



Zero-Sum Views Reduce Support for Redistribution Across Borders

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AWI DISCUSSION PAPER SERIES NO. 767

November 2025

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November 11, 2025

Abstract

This paper provides causal evidence on how zero-sum beliefs shape support for cross-border redistribution and economic openness. We implement a pre-registered two-by-two experiment with a broadly representative sample of 2,116 UK adults. The first treatment primes participants to adopt stronger or weaker zero-sum mindsets in general social and economic interactions, without reference to redistribution. Inducing a stronger zero-sum mindset significantly reduces donations to international anti-poverty organizations and modestly lowers stated support for international redistribution, migration, and trade. The second treatment provides information about respondents' position in the global income distribution. Learning one's relative global advantage fully offsets the negative effects of zero-sum priming. These results demonstrate that zero-sum beliefs causally reduce support for global redistribution and openness, but that making relative global affluence salient can neutralize this effect. The findings highlight a belief-based channel through which economic narratives shape public attitudes toward globalization, offering new insight into the appeal of rising nationalist and protectionist rhetoric in high-income countries.

JEL classification: C83, C90, D31, Z10.

Keywords: Zero-sum Views; Global Redistribution; Global Income Rank.

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In recent years, nationalist and protectionist rhetoric has gained renewed prominence in political discourse across advanced democracies. From Brexit in the United Kingdom to America First in the United States, political movements increasingly frame international economic relations in zero-sum terms, portraying gains for other countries or groups as losses for the national interest (Chinoy et al., 2025; Ali, Mihm and Siga, 2025). Similar narratives have accompanied rising support for anti-immigration parties across Europe. These developments are particularly striking given that they follow decades in which political discourse emphasized globalization, free trade, and international cooperation as mutually beneficial. This rhetorical shift raises the question of whether zero-sum framings can be strategically employed to influence public support for specific policy agendas.

While prior research has mapped the origins and distribution of zero-sum beliefs (Ongis and Davidai, 2022; Carvalho et al., 2023; Chinoy et al., 2025), much less is known about their causal consequences. From a policy perspective, the central question is how holding a zero-sum worldview shapes support for nationalist and protectionist agendas versus policies favoring global redistribution and openness (Davidai and Ongis, 2019). Existing evidence is largely correlational. For example, Chinoy et al. (2025) show that stronger zero-sum mindsets are associated with greater support for government redistribution, race- and gender-based affirmative action, and more restrictive immigration policies. The heterogeneity in these associations, and their contrast with the aims of contemporary zero-sum political rhetoric, highlights the need to establish whether zero-sum beliefs causally shape policy preferences or instead reflect broader ideological orientations or personal experiences.

This paper aims to causally identify how zero-sum beliefs influence support for global redistribution. To guide the analysis, we present a stylized theoretical framework in which individuals derive utility from both private consumption and contributing to global redistribution. A key feature of our framework is that the weight placed on redistribution depends not only on social preferences, but also on the individual’s belief that the world is zero-sum. Changes in such beliefs may shift how individuals evaluate redistribution, an effect we seek to estimate empirically. Because zero-sum beliefs are inherently about relative positions and outcomes, we expect their role in shaping redistribution preferences to depend on relative income status, both actual and perceived. Motivated by this connection, and by a growing literature showing how relative income perceptions influence preferences for redistribution (Kuziemko et al., 2015; Karadja, Mollerstrom and Seim, 2017; Fehr, Mollerstrom and Perez-Truglia, 2022; Hauser, 2023; Hvidberg, Kreiner and Stantcheva, 2023), we extend the model to characterize how an individual’s global income rank could moderate the influence of zero-sum beliefs and to motivate estimation of the relevant interaction effect.

To empirically assess the relationships characterized in the model, we conduct a survey experiment with a broadly nationally representative sample of 2,116 UK adults, matched to the population on age, gender, and ethnicity. The design features two randomized treatments in a 2-by-2 factorial structure. The first treatment primes participants to adopt either a zero-sum or a positive-sum perspective by asking them to reflect on a past personal experience involving eco-

conomic or professional advancement, where success came either at the expense of others or where all parties benefited. In addition, participants completed three role-based scenarios designed to reinforce either zero-sum or positive-sum reasoning. Importantly, the treatment does not reference redistribution, or inequality, but instead aims to activate general beliefs about the nature of economic exchange. The second treatment provides information about the respondent’s household position in the global income distribution.

We assess effects on both behavioral and attitudinal measures of global redistribution and openness. The behavioral outcome is whether respondents contributed part of their participation fee to an international anti-poverty organization and the amount contributed. Attitudinal outcomes capture support for international redistribution, trade, globalization, and migration. While these domains may appear zero-sum, given the distinct roles that countries occupy in such interactions, the empirical evidence shows they are positive-sum. Redistribution across countries increases aggregate welfare because one unit of income generates greater utility in poorer than in richer households. In addition, aid can generate long-run gains by improving human capital (Mishra and Newhouse, 2009; Kazianga et al., 2013; Cavalcanti et al., 2025), strengthening political stability (Steinwand, 2015), and fostering economic growth where institutions are strong (Burnside and Dollar, 2000; Clemens et al., 2012; Arndt, Jones and Tarp, 2016; Easterly and Pfutze, 2008). Donor countries may also benefit indirectly, for example through expanded trade and political influence (Wagner, 2003; Kuziemko and Werker, 2006; Dreher et al., 2022). Migration similarly produces large gains for both sending and receiving countries, with estimates suggesting that removing barriers could increase world GDP by a substantial margin (Razin and Sadka, 2000; Clemens, 2011). Trade and globalization are likewise positive-sum, with liberalization consistently associated with higher growth and poverty reduction in developing economies (Dollar and Kraay, 2004; Wacziarg and Welch, 2008; Frankel and Romer, 2017; Feyrer, 2019).

We show that the zero-sum priming successfully shifted respondents’ measured beliefs. The zero-sum belief index increased on average by 0.25 standard deviations in the high zero-sum condition compared to the low zero-sum condition, while general views about luck and effort remained unaffected. The manipulation produced a uniform shift across respondents, with no systematic variation by demographic or attitudinal subgroup. Moreover, while the treatment altered the overall level of the zero-sum belief index, it left its correlation with individual characteristics such as age, gender, income, and political orientation largely unchanged. Taken together, these findings show that the treatment systematically shifted zero-sum beliefs across the population, providing a methodological contribution to the field.

We find that inducing stronger zero-sum views significantly reduces support for global redistribution. Participants assigned to the high zero-sum treatment are less likely to make real-stakes contributions to international anti-poverty organizations, and their stated support for redistribution, migration, and international economic cooperation also declines, albeit marginally. Providing information about respondents’ global income rank offsets these effects. Since the UK sample is relatively affluent by global standards, and the large majority of participants underestimated their rank, most respondents learned that they were richer than they had believed.

Making this relative global advantage salient appears to counteract the exclusionary logic of zero-sum thinking.

We complement the main analysis with exploratory heterogeneity tests using causal forests. Diagnostic tests indicate that both treatments operate uniformly across respondents: the zero-sum treatment reduces contributions to redistribution, while information about global income rank uniformly offsets these effects. Some descriptive patterns suggest stronger treatment responses among centrist and right-leaning respondents, and among those who learned they were in the top global income deciles.

These findings carry important policy implications in an increasingly polarized global landscape. Contemporary nationalist movements in the United States and parts of Europe frequently invoke zero-sum narratives that frame international relations as competitive and justify protectionist agendas. Such rhetoric resonates with voters and has been linked to recent policy shifts in the United States, including sharp reductions in international aid commitments and the imposition of higher trade tariffs. Our results show that activating zero-sum beliefs reduces support for global redistribution and that the effects are broadly homogeneous across the population. This helps explain why zero-sum messages are politically effective, especially in contexts where citizens are not aware of the positive-sum nature of global redistribution and are easily drawn to fixed-pie narratives. At the same time, we find that highlighting individuals' relatively advantaged position in the global income distribution, which applies to most citizens in high-income countries, offsets the negative impact of zero-sum thinking. Emphasizing relative global affluence may help sustain public support for international redistribution in the face of rising protectionist sentiment.

We make several contributions to the literature. First, we combine correlational and experimental evidence to study the relationship between zero-sum views and support for global redistribution. In cross-sectional data, we replicate the positive association between zero-sum views and stated redistribution preferences documented by [Chinoy et al. \(2025\)](#) for the United States. However, our experimental design shows that exogenously increasing zero-sum views significantly reduces revealed support for redistribution, measured through real donations to anti-poverty NGOs, and marginally lowers stated preferences for redistribution, migration, and economic cooperation. This divergence underscores the importance of distinguishing between correlational and causal relationships, and it calls into question the interpretation in [Chinoy et al. \(2025\)](#) that individuals with zero-sum views support redistribution as a way to correct a distorted system. Our findings instead suggest that activating a zero-sum mindset may reduce support for redistribution by heightening perceptions that resources are constrained and that redistribution benefits recipients at the expense of those providing it.

Our results relate to the theoretical framework of [Gavrillets and Seabright \(2025\)](#), who model how zero-sum and positive-sum worldviews persist or change depending on environmental conditions, peer influence, and authority interventions. In their model, individuals with a zero-sum worldview invest more in competition, while those with a positive-sum worldview invest more in cooperation. Our experiment provides empirical evidence for one of their mechanisms by show-

ing that increasing the salience of a zero-sum worldview reduces cooperative behavior toward out-groups.

Our study also relates to [Strang and Schaubé \(2025\)](#), who examine how structural features of the economic environment influence redistribution preferences. In a survey experiment, they present participants acting as third-party spectators with vignettes describing different bonus allocation schemes, some of which are explicitly zero-sum. Spectators are then asked to redistribute bonuses between two other individuals. The authors find that spectators allocate more to the disadvantaged party when the bonus structure is zero-sum. While both studies explore the role of zero-sum framing in shaping redistributive behavior, [Strang and Schaubé \(2025\)](#) differs from our design in two important ways. Their experiment elicits redistribution preferences from impartial spectators, rather than individuals deciding whether to give from their own resources. They also use a within-subject design and measure zero-sum beliefs at the end of the experiment, assuming that exposure to the hypothetical scenarios does not influence those beliefs.

Second, our paper relates to the literature on the formation and variability of zero-sum beliefs in the population. Two strands of research stand out. The first emphasizes the deep-rooted nature of such beliefs, linking them to personal and ancestral experiences. These studies show that zero-sum thinking is more prevalent among individuals with competitive educational backgrounds or family histories of hardship and exclusion ([Chinoy et al., 2025](#)), and is more likely to emerge in contexts of perceived scarcity, such as economic downturns ([Sirola and Pitesa, 2017](#)). Zero-sum beliefs are also correlated with psychological traits such as envy or a diminished regard for merit ([Carvalho et al., 2023](#)). A second line of work highlights the strategic malleability of zero-sum beliefs in political and economic contexts ([Davidai and Ongis, 2019](#)). For instance, voters may adopt zero-sum reasoning around elections, rejecting policies supported by rival groups due to adverse inference under asymmetric information ([Ali, Mihm and Siga, 2025](#)). Relatedly, [Roberts and Davidai \(2022\)](#) shows that zero-sum thinking is asymmetric: individuals are more likely to perceive others’ gains as personal losses than to see their own gains as harmful to others. This asymmetry reflects a form of motivated reasoning, suggesting that zero-sum beliefs can be selectively applied depending on political or social alignment. Our contribution is to show that zero-sum beliefs are both temporarily shiftable and behaviorally consequential. Brief primes that activate zero-sum thinking reduce support for global redistribution, indicating that even brief activation of such beliefs can meaningfully influence policy preferences.

Third, we contribute to a growing literature showing that preferences for redistribution are shaped not only by material self-interest but also by beliefs and perceptions that can be influenced. Prior research emphasizes the importance of fairness concerns, beliefs about poverty and mobility, and political or social identity in shaping redistributive preferences (e.g., [Fehr and Schmidt, 1999](#); [Fong, 2001](#); [Alesina and La Ferrara, 2005](#); [Alesina and Giuliano, 2011](#)). More recent work shows that exposure to information, such as inequality levels or one’s position in the income distribution, can shift attitudes toward redistribution ([Kuziemko et al., 2015](#); [Karadja, Mollerstrom and Seim, 2017](#); [Hauser, 2023](#); [Hvidberg, Kreiner and Stantcheva, 2023](#)).

While most of this literature focuses on perceptions of national income rank and their effects on support for domestic redistribution, relatively few studies examine the global context. [Nair \(2018\)](#) finds that correcting downward misperceptions about one’s global income position increases support for global redistribution in a representative U.S. sample, whereas [Fehr, Mollerstrom and Perez-Truglia \(2022\)](#) finds no significant effects in a representative German sample. We contribute to this emerging literature by showing that perceived global income rank moderates the impact of zero-sum beliefs on preferences for global redistribution in a UK sample.

I. Theoretical Framework

We develop a stylized theoretical framework to motivate our empirical analysis of how zero-sum beliefs shape preferences for global redistribution. Our model builds on behavioral approaches to social preferences that allow for non-material utility from giving, such as warm-glow motives ([Andreoni, 1989](#)) and other-regarding preferences ([Fehr and Schmidt, 1999](#)). As in this literature, we allow social preferences to be fixed and heterogeneous across individuals. In addition, we introduce a belief-based source of heterogeneity: the individual’s zero-sum worldview. The model first illustrates how zero-sum beliefs may influence individual preferences for global redistribution. We then extend the framework to incorporate the salience of global income rank as a potential moderator of this relationship.

Zero-sum views and global redistribution. Consider a static setting in which individual i derives utility from two sources: private consumption and support for global redistribution. The individual earns income y_i and decides how much to contribute, $d_i \in [0, y_i]$, to redistribution activities, such as charitable donations or support for international transfer policies. Private consumption is given by $c_i = y_i - d_i$.

The individual’s utility is given by

$$U_i = u(c_i) + v(d_i; \delta_i, z_i), \quad (1)$$

where $u(\cdot)$ and $v(\cdot)$ represent the utility components from private consumption and redistribution, respectively. The function $u(c_i)$ satisfies the standard properties $u_c > 0$ and $u_{cc} < 0$, reflecting diminishing marginal utility of consumption. The function $v(d_i; \delta_i, z_i)$ captures the (possibly non-material) satisfaction derived from redistribution and is increasing and concave in the amount contributed: $v_d > 0$, $v_{dd} < 0$.

