
	(0.040)	(0.033)	(0.074)	(0.039)	(0.045)	(0.095)
Observations	715	715	715	715	715	715
Kleibergen-Paap F stat	44.65	44.65	44.65	44.65	44.65	44.65
Control mean	0.81	0.34	0.65	0.57	0.64	4.08
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Center-left respondents						
Perceived relative income	-0.099	0.171	-0.294	0.241	0.467	-1.899
	(0.476)	(0.615)	(0.873)	(0.789)	(1.215)	(4.807)
Observations	231	231	231	231	231	231
Kleibergen-Paap F stat	0.17	0.17	0.17	0.17	0.17	0.17
Control mean	0.77	0.33	0.56	0.56	0.54	4.02
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: Undisclosed leaning respondents						
Perceived relative income	0.055	0.018	0.014	0.015	0.038	0.040
	(0.039)	(0.044)	(0.051)	(0.047)	(0.052)	(0.087)
Observations	300	300	300	300	300	300
Kleibergen-Paap F stat	34.66	34.66	34.66	34.66	34.66	34.66
Control mean	0.69	0.30	0.50	0.54	0.52	3.76
Controls	Yes	Yes	Yes	Yes	Yes	Yes

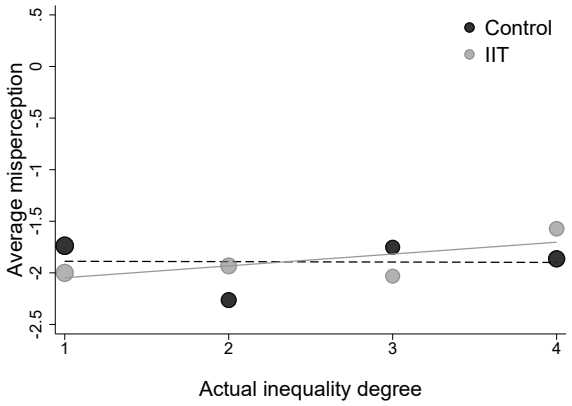
Notes: The table presents the results of an instrumental variable analysis, where the dependent variable is stated in the column headings. Each column corresponds to a separate IV regression. The sample used for the estimation consists of respondents in the control and the poor comparison treatment group. The instrument used is the random assignment to the poor comparison treatment. All models include state fixed effects and control for rural location and official income decile. Standard errors are clustered at the state level and reported in parentheses. See Table 2 for variable definitions. Significance is denoted as follows: *** p<0.01, ** p<0.05, and * p<0.1.

I. (Lack of) Learning about Actual Inequality Levels

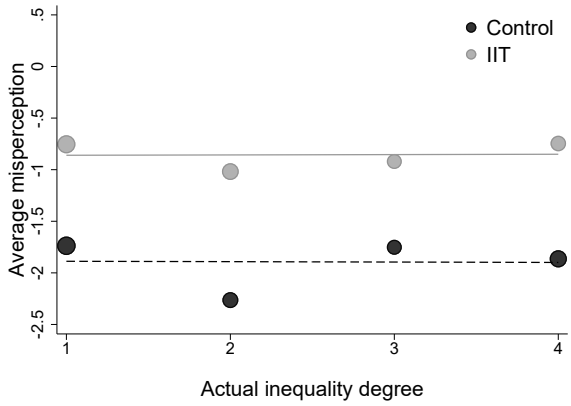
Figure A-8 provides evidence that the treatment did not induce differences in learning about the level of inequality in the respective state of residence (*i.e.*, at the level of which perceived relative income is measured). We use data from the Indian Periodic Labour Force Survey and compute the actual degree of inequality as the ratio between the income of the 90^{th} percentile (the upper bound of the 9^{th} decile) and the median income in the respective state. All states are then ranked by the degree of income inequality and divided into quartiles. We plot average relative income misperceptions in control and treatment groups by this measure of income inequality, see Panels A and B for prior and posterior misperceptions in the IIT group and Panels C and D for misperceptions in the PT and RT groups.

Average prior and posterior misperceptions are similar across different degrees of actual inequality, suggesting that the treatment effect, *i.e.*, the reduction of misperceptions induced by the income information indicated by the upwards shift in Panel B, does not depend on the inequality in the respondent's state of residence. Similarly, the reduction (PT) and increase (RT) of relative income misperceptions in the two comparison treatments (as indicated by an upwards and downwards shift of the linear fit in Panels C and D) is independent of the degree of actual inequality.

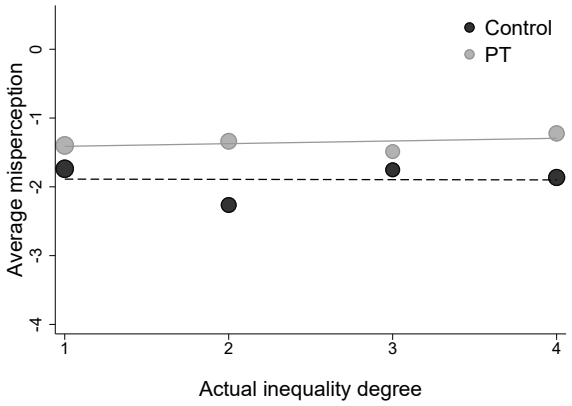
Panel A. Income information treatment (Prior)



Panel B. Income information treatment (Posterior)



Panel C. Poor comparison treatment



Panel D. Rich comparison treatment

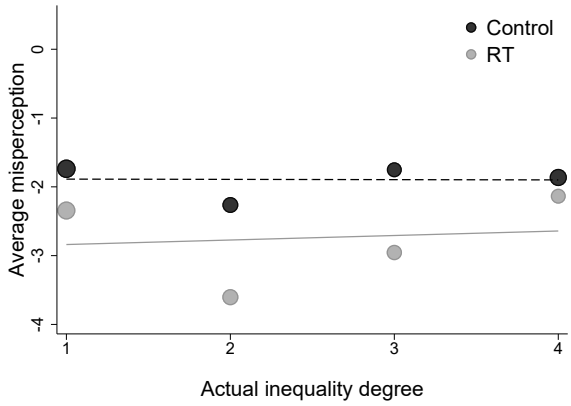


FIGURE A-8 – AVERAGE RELATIVE INCOME MISPERCEPTIONS, BY TREATMENT GROUP AND ACTUAL STATE-LEVEL DEGREE OF INEQUALITY.

Notes: The figure plots average relative income misperceptions (defined as perceived income minus actual income) by the degree of inequality in the respective state of residence for a comparison between control and income information treatment (Panels A and B), between control and the poor comparison group (Panel C), and between control and the rich comparison group (Panel D). The degree of inequality is defined as the ratio between the income of the 90^{th} percentile and the median income.

Additionally, we can test whether the treatments induce learning about the actual state level income inequality, *e.g.*, whether any of the treatments made respondents aware of the low or high degree of inequality in their state of residence. In Figure A-9, we plot the average response to whether respondents agree with the statement "The gap between the rich and the poor in India is too large" by treatment group and by the actual degree of inequality. While responses to the statement arguably include a large moral component (whether the gap is deemed to be a problem), the question can likely also capture a pure level effect of inequality, *i.e.*, a statement about the perceived size of the gap. If there was substantial learning induced by any of the treatments, one would expect the slope of the linear fit to get steeper, *i.e.*, those in states with a higher degree of inequality (a value of 4) becoming more likely to perceive the gap as too large. This is not the case. Independent of the treatment and the degree of inequality, average responses are around a value of 4.5 (between responses of 4 – "Agree" and 5 – "Strongly agree") with negligible differences between the control group and any of the three treatment groups.

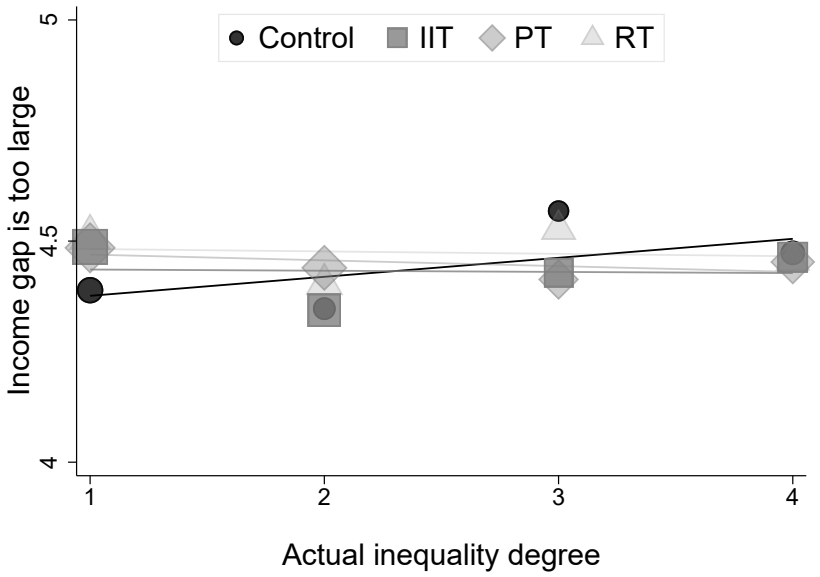


FIGURE A-9 – AGREEMENT THAT THE INCOME GAP IS TOO LARGE, BY THE ACTUAL STATE-LEVEL DEGREE OF INEQUALITY.