Two parameters characterize heterogeneity in motives for redistribution. The first, $\delta_i \in [0, 1]$, reflects the individual’s identification with, or moral concern for, distant others. This parameter captures a form of social preference in line with models of other-regarding utility (e.g., [Fehr and Schmidt, 1999](#); [Andreoni, 1990](#)). Higher values of δ_i increase the marginal utility of giving, $v_{d\delta} > 0$.

The second parameter, $z_i \in [0, 1]$, measures the strength of the individual’s zero-sum world-

view, *i.e.*, the belief that economic interactions are inherently competitive, so that one person’s gain necessarily comes at others’ expense. Unlike δ_i , which captures social preferences, z_i reflects a belief about how the economic environment operates, specifically whether economic interactions are perceived as zero-sum or mutually beneficial.¹ Stronger zero-sum beliefs may heighten perceptions of unfair disadvantage among the poor, leading individuals to view redistribution as a means of correcting inequitable gains by the rich (Chinoy et al., 2025). In contrast, if such beliefs cause individuals to perceive redistribution itself as a zero-sum trade-off, where helping others necessarily entails a personal loss (Chernyak-Hai and Davidai, 2022), they will derive less utility from giving and therefore display weaker support for redistribution. Accordingly, the sign of v_{dz} is theoretically ambiguous.

The individual chooses d_i to maximize Equation (1), subject to the budget constraint $c_i = y_i - d_i$. The first-order condition for an interior solution is

$$u_c(y_i - d_i) = v_d(d_i; \delta_i, z_i). \quad (2)$$

The second-order condition for a maximum is satisfied given $u_{cc} < 0$ and $v_{dd} < 0$.

Differentiating the first-order condition with respect to z_i yields

$$\frac{\partial d_i^*}{\partial z_i} = - \frac{v_{dz}(d_i; \delta_i, z_i)}{u_{cc}(y_i - d_i) + v_{dd}(d_i; \delta_i, z_i)}. \quad (3)$$

Under the maintained assumptions, the denominator is negative, so

$$\text{sign}\left(\frac{\partial d_i^*}{\partial z_i}\right) = \text{sign}(v_{dz}(d_i; \delta_i, z_i)).$$

Equation (3) implies that the effect of zero-sum beliefs on preferred redistribution is theoretically indeterminate: it depends on the sign of v_{dz} . If stronger zero-sum beliefs increase the marginal utility of giving ($v_{dz} > 0$), individuals give more; if they reduce it ($v_{dz} < 0$), individuals give less. Our experimental design provides a direct empirical test of this relationship by estimating the sign and magnitude of $\frac{\partial d_i^*}{\partial z_i}$ in a broadly representative UK sample.

Moderating role of global advantage salience. We next extend the model to account for the salience of individuals’ relative advantage in the global income distribution. Let $s_i \in [0, 1]$ denote the degree to which individual i is aware of their favorable global position, where higher values indicate greater salience of being relatively advantaged. This specification recognizes that individuals in high-income countries may vary in how much they consider their global standing, and that making this advantage more salient can shape how they evaluate international

¹The function $v(d_i; \delta_i, z_i)$ allows both social preferences and beliefs to jointly shape the utility derived from redistribution. We interpret δ_i and z_i as distinct dimensions of heterogeneity. While in reality the two could be correlated, the model abstracts from their joint distribution and focuses on how each dimension independently affects the marginal utility of giving. We do not take a stance on which factor is more influential in determining redistribution preferences. Our analysis centers on the marginal effect of zero-sum beliefs, $\partial d_i^* / \partial z_i$, treating δ_i as fixed.

redistribution.

We allow the utility derived from redistribution to vary with s_i by extending the giving component of utility to

$$v(d_i; \delta_i, z_i, s_i),$$

where, as before, δ_i denotes social preferences and z_i represents beliefs about the structure of economic interactions. The salience parameter s_i does not modify δ_i or z_i themselves; rather, it enters the utility function directly, scaling the marginal utility derived from redistribution.² In this formulation, s_i operates as a contextual modifier: making one’s global advantage more salient increases the psychological and moral weight attached to distributive concerns, thereby amplifying or attenuating the behavioral expression of existing preferences and beliefs without altering their intrinsic levels.

In our experimental setting, participants are randomly assigned to receive, or not receive, information about their position in the global income distribution. Since the sample consists of UK respondents, this information typically increases the salience of their relative global advantage, or equivalently, the relative disadvantage of others. Prior evidence on the behavioral effects of such rank information is mixed: [Fehr, Mollerstrom and Perez-Truglia \(2022\)](#) find no significant response to global rank information in Germany, whereas [Nair \(2018\)](#) report a sizable positive effect in the United States.

In our design, however, the salience manipulation follows an earlier treatment that experimentally varies zero-sum beliefs. Consequently, we cannot separately identify $\frac{\partial d_i^*}{\partial s_i}$. Instead, we examine the moderating role of global advantage salience in shaping how zero-sum beliefs influence redistribution preferences, captured by the cross-partial derivative $\frac{\partial^2 d_i^*}{\partial z_i \partial s_i}$. Since the direct effect of zero-sum beliefs on redistribution is itself theoretically indeterminate, the sign of this interaction is likewise ambiguous: greater salience of global advantage may attenuate the influence of zero-sum reasoning by highlighting global inequality, thereby strengthening support for redistribution, or it may reinforce competitive interpretations of global income differences, thereby weakening it.

II. Materials and Methods

A. Survey Design

To examine how zero-sum beliefs shape responses to information about global income rank and influence support for global redistribution, we conducted a large-scale online survey experiment in the United Kingdom. The study was pre-registered on AsPredicted (ID #188268) and fielded in August 2024 using the Prolific platform. Participants completed an anonymous questionnaire hosted on Qualtrics. Each respondent received a fixed payment of £1 and a bonus between £0 and £1, depending on decisions made during the survey.

²In particular, treating social preference parameters as invariant to salience is consistent with models that view δ_i as a stable trait (e.g., [Fehr and Schmidt \(1999\)](#)) and with evidence that relative-income salience affects behavior without shifting underlying distributional preferences (e.g., [Hoy and Mager \(2021\)](#)).

The experiment was structured into seven sections: (A) an entry questionnaire eliciting demographic characteristics, including household income and perceived rank in the global income distribution; (B) a priming treatment designed to shift zero-sum views; (C) the measurement of zero-sum views; (D) an information treatment providing respondents with their actual position in the global income distribution based on World Bank data; (E) a real-stakes donation decision involving an international NGO targeting global poverty; (F) a battery of questions on stated preferences regarding global redistribution, international institutions, globalization, and migration; (G) questions on political orientation, followed by an attention check. The experimental variation across the four treatment conditions is presented in [Table 1](#).

TABLE 1 – OVERVIEW OF EXPERIMENTAL DESIGN BY TREATMENT CONDITION

Section	Low ZSV		High ZSV	
	No Rank Info	Rank Info	No Rank Info	Rank Info
A. Entry questionnaire	X	X	X	X
B. Zero-Sum Views Priming	X	X	X	X
Positive-sum condition (Low ZSV)	X	X		
Zero-sum condition (High ZSV)			X	X
C. Zero-Sum Views Elicitation	X	X	X	X
D. Income Rank Information		X		X
E. Donation Decision	X	X	X	X
F. Stated Support Questions	X	X	X	X
G. Political Views Elicitation	X	X	X	X

Notes: The table summarizes the structure of the survey and the assignment of treatment conditions across the four experimental groups. All participants completed the full questionnaire, with treatments varying across the zero-sum views priming (positive vs. zero-sum) and the provision of global income rank information.

Following informed consent and initial procedural checks, participants completed a baseline questionnaire (Section A) that collected demographic and socioeconomic information. This included age, gender, education level, employment status, household size, total household income before taxes, and a self-assessed estimate of their household’s position in the global income distribution, recorded on a 10-point decile scale.

Participants were then randomly assigned to one of four experimental conditions in a fully crossed 2-by-2 design. The first treatment (Section B) varied whether respondents received a priming intervention designed to increase zero-sum views (high ZSV) or a control condition intended to maintain low zero-sum views. In Section C, all participants answered a set of seven statements eliciting their views on economic zero-sum thinking, measured on a five-point Likert scale. These items were adapted from [Różycka-Tran, Boski and Wojciszke \(2015\)](#) (see Appendix [Table A-1](#) for the list of questions).

In Section D, the second treatment was introduced. Participants either received information about their actual position in the global income distribution based on World Bank data (Rank Info) or received no such information (No Rank Info). This design produced four experimental groups: (1) High ZSV + Rank Info, (2) High ZSV + No Rank Info, (3) Low ZSV + Rank Info, and (4) Low ZSV + No Rank Info; see [Table 1](#).

In Section E, participants made a donation decision involving four international NGOs working to reduce global inequality (Oxfam UK, Givedirectly, CARE International, and Concern Worldwide). Participants could also choose not to donate. Those who selected an NGO were then asked to allocate a £1 bonus between themselves and the chosen organization.

Section F elicited stated support for redistribution, globalization, and immigration using 10-point scale items, following the approach in [Fehr, Mollerstrom and Perez-Truglia \(2022\)](#). Finally, Section G included questions on participants’ voting behavior in the most recent UK general election and their views on Brexit.

B. Priming Zero-Sum Views

The first experimental treatment was designed to induce variation in zero-sum beliefs by activating either a zero-sum or a non-zero-sum mindset. Participants were randomly assigned to one of two conditions: a high zero-sum condition, intended to strengthen beliefs that one person’s gain implies another’s loss, or a low zero-sum condition, intended to reinforce the idea that success can be mutual and non-competitive.

Both conditions followed an identical structure to ensure comparability. First, participants responded to an open-ended priming prompt. In the high zero-sum condition, they were asked: “Please think about a time during your education or professional life when you strongly felt that in order for someone to succeed, someone else had to lose out.” In the low zero-sum condition, the prompt instead read: “Please think about a time during your education or professional life when you strongly felt that multiple people could succeed without negatively affecting each other.”

After the written reflection, participants completed three imagined role-based scenarios. The scenarios were closely matched across conditions in terms of topic and structure, but differed in the nature of the trade-offs. In the high zero-sum condition, participants faced situations where benefits to one actor necessarily came at a cost to others. In the low zero-sum condition, success was framed as compatible or jointly achievable. Scenarios covered (1) resource allocation in a community, (2) competition in a small technology firm, and (3) international trade.

This parallel design ensured that differences across conditions stemmed from the intended shift in the interpretation of social and economic interactions as either zero-sum or not, rather than from differences in complexity or engagement.

C. Global Income Rank Information Treatment

The second experimental treatment introduced variation in participants’ awareness of their household’s position in the global income distribution. Following random assignment in the 2-by-2 design, half of the participants were shown their actual income rank, based on household income data and World Bank estimates. The other half received no information.

This intervention builds on well-documented evidence that individuals often hold inaccurate beliefs about their relative income position, both within and across countries. Prior studies

show that providing income rank information can meaningfully shift these perceptions (Karadja, Mollerstrom and Seim, 2017; Hoy and Mager, 2021; Hvidberg, Kreiner and Stantcheva, 2023).

Participants in the information condition were shown a visual representation of the global income distribution divided into ten brackets, with accompanying explanatory text. Their estimated income decile according to the World Bank data was clearly marked to highlight their relative standing. An example of the information screen is shown in Figure 1.

On the following page, participants who received the information were asked to recall which income group their household belonged to, based on the previous screen. This recall question served as a check on immediate retention of the information. They were also asked to indicate whether the information surprised them, using a three-point scale ranging with the options “Not surprising,” “Neither surprising nor unsurprising,” to “Surprising.”

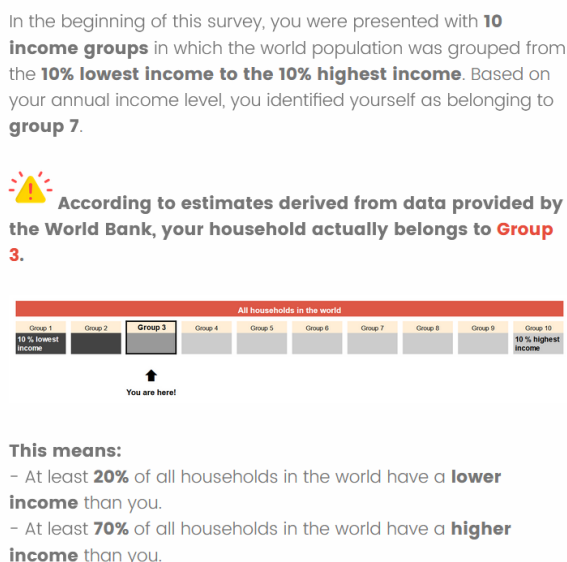


FIGURE 1 – Information Treatment

D. Data and Summary Statistics

We examine baseline characteristics across treatment groups in Table 2. The sample comprises 2,116 UK respondents, broadly representative of the national adult population with respect to age, gender, and ethnicity.³ The average respondent is 46.5 years old and ranks in the 8th decile of the global income distribution. On average, respondents place themselves in the 5th decile, substantially underestimating their relative position. Educational attainment, employment status, and political orientation show substantial heterogeneity. Balance tests indicate no statistically significant differences across treatment arms for any of the baseline covariates. This suggests that randomization was successful in generating comparable groups across both the

³Representativeness was ensured by the recruitment and quota-matching procedures implemented by the Prolific platform at the time of data collection.

zero-sum views and income rank information treatments.⁴

TABLE 2 – BASELINE SUMMARY STATISTICS AND BALANCE TESTS BY TREATMENT GROUP

	All	ZSV Treatment			Rank Info Treatment		
		Low ZSV	High ZSV	p-value	No Info	Info	p-value
Age	46.53	46.50	46.56	0.925	46.73	46.33	0.564
Female	0.51	0.52	0.51	0.544	0.52	0.51	0.753
Actual Income Rank	7.74	7.71	7.78	0.271	7.76	7.73	0.699
Perceived Income Rank	5.37	5.33	5.41	0.382	5.42	5.31	0.203
Bachelor's Degree	0.38	0.39	0.37	0.441	0.37	0.40	0.181
Master's Degree	0.19	0.18	0.20	0.143	0.19	0.18	0.541
Other Education	0.43	0.43	0.42	0.688	0.44	0.42	0.408
Employed	0.70	0.70	0.70	0.871	0.71	0.69	0.269
Unemployed	0.07	0.06	0.07	0.716	0.06	0.07	0.431
Not in Labor Force	0.23	0.24	0.23	0.698	0.23	0.24	0.463
Left-leaning	0.46	0.44	0.49	0.030	0.47	0.45	0.423
Center	0.10	0.11	0.08	0.017	0.09	0.10	0.493
Right-leaning	0.17	0.17	0.17	0.925	0.18	0.16	0.233
Undisclosed	0.26	0.27	0.26	0.446	0.25	0.28	0.143
Brexit Support	0.25	0.24	0.26	0.326	0.25	0.24	0.581
Brexit Opposition	0.72	0.72	0.72	0.826	0.72	0.72	0.942
Brexit No Answer	0.03	0.04	0.03	0.075	0.03	0.04	0.138
Observations	2,116	1,059	1,057		1,050	1,066	

Notes: This table reports baseline summary statistics and balance tests by treatment assignment. Column 1 shows the overall mean for the full sample. Columns 2–4 report means by assignment to the zero-sum views (ZSV) priming treatment, with Column 4 reporting p -values from two-sided t -tests comparing the Low ZSV and High ZSV groups. Columns 5–7 report means by assignment to the income rank information treatment, with Column 7 showing p -values from two-sided t -tests comparing the No Info and Info groups. All political and Brexit variables are binary indicators.

⁴The quality of answers was ensured by the quality control measures of Prolific and Qualtrics and several measures within the survey. Two attention checks, one towards the middle and one towards the end and a voluntary statement on attention paid ensured data quality. Participants were also filtered based on their answers in the open text question and their performance in a check for automated answers in which they had to match their previously given age to an age group at the end of the survey. As pre-registered, we also dropped participants who finished in less than 180 seconds.

III. Zero-sum Views and Redistribution Preferences

This section reports the main empirical findings from the zero-sum framing experiment. We begin by testing whether the manipulation successfully shifted participants’ zero-sum beliefs as intended. We then document the cross-sectional relationship between zero-sum beliefs and preferences for global redistribution. Finally, we exploit the experimental variation in zero-sum beliefs as an exogenous source of identifying variation to test whether the observed correlation reflects a causal effect on redistribution preferences.

A. Manipulation Check of Zero-Sum Views

To assess whether the zero-sum treatment shifted beliefs as intended, we elicited a standardized index of general zero-sum views immediately after the first treatment. Both the treatment and the index items address zero-sum thinking in a broad economic sense and do not frame redistribution itself as a zero-sum game. This was an intentional design choice to target a general worldview rather than prime redistribution attitudes directly, allowing us to test whether such beliefs causally affect redistribution preferences. The index is based on responses to six Likert-scale items (see Appendix Table A-1 for wording and coding) and was constructed by averaging standardized scores, with higher values indicating stronger zero-sum beliefs. As responses were collected prior to the second treatment, the analysis uses the full sample of respondents ($N = 2,116$).

Figure 2 displays the kernel density estimates of the index by treatment group, with the distribution for the *low zero-sum views* condition shown in light gray and the *high zero-sum views* condition in light blue. The figure shows a clear rightward shift in the distribution under the high zero-sum views treatment, indicating stronger endorsement of zero-sum beliefs. The mean of the index in the low zero-sum views group is approximately zero by construction, while the high zero-sum group exhibits a mean increase of 0.25 standard deviations.⁵ A two-sample t -test confirms that this difference is statistically significant ($t = 8.86$, $p < 0.001$), and a Mann-Whitney rank-sum test yields consistent results ($z = 8.85$, $p < 0.001$). These findings confirm that the treatment successfully shifted beliefs in the intended direction.

As a further check, we also asked participants to place themselves on a 1–10 scale ranging from “everything in life is determined by fate” to “people shape their fate themselves.” Responses were standardized using the mean and standard deviation of the low zero-sum views group. We find no significant treatment effect on this item ($p = 0.62$ in both the t -test and the rank-sum test; $N = 2,116$), suggesting that the zero-sum treatment did not shift broader beliefs about fate or personal control. This supports the interpretation that the manipulation specifically increased beliefs that economic outcomes are zero-sum, rather than altering general views about agency in life. Consistent with this, we find a modest negative association between the zero-sum index and the fate/control measure in both treatment conditions: in the low zero-sum

⁵Notably, the mean of the raw index in the low zero-sum group is 3.05 on a five-point scale, indicating that participants lean modestly toward zero-sum views even when primed to think of positive-sum situations.

group, the effect of a one-standard-deviation increase in personal control beliefs is associated with a 0.14 standard deviation decrease in zero-sum views ($p < 0.001$); in the high zero-sum group, the corresponding decrease is 0.10 standard deviations ($p < 0.001$). This pattern is in line with findings by [Carvalho et al. \(2023\)](#), who show that zero-sum beliefs are negatively correlated with individual agency and perceptions of personal control.

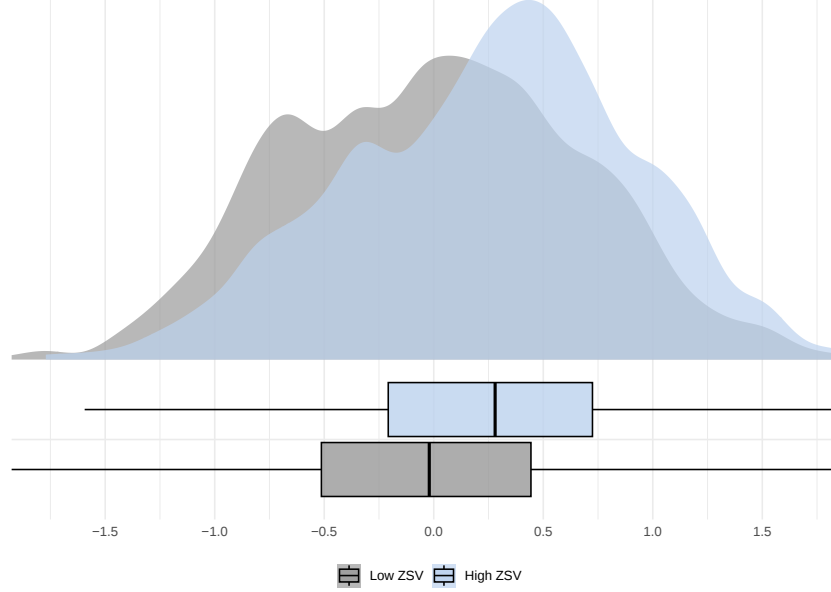


FIGURE 2 – Distribution of the zero-sum views index by treatment group.

Notes: The figure presents the estimated kernel densities of the distributions of zero-sum views, as measured by the standardized index of participants’ answers to the 6-item questionnaire adapted from [Różycka-Tran et al. \(2018\)](#). Two distributions are presented, where light gray corresponds to the low zero-sum views group and light blue corresponds to the high zero-sum views group. See Appendix [Table A-1](#) for variable definitions.

Sentiment Analysis. To probe how the priming task may have shaped respondents’ emotional and cognitive framing, we analyze the sentiment of their open-ended narrative responses. As shown in Appendix [1](#), participants in the high zero-sum condition used significantly more negative language than those in the low zero-sum condition, suggesting that the manipulation activated a more adversarial or competitive mindset.

Heterogeneity in Responsiveness to the Zero-Sum Manipulation. To assess whether responsiveness to the manipulation varied across subgroups, we begin by comparing mean values of the zero-sum views index across a rich set of covariates, separately for respondents in the low and high zero-sum treatment groups: age, gender, education, employment status, actual and perceived global income rank, political leaning, and Brexit support. [Figure 4](#) summarizes these comparisons with mean values and 95% confidence intervals. Two findings stand out. First, the ZSV index is consistently higher in the high zero-sum group than in the low zero-sum group across all characteristics, indicating that the treatment shifted views broadly rather than being confined to specific subgroups. Second, we observe systematic variation in baseline zero-sum

views across demographics. Younger respondents and those identifying as left-leaning report higher scores, with progressively lower scores among centrists and right-leaning individuals, a pattern consistent with the results of [Chinoy et al. \(2025\)](#) for the United States. The index shows little difference by gender or education, but declines with both actual and perceived global income rank, with higher-ranked individuals expressing weaker zero-sum views. It is also lower among respondents who supported Brexit. Importantly, these patterns are similar across treatment arms, suggesting that the manipulation shifted the overall level of the index while leaving its correlation with individual characteristics largely unchanged.

Building on these descriptive comparisons, we next adopt the data-driven approach of [Chernozhukov, Fernández-Val and Luo \(2018\)](#). Specifically, we compute sorted effects, defined as estimated partial treatment effects ranked by magnitude, using the zero-sum score as the outcome, treatment assignment as the regressor of interest, and controlling for age, gender, prior beliefs and actual global income rank, education, employment status, and political affiliation. [Figure 3](#) plots the Average Partial Effect (APE) together with the Sorted Partial Effects (SPE) and their confidence intervals. The bias-corrected APE is 0.254, with a 90% confidence interval of [0.208, 0.299]. The confidence bands of the SPE closely overlap with those of the APE across the distribution, indicating that the treatment effect is stable across respondents and providing no evidence of heterogeneity.

To assess robustness, we estimate a causal forest ([Wager and Athey, 2018](#)), replicating the specification with the same outcome, treatment, and covariates. The causal forest yields an average treatment effect of 0.256 standard deviations ($p < 0.001$), with predictions tightly bounded between 0.248 and 0.265. Diagnostic tests confirm a precisely estimated average effect ($t = 9.59$, $p < 0.001$) and no evidence of heterogeneous treatment effects (differential prediction test, $t = -10.88$, $p \approx 1$).

Overall, the evidence indicates that the manipulation shifted zero-sum views uniformly across respondents, with no systematic variation by subgroup.

B. Correlation between Zero-Sum Views and Preferences for Global Redistribution

Before turning to the causal effects of zero-sum views on preferences for redistribution and economic openness, we first examine correlations. [Figure 5](#) reports point estimates and 95% confidence intervals from separate regressions of each outcome on the standardized Zero-Sum Index, controlling for age, gender, education, employment status, political ideology, and both actual and perceived global income decile. The analysis is restricted to participants who were not exposed to the global income rank treatment ($N = 1,050$). Estimates are shown separately for respondents in the Low zero-sum (gray markers) and High zero-sum (blue markers) treatment conditions, allowing comparison of conditional associations across the two groups.

Stronger zero-sum views are positively and significantly associated with stated support for global redistribution, including the creation of an international organization to redistribute

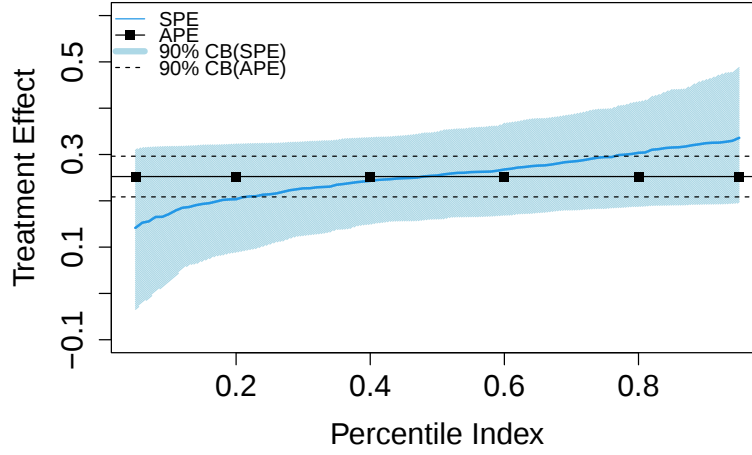


FIGURE 3 – INDIVIDUAL-LEVEL TREATMENT EFFECTS ON ZERO-SUM VIEWS SCORES.

Notes: This figure displays estimates of the average partial effect (APE) and sorted partial effects (SPE) of the high zero-sum treatment on zero-sum belief scores, along with 90% confidence bands. Estimates are based on 500 bootstrap replications. The procedure follows [Chen et al. \(2020\)](#).

income or resources between countries, as well as with support for greater globalization. These patterns closely mirror those documented by [Chinoy et al. \(2025\)](#) in the United States. In contrast to [Chinoy et al. \(2025\)](#), who find a negative relationship with preferences for migration, our estimates reveal no statistically or substantively meaningful association; the coefficients are positive and close to zero. When aggregating all five outcomes, consisting of actual donations to anti-global poverty NGOs and the four stated preference measures, into a standardized composite index, the correlation is positive and statistically significant. Nevertheless, revealed preferences for redistribution, as measured by these donations, show no meaningful relationship with zero-sum views. These results are qualitatively similar in both the low and high zero-sum treatment groups.

Taken together, the results indicate that stronger zero-sum views are systematically associated with more favorable stated preferences for redistribution and economic openness, but not with revealed redistribution behavior. These associations are consistent across treatment groups and broadly align with the patterns documented by [Chinoy et al. \(2025\)](#), who interpret such patterns as suggesting that individuals with stronger zero-sum views may favor redistribution as a counterbalancing force to perceived zero-sum dynamics. In the next section, we exploit the experimental variation between the Low and High zero-sum conditions to assess whether these associations reflect causal relationships and whether this interpretation holds in our context.