Notes: Average agreement with the statement that "The gap between the rich and the poor in India is too large" with 1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree by treatment group and degree of inequality in the respective state of residence. The degree of inequality is defined as the ratio between the income of the 90^{th} percentile and the median income.

J. Mechanism in the comparison treatments

To illustrate how the comparison treatments work, we study the mechanism through which they induce a change in perceived relative income. The two comparison households are described in a way that aims to unambiguously suggest placement of the respective household in the tail end of the income distribution. We, therefore, expect that the majority of respondents (even if they have a weak understanding of distributions in general) place the poor comparison household in the first three deciles and the rich comparison household in the last three deciles. Since the comparison household is almost certainly described as poorer (richer) than the respondent's own household, the comparison should induce respondents to place their own household above (below) the comparison household. Consequently, the average relative perception is expected to shift upwards (downwards), resulting in aggregate treatments effects like the ones observed in Figure 3 and Table 4.

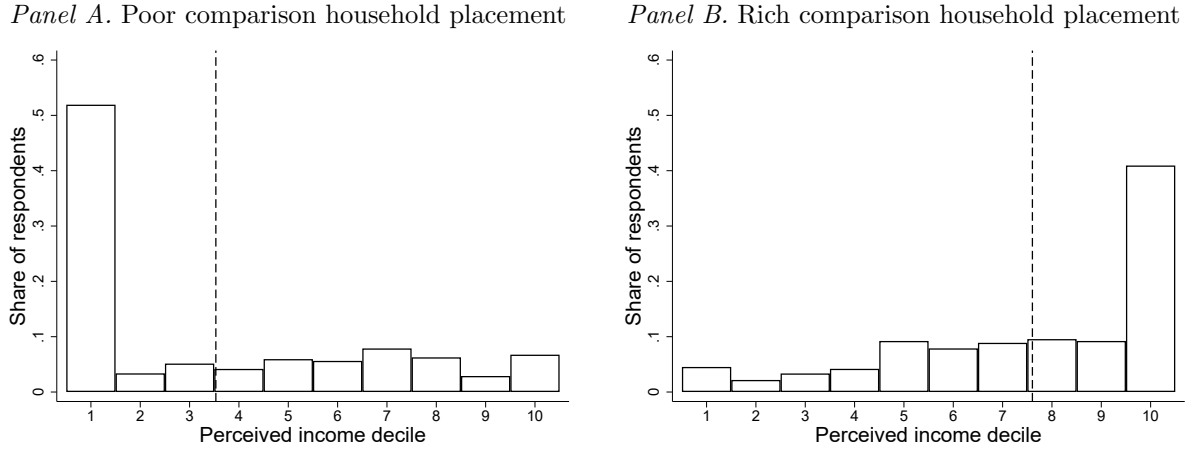


FIGURE A-10 – COMPARISON HOUSEHOLD PLACEMENT.

Notes: Histogram of the share of respondents that place the respective comparison household in each of the ten income deciles in the state specific income distribution for the poor comparison group (Panel A, $N = 622$) and the rich comparison group (Panel B, $N = 596$). Dashed lines indicate the average comparison household placement.

We find strong evidence for the described mechanism. First, the majority of respondents perceive the comparison household to belong to the respective tail end of the distribution, see Figure A-10. Here, we plot the share of respondents in each treatment that places the respective comparison household in each of the ten deciles of the state specific income distribution. In both treatments, the distribution of the comparison household placement is unimodal and strongly skewed away from the respective tail. Second, we find that only a small share of respondents in either treatment places their own household as being poorer than the poor comparison household (8.2%) or richer than the rich comparison household (10.6%). We interpret these shares of implausible placements of the comparison household or the respondent's own household either as a result of a flawed understanding of income distributions or as residual noise. For the vast majority of respondents, the treatments work as intended.