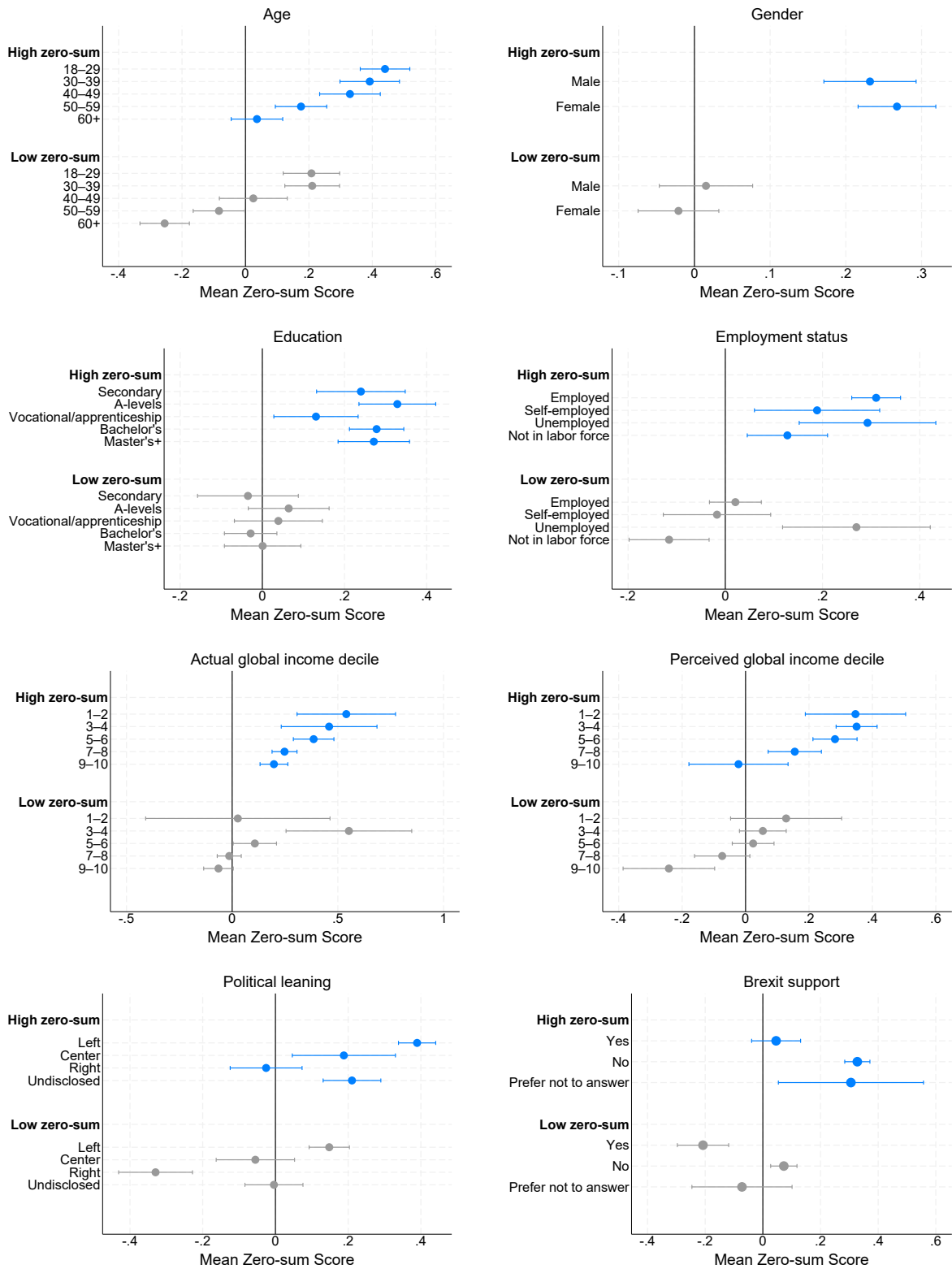


FIGURE 4 – MEAN ZERO-SUM INDEX BY DEMOGRAPHIC GROUP.

Notes: The Zero-Sum Index is standardized using the mean and standard deviation of the Low zero-sum treatment group, so values are expressed in standard deviation units relative to that group (mean = 0 by construction). Markers show means for each demographic category; whiskers indicate 95% confidence intervals based on the standard error of the mean. Results are presented separately for the Low and High zero-sum treatments. Sample: 2,116 UK adults.

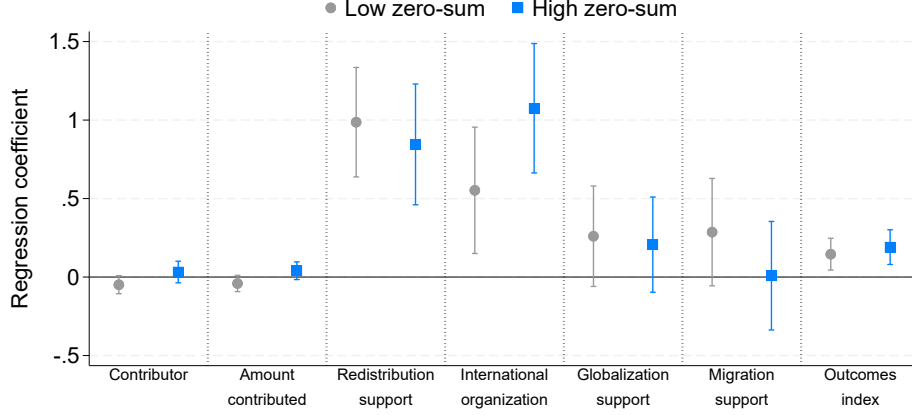


FIGURE 5 – CONDITIONAL CORRELATIONS BETWEEN ZERO-SUM INDEX AND OUTCOMES, BY LOW AND HIGH ZERO-SUM TREATMENT CONDITIONS.

Notes: The figure shows estimated coefficients from separate regressions of each outcome on the standardized Zero-Sum Index, controlling for age, gender, education, employment status, political ideology, and both actual and perceived global income decile. The index is standardized using the mean and standard deviation of the Low zero-sum treatment group. Gray markers indicate estimates for respondents in the Low zero-sum condition; blue markers indicate estimates for those in the High zero-sum condition. Whiskers denote 95% confidence intervals based on robust standard errors. The sample is restricted to participants not exposed to the global income rank treatment ($N = 1,050$). See Appendix Table A-1 for variable definitions.

C. Causal Effects of Zero-Sum Views on Preferences for Global Redistribution

We now estimate the causal effects of zero-sum views on preferences for redistribution. Respondents were randomly assigned to the low or high zero-sum condition, generating exogenous variation in the Zero-Sum Index. While the correlations documented above already control for observable characteristics such as age, gender, education, employment status, political leaning, and actual and perceived global income decile, the experimental design also eliminates bias from unobserved confounders and reverse causality, allowing for a clean causal interpretation.

C.1 Real-Stakes Contributions to Global Redistribution

We begin by examining whether priming individuals to adopt stronger zero-sum views affects their willingness to engage in global redistribution through real-stake contributions. As described in Section II, participants received a £1 bonus and decided whether, and to what extent, to share it with one of four international anti-poverty NGOs. We analyze both likelihood of contributing a positive amount and the average amount contributed, calculated across all participants.

Figure 6 provides a visual summary of these outcomes by treatment condition. Formal tests show that the share of contributors is significantly lower in the high zero-sum condition (76.2%) compared to the low zero-sum condition (83.0%), a difference of 6.8 percentage points (Fisher’s exact $p = 0.007$). By contrast, the amount contributed is not significantly different across treatments. The mean contribution is slightly lower in the high zero-sum condition, but the difference is small in magnitude and statistically insignificant (Mann–Whitney $p = 0.164$).

We next estimate average treatment effects using OLS regressions with controls for age,

gender, education, political affiliation, and employment status. Appendix [Table A-2](#) reports corresponding p - and q -values, with the latter adjusted for multiple hypothesis testing using the Benjamini–Hochberg procedure ([Anderson, 2008](#)). Results, shown in Columns 1 and 2 of [Table 3](#), confirm the findings from the descriptive tests. Participants in the high zero-sum condition are 6.8 percentage points less likely to contribute ($p = 0.006$, $q = 0.038$), relative to a baseline contribution rate of 83 percent in the low zero-sum group, equivalent to an 8.2 percent decline in the likelihood of giving.

Column 2 reports treatment effects on the average contribution amount, including non-donors. The estimated effect is negative but small and statistically insignificant ($p = 0.263$, $q = 0.458$). This pattern suggests that the main channel through which zero-sum priming reduces giving operates at the extensive margin: it affects the decision to contribute at all, rather than the conditional amount given.⁶

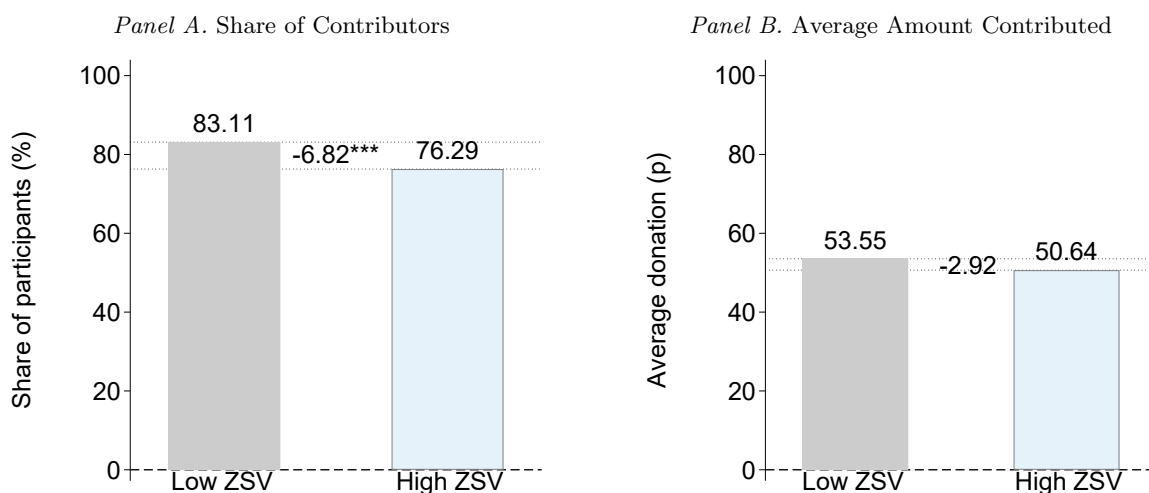


FIGURE 6 – ZERO-SUM VIEWS AND CONTRIBUTIONS TO ANTI-POVERTY NGOS.

Notes: The figure plots the share of participants that contribute to the international anti-poverty NGOs (Panel A) and the average amount contributed in pence GBP (Panel B). The figure uses only observations from participants that were not informed about their rank in the global income distribution ($N = 1,050$). See Appendix [Table A-1](#) for variable definitions.

C.2 Stated Preferences

Columns 3 to 6 of [Table 3](#) examine the effect of zero-sum views on stated preferences for global redistribution, international institutions, globalization, and migration. While none of the estimates are statistically significant at conventional levels, all four are negative and align with the pattern observed for real-stakes donations. Specifically, participants primed with high zero-sum views express lower stated support for global income redistribution, weaker endorsement

⁶Appendix [Figure A-4](#) plots the distribution of contributions and NGO choices by treatment condition. Contributions cluster at 0, 20, 50, and 100 pence. Relative to the low zero-sum condition, the high zero-sum treatment is associated with a higher share of non-donors and fewer small contributions, while the share donating the full 100 pence remains similar. The treatment also appears to reduce the likelihood of selecting most NGOs, with the exception of GiveDirectly, which was the most frequently chosen NGO overall and shows broadly comparable contribution patterns across conditions.

TABLE 3 – EFFECTS OF INCREASING ZERO-SUM VIEWS ON GLOBAL REDISTRIBUTION PREFERENCES AND ECONOMIC OPENNESS.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum treatment	-0.068*** (0.025)	-0.026 (0.023)	-0.150 (0.149)	-0.179 (0.160)	-0.185 (0.117)	-0.116 (0.136)	-0.066* (0.040)
Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050
LZS Mean	0.830	0.540	5.870	5.970	6.920	4.900	0.000

Notes: Each column reports estimates from a separate OLS regression of the outcome variable on an indicator for assignment to the zero-sum belief treatment. The sample is restricted to respondents who were not shown their position in the global income distribution ($N = 1,050$). All regressions include controls for age, gender, education, political party, and employment status. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive contribution to an international anti-poverty organization. The reported values correspond to the mean of this indicator (the share of contributors). Average amount contributed is measured in GBP and includes both contributors and non-contributors. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: amount contributed to NGOs and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Appendix [Table A-2](#) reports the corresponding p-values and q-values adjusted for multiple hypothesis testing using the Benjamini–Hochberg procedure, following [Anderson \(2008\)](#).

of a new international organization to reduce global inequality, less favorable attitudes toward globalization, and more restrictive preferences on migration from poorer countries. Effect sizes range from 2.4 to 3 percent relative to group means.

As a complementary analysis and an alternative approach to correcting for multiple hypothesis testing, we construct a composite index by averaging five standardized outcomes: the amount contributed and the four stated preference measures (see [Kling, Liebman and Katz, 2007](#)). The index shows good internal consistency (Cronbach’s = 0.75), indicating that the items capture a common underlying dimension of support for international redistribution and related global policies. By aggregating correlated outcomes, the index reduces measurement noise and increases the precision of estimated treatment effects. The average treatment effect on this index is reported in Column 7 of [Table 3](#), showing a decline of 0.066 standard deviations ($p = 0.099$), providing additional marginal evidence that stronger zero-sum beliefs are associated with lower support for global redistribution and international economic openness.

C.3 Instrumental Variables Analysis

To estimate the causal effect of zero-sum beliefs, rather than treatment assignment, on preferences for global redistribution, we use treatment assignment as an instrument for the Zero-Sum Index. This approach isolates the variation in beliefs induced by the experiment and addresses potential measurement error and bias from unobserved factors. The instrument is strongly relevant: in the first stage, treatment assignment explains 13.4% of the variation in the Zero-Sum Index, with a robust F-statistic of 35.7, well above conventional weak-instrument thresholds. [Figure 7](#) displays the estimated coefficients and 95% confidence intervals. All effects are negative, in line with the reduced-form results, and the effect on the extensive margin of donations is

statistically significant: a one-standard-deviation increase in the zero-sum views index reduces the probability of contributing to NGOs by 29.5 percentage points ($p = 0.012$). These results reinforce the interpretation that stronger zero-sum beliefs causally reduce support for global redistribution, particularly in behavioral responses.

Taken together, the experimental estimates indicate that stronger zero-sum views causally reduce support for redistribution, with the largest and most robust effect observed for real-stakes contributions to international anti-poverty NGOs. This finding corresponds to a negative derivative of optimal giving with respect to zero-sum beliefs, $\partial d_i^* / \partial z_i < 0$, as outlined in the theoretical framework in [Section I](#). The pattern contrasts with the positive correlations documented in [Section IIIB](#), which suggested that individuals with stronger zero-sum views express greater stated support for redistribution. It also diverges from the positive associations reported by [Chinoy et al. \(2025\)](#) in the United States, which were likewise based on correlational evidence. Together, these results imply that cross-sectional correlations may obscure underlying causal mechanisms, and that general zero-sum beliefs, when exogenously induced, can dampen rather than amplify support for redistribution in practice.

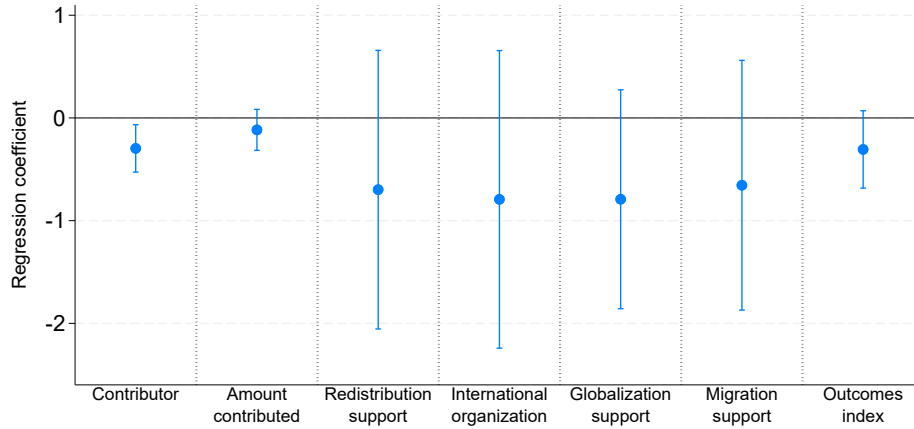


FIGURE 7 – INSTRUMENTAL VARIABLES ESTIMATES: EFFECT OF ZERO-SUM VIEWS ON GLOBAL REDISTRIBUTION PREFERENCES.

Notes: The figure displays two-stage least squares (2SLS) estimates of the effect of zero-sum views on support for global redistribution outcomes. Each coefficient corresponds to a separate regression of the outcome variable on the zero-sum views index, instrumented by the treatment indicator. The zero-sum views index is constructed as an equally weighted average of standardized items and is thus interpreted in standard deviation units. All regressions include controls for age, gender, education, employment status, and political orientation. Robust standard errors are used to construct 95% confidence intervals. The analysis is restricted to participants not exposed to the global income rank treatment ($N = 1,050$). See [Appendix Table A-1](#) for variable definitions.

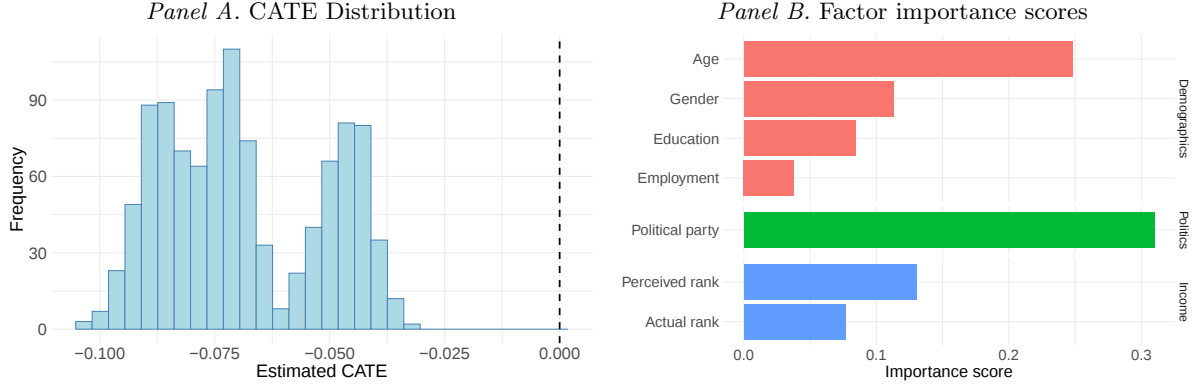


FIGURE 8 – CATE DISTRIBUTION AND FACTOR IMPORTANCE SCORES FOR THE ZERO-SUM TREATMENT.

Notes: The figure reports results from a causal forest estimated on the subsample that did not receive global income rank information ($N = 1,050$). The forest was trained with 2,000 trees using honest splitting, a known treatment assignment probability of $p = 0.5$ (R package `grf`). The treatment is the zero-sum views manipulation; the outcome is an indicator for making any contribution to the anti-poverty NGO. The covariate set includes age, gender, education, employment, political affiliation, prior beliefs about global income rank, and actual global income rank. CATEs in Panel A are out-of-bag predictions from the fitted forest. Variable importance in Panel B reflects the frequency with which each covariate is used to form splits that improve estimation of treatment heterogeneity. See Appendix Table A-1 for variable definitions.

C.4 Heterogeneity Using Causal Forest Analysis

We next examine whether the effect of the zero-sum treatment varies across individual characteristics. To do so, we apply causal forests following [Wager and Athey \(2018\)](#).⁷ The algorithm yields Conditional Average Treatment Effect (CATE) estimates for each respondent, exploiting a rich set of baseline covariates: age, gender, prior beliefs and actual global income rank, education, employment status, and political affiliation.⁸ We focus on the likelihood of contributing to the international NGOs, measured as the binary indicator for making any positive donation, which in the main analysis showed the strongest treatment effect.

Figure 8 displays the distribution of estimated CATEs of the zero-sum treatment for respondents who did not receive information about their global income rank. The distribution lies entirely below zero, indicating that the treatment reduces the probability of contributing for all individuals in this subsample. The calibration test shows that the forest recovers the average treatment effect accurately (slope = 0.95, $p = 0.004$), but provides no evidence of systematic heterogeneity across individuals conditional on the observed covariates (intercept = -0.16 , $p = 0.55$). Nonetheless, the distribution of CATEs appears bimodal, which may reflect chance variation rather than genuine subgroup differences, but could also suggest that certain covariates sort respondents into groups with slightly different treatment responses.

Panel B of Figure 8 reports the variable importance scores from the causal forest. Political

⁷Causal forests are a flexible machine-learning method for estimating heterogeneous treatment effects. We implement the analysis using the R package `grf` ([Tibshirani et al., 2017](#)). This exercise was not pre-registered and should be interpreted as exploratory.

⁸Political leaning was measured by vote intention: “If an election were held today, which political party would you vote for?” with options including Green, Labour, SNP, Liberal Democrats, Conservatives, UKIP, and other or undisclosed.

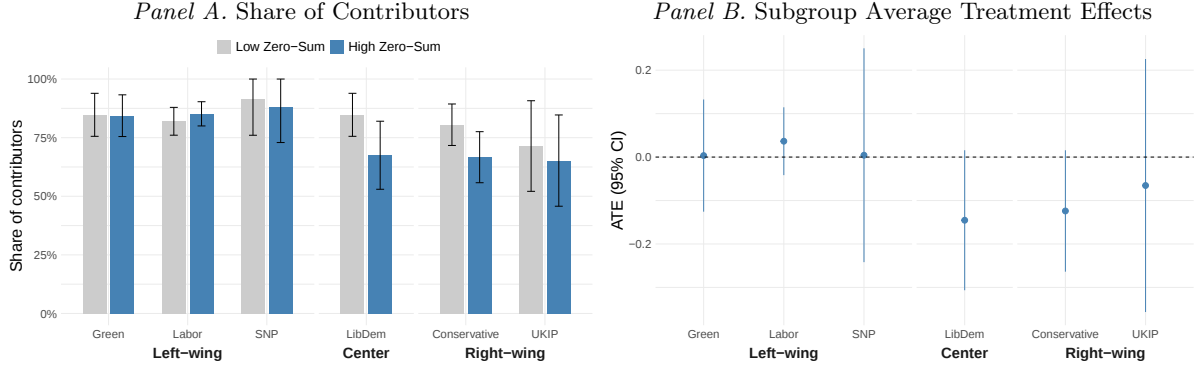


FIGURE 9 – CONTRIBUTIONS TO ANTI-POVERTY NGOS BY POLITICAL AFFILIATION AND ESTIMATED TREATMENT EFFECTS.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (extensive margin). The treatment is the zero-sum views manipulation. Estimates are based on the causal forest described in Figure 8, trained on the subsample that did not receive global income rank information ($N = 1,050$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw contribution rates by treatment group within each political party. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

affiliation emerges as the most important predictor of treatment effect heterogeneity (0.31), followed by age (0.25), perceived rank in the global income distribution (0.13), and gender (0.11). Education (0.08), actual rank (0.08), and employment status (0.04) contribute comparatively little. While the calibration test cautions against strong conclusions, the prominence of political affiliation and the bimodal CATE distribution motivate a closer look at subgroup-specific ATEs.

Panel A of Figure 9 plots the share of respondents making a positive contribution to the international NGOs by political party affiliation, separately for the low and high zero-sum treatment groups. Among left-wing parties (Green, Labour, SNP), contribution rates are uniformly high, exceeding 80% in both treatment conditions, with little evidence of a treatment-induced decline. For centrist and right-leaning parties, however, a clearer pattern emerges: while roughly 85% of Liberal Democrat supporters contribute in the low zero-sum condition, the share falls to 68% under the high zero-sum treatment. A similar decline is observed among Conservative supporters (from 81% to 67%) and UKIP supporters (from 71% to 65%). These descriptive patterns suggest that the negative effect of zero-sum views on NGO contributions is concentrated among respondents with center- and right-wing political affiliations.

Panel B of Figure 9 presents the corresponding subgroup ATEs estimated from the causal forest. Consistent with the descriptive evidence, treatment effects among left-wing supporters are close to zero and statistically indistinguishable from zero (Green: 0.003, $p = 0.964$; Labor: 0.037, $p = 0.355$; SNP: 0.004, $p = 0.975$). By contrast, the estimates for centrist and right-wing parties point to negative effects. For Liberal Democrats the estimated effect is -0.145 ($p = 0.077$), for Conservatives -0.124 ($p = 0.081$), and for UKIP -0.065 ($p = 0.663$).

As a complementary robustness check, Appendix Table A-4 reports OLS models with interactions between the zero-sum treatment and political orientation (left, center, right, undis-

closed). The results corroborate the forest-based evidence: the adverse effect of zero-sum views on real-stakes contributions is negligible among left-leaning respondents, but becomes sizable and statistically significant for those at the center and on the right. In particular, the probability of contributing declines by about 13–19 percentage points for center, right, and undisclosed groups relative to the left baseline. The amount contributed shows a similar pattern.

Turning to other individual characteristics, [Appendix C](#) presents subgroup analyses from the causal forest by age, gender, education, and both perceived and actual global income rank. In all cases, the estimated effect of zero-sum views on contributions is negative, and the 95% confidence intervals overlap substantially, which indicates a high degree of homogeneity in treatment responses. Some patterns are suggestive, such as somewhat larger negative effects among younger respondents (18–30), older cohorts (54+), men, the highly educated, and individuals in the lower deciles of the global income distribution, but these differences are not statistically robust. Consistent results are obtained when estimating conventional OLS interaction models (see Appendix tables).

Overall, the heterogeneity analysis suggests that the adverse effect of zero-sum views on real-stakes contributions to anti-poverty NGOs is broadly similar across demographic and socioeconomic groups. Political orientation appears as the most plausible source of variation, with the negative treatment effect concentrated among respondents at the political center and right, while negligible among those on the left. These patterns are consistent with the descriptive evidence, but they remain exploratory and should be interpreted with caution, given the lack of formal evidence of systematic heterogeneity in the calibration test. Taken together, the results reinforce the broader conclusion that zero-sum thinking tends to undermine support for global redistribution, with suggestive evidence that this effect may be more pronounced among centrist and right-leaning respondents.

IV. Interaction Between Zero-Sum Views and Global Income Rank Information

In this section, we test whether the effect of zero-sum framing on preferences for global redistribution is moderated by informing individuals of their rank in the global income distribution. As described in [Section II](#), participants were first randomly assigned to either the high or low zero-sum views condition, and then half were randomly assigned to receive information about their global income rank, yielding a fully crossed 2-by-2 design.

A. Prior Beliefs and Recall of Global Income Rank

We start by examining what participants believed about their global income position prior to treatment, and how accurately they recall the information when provided. Understanding these patterns helps interpret the informational treatment’s relevance and potential impact.

[Figure 10](#) visualizes prior beliefs about global income rank in the full sample (Panel A), and recalled values of the actual rank among those who received the information (Panel B). In both

panels, the horizontal axis plots actual income deciles (from 1 to 10), based on World Bank estimates matched to each respondent. The vertical axis shows perceived or recalled rank. A 45-degree line is included for reference; observations on the line indicate accurate perceptions or recall.

Panel A displays prior beliefs about global income rank for the full sample ($N = 2,116$). Each point reflects the average prior beliefs about their rank for respondents in a given actual income decile. The figure shows a systematic downward bias in perceptions: the vast majority of observations lie below the 45-degree line. Among all participants, only 171 (8%) correctly identify their decile, 154 (7%) overestimate, and 1,791 (85%) underestimate their position in the global distribution. Underestimation is particularly pronounced among higher actual deciles, while overestimation is more common among lower-income respondents. The average misperception is -2.4 deciles, and this pattern is balanced across the four treatment conditions.

Panel B focuses on the subsample of respondents ($N = 1,066$) who were shown their actual income rank. Immediately after the information was provided, participants were asked: *Based on the information on the previous page, which income group does your household belong to according to estimates based on data from the World Bank?* This measure captures immediate recall of the assigned rank. The figure shows that recalled values are tightly aligned with the 45-degree line, indicating near-perfect recall. Among those informed, 1,031 respondents (97%) recall their assigned income decile correctly. There is no significant difference in recall accuracy between the low and high zero-sum views conditions ($p = 0.33$; $N = 1,066$), confirming that attention to the information was not differentially affected by the first treatment. Although we do not observe belief updating, the high rate of accurate recall suggests that participants register the signal as relevant,⁹ providing a foundation for downstream effects.

To further assess the subjective relevance of the information, we asked participants how surprising they found their assigned rank. Among those who received the treatment, 71% reported being surprised, 13% were neutral, and only 16% were not surprised. Reported surprise correlates strongly with the magnitude of prior misperceptions: a regression of the surprise measure on the absolute difference between prior beliefs and actual rank yields a positive and highly significant association ($p < 0.001$, $R^2 = 0.28$). Participants who misjudged their rank more substantially were more likely to report being surprised. This pattern suggests that individuals did indeed compare the new information to their prior beliefs, showing that information was processed.

Overall, the rank information treatment is expected to have two effects. First, by providing an explicit signal, it increases the salience of participants' global income position relative to those who receive no information. Second, given the widespread underestimation of global income rank in the sample, it is likely to shift perceptions upward. Treated participants are therefore likely to see themselves as better off globally than they previously believed.

⁹Fehr, Mollerstrom and Perez-Truglia (2022) show that individuals in Germany are willing to pay for this information and that the information is partially retained one year later.

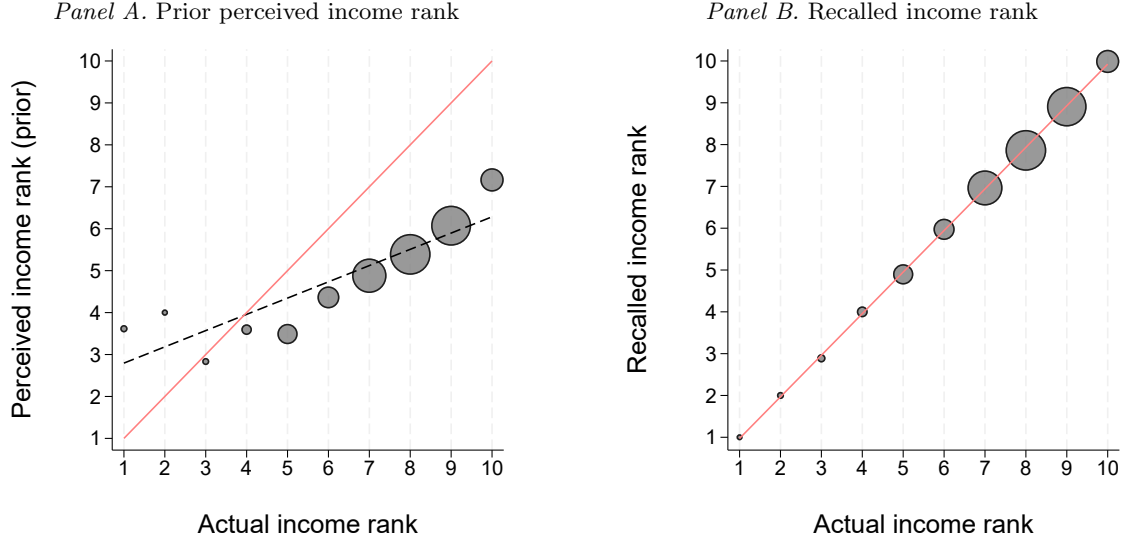


FIGURE 10 – PERCEIVED AND RECALLED GLOBAL INCOME RANK.

Notes: Panel A plots participants’ prior beliefs about their household’s position in the global income distribution (y-axis) against their actual income decile based on World Bank data (x-axis). Each point shows the average perceived rank for respondents within each actual decile. Panel B plots recalled income rank among participants who were shown their actual decile. Recalled values were elicited immediately after the information was shown. The red 45-degree line indicates perfect alignment between perceived or recalled rank and actual rank. The size of the markers is relative to the sample size in the respective income decile. In Panel A, we include a linear fit. Most observations fall below the line, indicating widespread underestimation. In Panel B, nearly all points lie on the line, reflecting near-perfect recall of the provided information. See Appendix [Table A-1](#) for variable definitions.

B. Effects on Preferences for Global Redistribution

We now turn to the effects of the two treatments on participants’ preferences and behavior regarding global redistribution. [Table 4](#) reports estimates from a model that includes the interaction between the zero-sum views treatment and the income rank information treatment. All regressions include controls for age, gender, education, employment status, and political party affiliation. We begin with real-stakes contributions and then examine stated preferences.

Real-Stakes Contributions. [Table 4](#) shows that priming zero-sum views significantly reduces the likelihood of contributing to the international NGOs when income rank information is absent. The estimated effect is -6.7 percentage points relative to a baseline contribution rate of 83 percent in the low-zero-sum, no-rank-information condition ($p = 0.006$, $q = 0.078$). The main effect of rank information, relative to the same baseline, is negative but imprecisely estimated (-0.027 , $p = 0.265$). By contrast, the interaction between the two treatments is positive and statistically significant ($+0.071$, $p = 0.038$), indicating that rank salience moderates the impact of zero-sum beliefs.

Estimated marginal effects confirm that the negative impact of the zero-sum prime is fully offset among participants who receive rank information; see Appendix [Table A-3](#). Within the rank-information group, the effect of the zero-sum prime on donations is near zero ($+0.004$) and

TABLE 4 – IMPACT OF ZERO-SUM VIEWS AND GLOBAL RANK INFORMATION ON GLOBAL REDISTRIBUTION AND ECONOMIC OPENNESS.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum treatment	-0.067*** (0.025)	-0.026 (0.023)	-0.151 (0.148)	-0.162 (0.158)	-0.167 (0.117)	-0.138 (0.135)	-0.065 (0.040)
Rank info treatment	-0.027 (0.024)	0.010 (0.023)	-0.155 (0.145)	0.070 (0.155)	0.056 (0.123)	0.100 (0.138)	0.012 (0.039)
Zero-sum x Rank info	0.071** (0.034)	0.036 (0.032)	0.194 (0.207)	0.033 (0.225)	0.183 (0.170)	-0.008 (0.193)	0.055 (0.056)
Observations	2,116	2,116	2,116	2,116	2,116	2,116	2,116
Mean in LZS & No rank info	0.830	0.540	5.870	5.970	6.920	4.900	0.000

Notes: Each column reports estimates from separate OLS regressions. All regressions control for age, gender, education, political party, and employment status. Robust standard errors are reported in parentheses. Statistical significance reflects unadjusted p -values and is denoted as follows: *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. Appendix Table A-3 presents marginal treatment effects of the zero-sum treatment, disaggregated by whether participants received income rank information. The table reports corresponding p -values as well as q -values adjusted for multiple hypothesis testing using the Benjamini–Hochberg procedure, following Anderson (2008).

not statistically significant ($p = 0.877$, $q = 1$).¹⁰

In the theoretical framework of Section I, the coefficients map naturally into the model’s derivatives. First, in the absence of rank information (low s_i), the zero-sum treatment reduces the likelihood of contributing to international NGOs, consistent with $\frac{\partial d_i^*}{\partial z_i} < 0$ at low s_i . Second, the positive interaction implies $\frac{\partial^2 d_i^*}{\partial z_i \partial s_i} > 0$: greater salience of global advantage attenuates the negative effect of zero-sum beliefs on giving. Third, the effect of rank information within the low-zero-sum arm is small and imprecise. Taken together, these results indicate that rank salience is behaviorally consequential only when a zero-sum mindset is activated and, arguably, because of it. Substantively, the pattern is consistent with a responsibility mechanism grounded in the definition of zero-sum thinking. Under a zero-sum worldview, one party’s gain implies another’s loss. When respondents holding such beliefs are made aware of their relative affluence, the linkage between their own gains and others’ losses becomes salient, plausibly activating responsibility-based motives that counteract the donation-reducing effect of zero-sum beliefs. By contrast, under a positive-sum worldview, personal affluence is not interpreted as coming at others’ expense, so making affluence salient has no reason to alter redistribution preferences and contributions remain unchanged. We interpret this as moderation by s_i rather than shifts in underlying social preferences (δ_i) or beliefs (z_i).¹¹

On the amount contributed, we find no statistically significant effects of either treatment or their interaction. However, the point estimates are directionally consistent with the extensive

¹⁰ Appendix Table A-3 reports marginal effects of the zero-sum treatment separately by rank-information status, with corresponding p -values and q -values that account for multiple hypothesis testing.

¹¹ If rank salience materially shifted social preferences, one would expect a detectable effect even within the low-zero-sum arm. Because the rank-salience manipulation follows the zero-sum manipulation, and the zero-sum index is measured between the two treatments, we cannot test whether rank salience changes measured zero-sum beliefs. Although we cannot confirm the exclusion restriction, the evidence is consistent with the assumption that s_i leaves z_i (and δ_i) unchanged.

margin results: the coefficient on the zero-sum treatment is negative, while the interaction term with rank information is positive.

Stated Preferences. Turning to the stated policy preferences, the pattern of results broadly aligns with the donation outcomes. Across measures of support for global redistribution, international cooperation, globalization, and migration, the zero-sum priming is generally associated with lower stated support. While estimates are not statistically significant, the direction of the effects is consistent and suggests that inducing stronger zero-sum views modestly reduces willingness to endorse international redistribution and openness. The interaction terms show that providing information about one’s global income rank tends to offset these effects.

C. Heterogeneous Treatment Effects of Global Rank Information

To assess heterogeneity in the effects of providing information about one’s position in the global income distribution, we conduct an exploratory causal forest analysis¹² analogous to that in [Section III.C.4](#). We restrict attention to respondents in the high zero-sum views treatment group ($N = 1,057$) and estimate CATEs using the same set of covariates as in the previous analysis: age, gender, prior beliefs and actual global income rank, education, employment status, and political affiliation. [Appendix D](#) presents the distribution of CATEs, variable importance scores, and subgroup average treatment effects, focusing on the share of respondents contributing to anti-poverty NGOs as the primary outcome.

The causal forest estimates an ATE of $+0.044$ ($p = 0.077$), suggesting that among individuals in the high zero-sum condition, being informed about one’s global income position slightly increases the likelihood of contributing to anti-poverty NGOs. The estimated effect corresponds exactly to the marginal treatment effect obtained via OLS regression, indicating consistency across estimation approaches. Diagnostic tests show that the forest captures the average treatment effect correctly (mean prediction = 1.03, $p = 0.037$) but finds no evidence of systematic heterogeneity conditional on the selected covariates (differential prediction = -25.67 , $p = 1.000$).

Although the calibration test does not support systematic heterogeneity, variable importance scores provide a descriptive sense of which covariates the forest relies on when partitioning the data. Education (0.23), political affiliation (0.18), gender (0.14), and age (0.13) emerge as the strongest predictors of variation in estimated treatment effects, followed by perceived income rank (0.12), employment status (0.10), and actual income rank (0.10). These rankings motivate exploratory subgroup analyses, while recognizing their purely descriptive status.

In line with the analysis in [Subsection C.4](#), political orientation again appears most relevant. Center- and right-leaning individuals are less likely than left-leaning individuals to contribute to anti-poverty NGOs when uninformed about their global income rank. Providing rank information is associated with notable increases in their likelihood of contributing (by 23 percentage points, $p = 0.015$, for the center and 16 percentage points, $p = 0.028$, for the right), narrowing

¹²This analysis was not pre-registered.

the baseline gap relative to the left. The contribution behavior of left-leaning respondents is not significantly affected by the treatment.

Exploratory analyses across other outcomes suggest that respondents in the top deciles of the global income distribution (deciles 9–10) are more responsive to rank information. Informing them of their actual position is associated with higher contributions to anti-poverty NGOs and increased stated support for global redistribution, globalization, and migration. By contrast, estimated treatment effects for lower deciles are small and not statistically distinguishable from zero. These patterns are consistent with the interpretation that rank information may be especially salient for those at the top of the global distribution, for whom it underscores their privileged position.

In sum, the causal forest analysis corroborates the positive average treatment effect but does not provide robust evidence of systematic heterogeneity. Exploratory subgroup patterns by political orientation and income rank point to potential variation, although the evidence remains descriptive.

V. Conclusion

This paper examines how beliefs about the nature of economic exchange, specifically whether individuals view it as zero-sum, influence support for global redistribution. We conduct a pre-registered survey experiment with a broadly nationally representative sample of 2,116 UK adults. The design includes a priming treatment to induce zero-sum beliefs and a separate information treatment that reveals participants’ rank in the global income distribution. We find that stronger zero-sum beliefs reduce support for international redistribution. However, this negative effect is attenuated when individuals are informed about their relatively high global income rank.

The findings suggest that preferences for redistribution and economic openness are not fixed but can be shaped by temporary shifts in beliefs about the nature of economic exchange. A brief, low-cost intervention was sufficient to reduce willingness to support global redistribution, underscoring the malleability of preferences. This result connects to a growing literature showing that politically motivated information campaigns can shift beliefs and preferences in ways that reinforce in-group bias and undermine support for redistribution (Alesina, Reich and Riboni, 2020; Bonomi, Gennaioli and Tabellini, 2021). Zero-sum narratives, in particular, may serve as a powerful rhetorical device to reduce support for cross-group transfers by framing economic relations as inherently competitive. When paired with political messaging that emphasizes national interests over global solidarity, such narratives may amplify polarization and weaken the perceived legitimacy of redistribution aimed at non-citizens or out-groups.

This study leaves open several questions that future research may address. First, the study relies on a survey experiment with short-term outcomes, which may not capture how belief changes persist over time. Second, while the zero-sum manipulation was effective in shifting beliefs and behavior in a controlled setting, its effects may differ in real-world political environ-

ments where messages are repeated, contested, and tied to partisan identities. Third, because the sample is drawn from a single national context, the external validity of the findings remains to be tested. Fourth, an important direction for future research is to identify the omitted factors that drive the positive correlation between stronger zero-sum views and redistribution in observational data, despite the negative causal relationship we document. Finally, further work is needed to study domestic outcomes and to examine how zero-sum views interact with redistribution preferences when the relevant outgroup is less distant or even overlaps with the ingroup.

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1. Variable Definitions

TABLE A-1 – MAIN VARIABLES: DEFINITIONS AND MEASUREMENT

Variable	Definition and Measurement
<i>Zero-sum views index</i>	Standardized index based on responses to six items measured on 5-point Likert scales (1 = Strongly agree, 5 = Strongly disagree). Items include: (1) “If someone gets richer, it means that someone else gets poorer”; (2) “Life is like a tennis game: A person wins only when others lose”; (3) “When some people are getting poorer, it means that other people are getting richer”; (4) “The wealth of a few is acquired at the expense of many”; (5) “Those who give much to others receive much from them”; (6) “When the number of rich people increases in the world, the poorer people benefit as well.” Items (1) through (4) are reverse-coded so that higher values consistently indicate stronger endorsement of zero-sum views.
<i>Perceived income rank</i>	Respondents’ subjective estimate of their household’s position in the global income distribution, recorded on a 10-point decile scale (1 = Poorest decile, 10 = Richest decile). Elicited prior to the information treatment.
<i>Recalled income rank</i>	Respondents’ recall of the information provided about their actual global income decile. Elicited immediately after the income rank information treatment using the same 10-point decile scale. Only collected for participants who received the information.
<i>Contributor</i>	Binary indicator equal to 1 if the participant chose to contribute part of their £1 bonus to one of four international NGOs fighting global poverty; 0 otherwise.
<i>Amount contributed</i>	Continuous variable measuring the amount (in GBP) contributed to the selected NGO, ranging from £0 to £1. Includes zeroes for those who chose not to contribute.
<i>Support for global redistribution</i>	10-point Likert scale response to: “Imagine that it would be possible to redistribute income around the world in a similar way as a state can redistribute income within a country. How much redistribution of income would you like between citizens in the world?” (1 = No redistribution, 10 = Complete redistribution).
<i>Support for international organization</i>	10-point Likert scale response to: “Would you support the creation of an international organization (similar to the United Nations) that can redistribute income or resources between countries?” (1 = Definitely not support, 10 = Definitely support).
<i>Support for globalization</i>	10-point Likert scale response to: “What level of globalization would you like?” (1 = No globalization, 10 = Complete globalization).
<i>Support for migration</i>	10-point Likert scale response to: “Should the UK, in your opinion, allow more or less people from poorer countries to come to the UK and work and live here?” (1 = Much fewer people, 10 = Much more people).
<i>Political leaning</i>	Categorical measure based on responses to: “If an election was held today, which political party would you vote for?” Responses are coded into three groups: (1) <i>Center-left</i> (Green Party, Labour, SNP, Liberal Democrats), (2) <i>Right-leaning</i> (Conservatives, UKIP), and (3) <i>Other/Undisclosed</i> (Other, Don’t know, Prefer not to say). Used to construct binary indicators for center-left and right-leaning political orientation.

A. The Zero-Sum Views Treatment: Additional Analyses

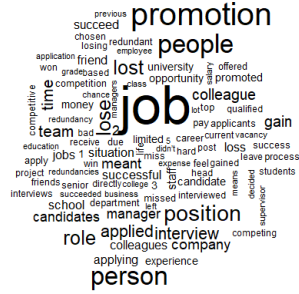
1. Sentiment Analysis

To assess how the priming task influenced respondents’ cognitive and emotional framing, we analyze the sentiment of the open-ended narratives elicited by the zero-sum and non-zero-sum prompts. The narratives offer a window into the affective tone of the situations participants recalled, which may shape their mindset toward global cooperation and redistribution. We use

dictionary-based sentiment analysis to assign each response a continuous sentiment score, where higher values indicate more positive emotional content. This approach allows us to test whether the priming task activated different cognitive and emotional frames for interpreting success, as reflected in the tone of respondents' narratives.¹³

Figure A-1 visualizes word clouds for the low and high zero-sum groups. The most frequently used words in both conditions are *job*, *promotion*, *people*, and *person*. These terms are broadly neutral in sentiment and consistent with the task prompt, which asked respondents to recall a professional or educational experience related to success.

Panel A. Low zero-sum condition



Panel B. High zero-sum condition

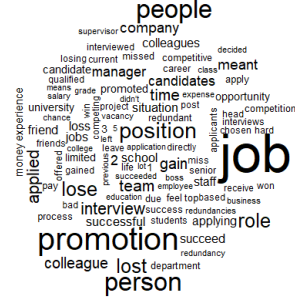


FIGURE A-1 – Word Frequency Visualization by Zero-Sum Condition.

Notes: Word clouds show the most frequently used words in narrative responses, separately for the high-zero-sum and low-zero-sum conditions. Font size reflects relative word frequency. Common stopwords have been removed.

Figure A-2 plots kernel density estimates of sentiment scores, separately for the low-zero-sum condition (gray) and the high-zero-sum condition (light blue). The average sentiment score (QDAP) in the low-zero-sum condition was 0.207, which lies close to the commonly used benchmark of 0.2 for emotional neutrality. In contrast, the average in the high-zero-sum condition was 0.137, indicating a notably more negative emotional tone. The difference of 0.070 between conditions is statistically significant ($p < 0.001$), and corresponds to approximately 0.48 standard deviations.¹⁴ A nonparametric Wilcoxon rank-sum test confirms the difference in distributions ($z = 11.32$, $p < 0.001$). Sentiment was overall skewed positive, but the proportion of negative responses more than doubled in the high-zero-sum condition, from 3.7% to 8.3%. This suggests that although most respondents recalled experiences with a generally positive tone, zero-sum priming significantly increased the likelihood of emotionally negative content, consistent with the activation of a more competitive or adversarial mindset.

¹³Sentiment scores were computed using the `SentimentAnalysis` package in R, which applies multiple established sentiment dictionaries to open-text responses. We focus here on the QDAP lexicon, which is designed to capture affective tone in conversational and reflective writing.

¹⁴This standardized effect is calculated by dividing the difference in means by the pooled standard deviation across both groups ($0.070 / 0.145 \approx 0.48$).

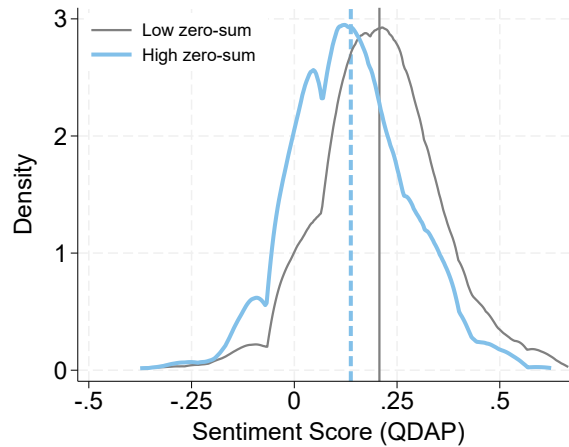


FIGURE A-2 – DISTRIBUTION OF SENTIMENT IN NARRATIVE RESPONSES BY ZERO-SUM CONDITION.

Notes: This figure shows kernel density estimates of the QDAP sentiment score in respondents' narrative responses, separately by experimental condition. Respondents in the low zero-sum condition (gray line) were prompted to recall a situation where multiple people could succeed without negatively affecting each other; those in the high zero-sum condition (light blue line) recalled a situation where one person's success came at the expense of another. Sentiment scores range from negative to positive values, with values around 0.2 generally interpreted as emotionally neutral. The distribution in the high zero-sum condition is shifted leftward, indicating a more negative tone on average.

Figure A-3 lists the words that most strongly contributed to the sentiment scores, separately for positive and negative terms and by treatment condition. Among the negative contributors, words such as *lose*, *lost*, *loss*, *hard*, *limited*, *missed*, *bad*, and *fail* appear more frequently in the high zero-sum condition. For positive sentiment, words like *success*, *succeed*, *gain*, *successful*, *win*, *bonus*, and *helped* are mentioned in both groups, but with higher frequency in the low zero-sum condition. These sentiment-relevant terms are not among the most common overall and therefore do not appear with large font size in the word clouds shown in Figure A-1.

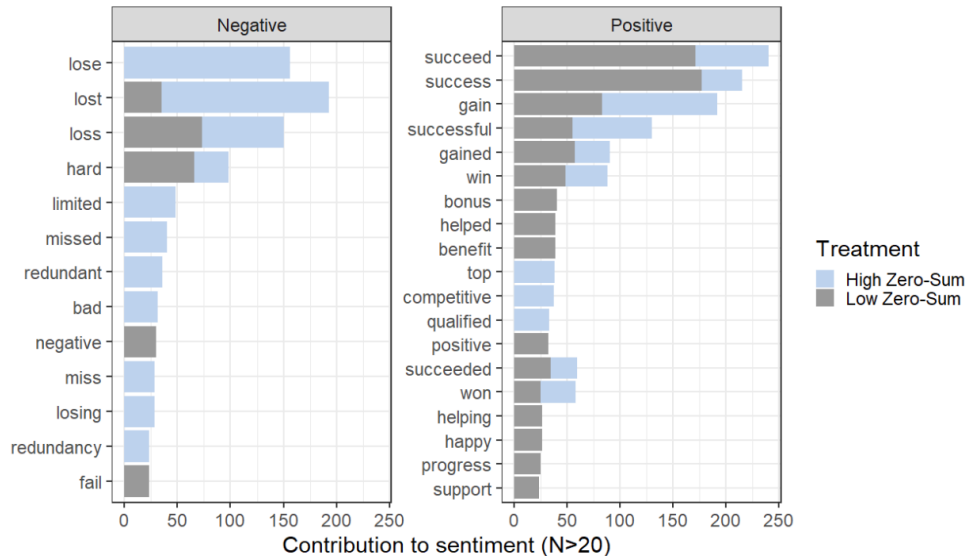


FIGURE A-3 – WORDS CONTRIBUTING MOST TO POSITIVE AND NEGATIVE SENTIMENT SCORES.

Notes: The left panel shows the most frequently used words that contributed to negative sentiment scores, and the right panel shows those contributing to positive sentiment scores. Bars are shaded by treatment condition: gray for the low zero-sum group and light blue for the high zero-sum group. Word contributions are based on the QDAP sentiment dictionary, with frequency indicating how often each term appeared in responses within each condition. Bars that display only one color indicate that the corresponding word appeared fewer than 20 times in the other treatment condition.

2. Real-Stakes Contributions to International NGOs

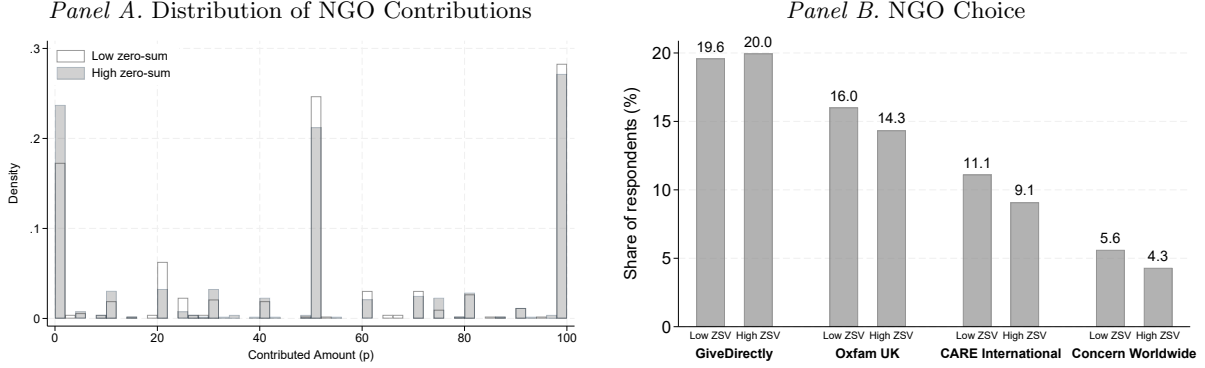


FIGURE A-4 – CONTRIBUTIONS AND NGO CHOICES BY ZERO-SUM VIEWS TREATMENT CONDITION

Notes: Panel A shows the distribution of individual contribution amounts, measured in pence (GBP), by assignment to either the low or high zero-sum condition. Panel B reports the percentage of respondents selecting each NGO, separately for participants in each zero-sum treatment group. The figure uses only observations from participants that were not informed about their rank in the global income distribution ($N = 1,050$).

B. Multiple Hypotheses Testing

TABLE A-2 – REPLICATION OF TABLE 3: EFFECTS OF ZERO-SUM FRAMING ON POLICY PREFERENCES WITH P-VALUES AND MULTIPLE HYPOTHESIS TESTING-ADJUSTED Q-VALUES.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration
	(1)	(2)	(3)	(4)	(5)	(6)
Zero-sum treatment	-0.068	-0.026	-0.150	-0.179	-0.185	-0.116
SE	(0.025)	(0.023)	(0.149)	(0.160)	(0.117)	(0.136)
p-value	0.006	0.263	0.314	0.263	0.114	0.393
q-value	0.038	0.458	0.458	0.458	0.400	0.487
Observations	1,050	1,050	1,050	1,050	1,050	1,050

Notes: This table replicates the results of Table 3, reporting robust p-values and multiple hypothesis testing (MHT)-adjusted q-values for the six primary outcomes. Each column reports estimates from a separate OLS regression of the outcome variable on an indicator for assignment to the zero-sum belief treatment. The sample is restricted to respondents who were not shown their position in the global income distribution ($N = 1,050$). All regressions include controls for age, gender, education, political party, and employment status. DContributor is a binary indicator equal to 1 if the participant made a positive contribution to an international anti-poverty organization. Average amount contributed is measured in GBP and includes both contributors and non-contributors. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. Robust standard errors are denoted SE and are reported in parentheses below the coefficients. For each estimated marginal treatment effect by prior beliefs, we present both the p-values and the q-values. We compute the q-values using the Benjamini-Hochberg method as described in Anderson (2008). The reported q-values indicate the smallest false discovery rate at which the null hypothesis of a zero effect is rejected.

TABLE A-3 – IMPACT OF ZERO-SUM VIEWS BY GLOBAL RANK INFORMATION WITH P-VALUES AND MULTIPLE HYPOTHESIS TESTING—ADJUSTED Q-VALUES.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration
	(1)	(2)	(3)	(4)	(5)	(6)
Zero-sum: No rank info	-0.067	-0.026	-0.151	-0.162	-0.171	-0.138
SE	(0.025)	(0.023)	(0.148)	(0.159)	(0.117)	(0.135)
p-value	.006	.257	.306	.308	.142	.309
q-value	0.078	0.944	0.944	0.944	0.944	0.944
Zero-sum: Rank info	0.004	0.010	0.049	-0.130	0.017	-0.146
SE	(0.024)	(0.023)	(0.146)	(0.161)	(0.124)	(0.140)
p-value	.876	.648	.738	.42	.888	.297
q-value	1	1	1	1	1	0.944
Observations	2,116	2,116	2,116	2,116	2,116	2,116

Notes: This table presents the marginal treatment effects of the zero-sum condition, by randomization into receiving information about global income rank, computed based on the results presented in [Table 4](#). Each column reports estimates from separate OLS regressions. The coefficients capture conditional average treatment effects. All regressions control for age, gender, education, political party, and employment status. Robust standard errors are denoted SE and are reported in parentheses. For each coefficient, we present both the p-values and the q-values. We compute the q-values using the Benjamini-Hochberg method as described in [Anderson \(2008\)](#). The reported q-values indicate the smallest false discovery rate at which the null hypothesis of a zero effect is rejected.

C. Heterogeneity in Zero-Sum Treatment Effects

1. Political Leaning

TABLE A-4 – HETEROGENEOUS EFFECTS OF INCREASING ZERO-SUM VIEWS ON POLICY PREFERENCES, BY POLITICAL LEANING.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum	0.023 (0.033)	0.048 (0.033)	0.006 (0.210)	-0.109 (0.221)	-0.328** (0.159)	-0.104 (0.203)	-0.022 (0.056)
Center	0.003 (0.054)	-0.050 (0.052)	-0.597* (0.328)	-1.001*** (0.354)	-0.298 (0.275)	-0.633** (0.314)	-0.228** (0.098)
Right-wing	-0.068 (0.049)	-0.067 (0.046)	-2.226*** (0.296)	-2.249*** (0.320)	-1.398*** (0.254)	-2.668*** (0.264)	-0.726*** (0.081)
Undisclosed	0.019 (0.040)	0.028 (0.039)	-0.920*** (0.258)	-1.413*** (0.280)	-1.127*** (0.221)	-1.584*** (0.255)	-0.397*** (0.072)
Zero-sum x Center	-0.184* (0.097)	-0.068 (0.086)	0.260 (0.480)	0.802 (0.525)	0.233 (0.385)	0.381 (0.485)	0.096 (0.141)
Zero-sum x Right-wing	-0.133* (0.071)	-0.147** (0.062)	0.330 (0.412)	0.057 (0.443)	0.705** (0.349)	0.411 (0.366)	0.052 (0.116)
Zero-sum x Undisclosed	-0.193*** (0.062)	-0.165*** (0.057)	-0.821** (0.381)	-0.464 (0.405)	0.096 (0.307)	-0.558 (0.358)	-0.224** (0.102)
Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050

Notes: Each column reports results from an OLS regression including the zero-sum treatment indicator, categorical indicators for political orientation (baseline = left), and their interactions. The sample is restricted to respondents who were not shown their position in the global income distribution ($N = 1,050$). All regressions include controls for age, gender, education, employment status, and actual and perceived income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount donated in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

2. Age

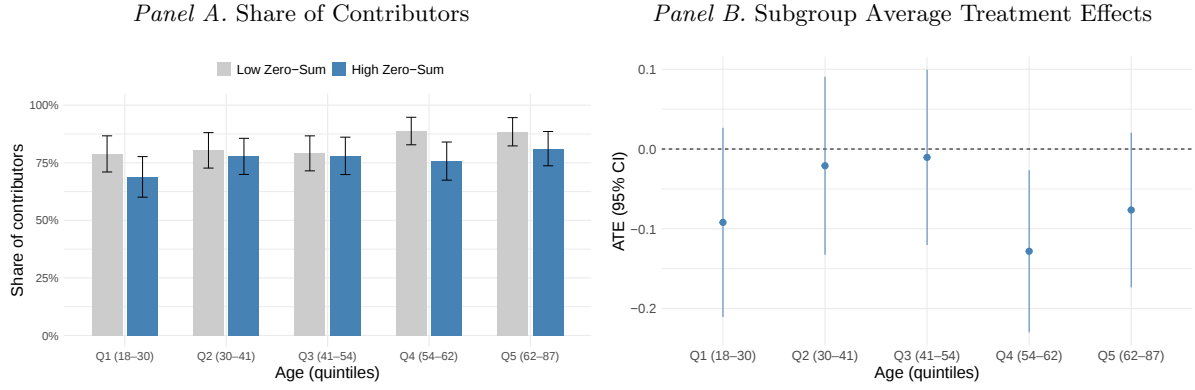


FIGURE A-5 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY AGE QUINTILE AND ESTIMATED TREATMENT EFFECTS.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (binary variable). The treatment is the zero-sum views manipulation. Estimates are based on the causal forest described in [Figure 8](#), trained on the subsample that did not receive global income rank information and who identified as either male or female ($N = 1,039$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw contribution rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix [Table A-1](#) for variable definitions.

TABLE A-5 – HETEROGENEOUS EFFECTS OF INCREASING ZERO-SUM VIEWS ON POLICY PREFERENCES, BY AGE QUINTILE.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum	-0.116*	-0.030	0.151	-0.064	0.024	0.231	0.011
	(0.059)	(0.052)	(0.319)	(0.352)	(0.247)	(0.300)	(0.091)
Q2 [31-41]	0.006	0.067	0.566*	0.277	0.255	0.245	0.146
	(0.057)	(0.054)	(0.331)	(0.344)	(0.259)	(0.317)	(0.092)
Q3 [42-54]	-0.000	0.075	0.660**	0.340	0.094	-0.156	0.116
	(0.057)	(0.053)	(0.327)	(0.362)	(0.271)	(0.309)	(0.090)
Q4 [55-62]	0.096*	0.133**	0.734**	0.198	0.110	-0.248	0.137
	(0.053)	(0.052)	(0.337)	(0.361)	(0.270)	(0.331)	(0.095)
Q5 [63-87]	0.108**	0.152***	0.733**	0.715*	0.096	-0.319	0.180*
	(0.054)	(0.053)	(0.327)	(0.374)	(0.282)	(0.324)	(0.098)
Zero-sum x Q2	0.113	0.027	-0.273	0.073	-0.170	-0.544	-0.060
	(0.081)	(0.073)	(0.441)	(0.473)	(0.350)	(0.438)	(0.122)
Zero-sum x Q3	0.088	0.052	-0.007	0.092	-0.036	-0.271	0.010
	(0.084)	(0.074)	(0.465)	(0.507)	(0.369)	(0.421)	(0.127)
Zero-sum x Q4	0.011	-0.020	-0.521	0.094	-0.569	-0.444	-0.136
	(0.078)	(0.072)	(0.463)	(0.494)	(0.359)	(0.431)	(0.129)
Zero-sum x Q5	0.032	-0.041	-0.478	-0.609	-0.088	-0.412	-0.146
	(0.079)	(0.072)	(0.474)	(0.518)	(0.377)	(0.432)	(0.133)
Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050

Notes: Each column reports results from an OLS regression including the zero-sum treatment indicator, categorical indicators for age quintile (baseline = 18-30 year olds), and their interactions. The sample is restricted to respondents who were not shown their position in the global income distribution (N = 1,050). All regressions include controls for gender, education, employment status, political affiliation, and perceived and actual global income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount donated in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: ***p<0.01, **p<0.05, *p<0.10.

3. Gender

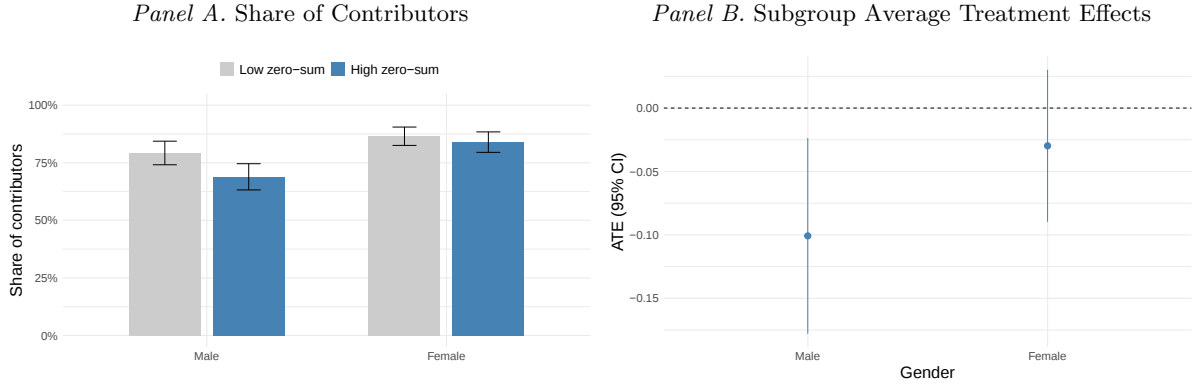


FIGURE A-6 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY GENDER AND ESTIMATED TREATMENT EFFECTS.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (extensive margin). The treatment is the zero-sum views manipulation. Estimates are based on the causal forest described in [Figure 8](#), trained on the subsample that did not receive global income rank information ($N = 1,050$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix [Table A-1](#) for variable definitions.

TABLE A-6 – HETEROGENEOUS EFFECTS OF INCREASING ZERO-SUM VIEWS ON POLICY PREFERENCES, BY GENDER.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum	-0.045 (0.031)	0.015 (0.032)	-0.007 (0.198)	0.054 (0.209)	0.105 (0.155)	0.041 (0.186)	0.025 (0.055)
Male	-0.086** (0.034)	-0.060* (0.033)	-0.124 (0.206)	0.029 (0.221)	0.078 (0.174)	0.104 (0.197)	-0.025 (0.058)
Zero-sum x Male	-0.041 (0.051)	-0.089* (0.047)	-0.231 (0.299)	-0.439 (0.316)	-0.502** (0.241)	-0.331 (0.276)	-0.174** (0.081)
Observations	1,039	1,039	1,039	1,039	1,039	1,039	1,039

Notes: Each column reports results from an OLS regression including the zero-sum treatment indicator, categorical indicators for gender (baseline = female), and their interactions. The sample is restricted to respondents who were not shown their position in the global income distribution and who identified as either male or female ($N = 1,039$). All regressions include controls for age, education, employment status, political affiliation, and perceived and actual income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount donated in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4. Education

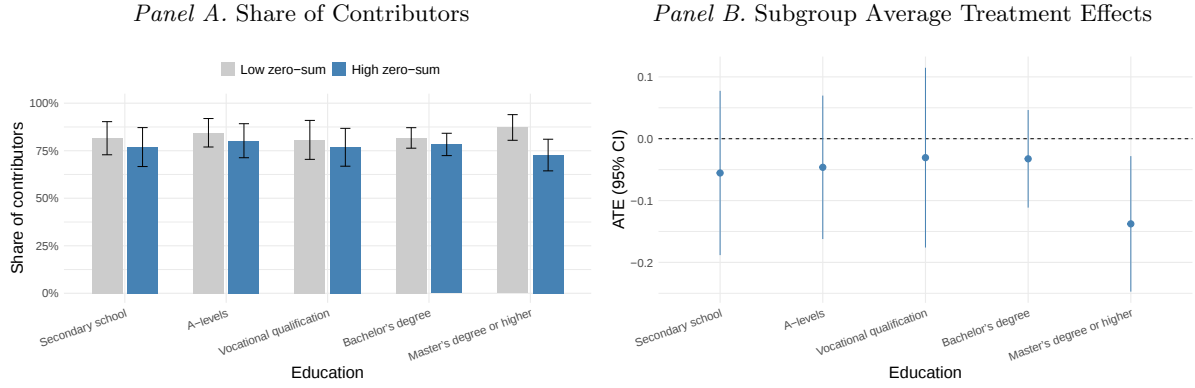


FIGURE A-7 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY EDUCATION LEVEL AND ESTIMATED TREATMENT EFFECTS.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (extensive margin). The treatment is the zero-sum views manipulation. Estimates are based on the causal forest described in [Figure 8](#), trained on the subsample that did not receive global income rank information ($N = 1,050$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix [Table A-1](#) for variable definitions.

TABLE A-7 – HETEROGENEOUS EFFECTS OF INCREASING ZERO-SUM VIEWS ON POLICY PREFERENCES, BY EDUCATION.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum	-0.067 (0.069)	-0.033 (0.059)	-0.364 (0.455)	-0.251 (0.464)	-0.115 (0.362)	0.371 (0.381)	-0.048 (0.105)
A-levels	0.058 (0.060)	0.094* (0.057)	0.162 (0.385)	0.320 (0.404)	0.543* (0.300)	0.696** (0.342)	0.195** (0.098)
Vocational	-0.030 (0.067)	-0.031 (0.060)	-0.407 (0.392)	-0.082 (0.410)	0.232 (0.344)	0.028 (0.355)	-0.031 (0.101)
Bachelors	0.001 (0.053)	0.044 (0.049)	0.010 (0.340)	0.233 (0.348)	-0.123 (0.281)	0.719** (0.301)	0.085 (0.084)
Masters	0.054 (0.057)	0.088 (0.056)	0.329 (0.387)	0.752* (0.399)	0.403 (0.324)	1.627*** (0.346)	0.295*** (0.097)
Zero-sum x A-levels	0.009 (0.091)	-0.034 (0.084)	0.098 (0.585)	0.213 (0.610)	-0.242 (0.447)	-0.404 (0.497)	-0.050 (0.145)
Zero-sum x Vocational	0.011 (0.101)	-0.006 (0.086)	0.722 (0.598)	0.552 (0.620)	0.399 (0.490)	-0.496 (0.519)	0.096 (0.150)
Zero-sum x Bachelors	0.021 (0.081)	0.042 (0.071)	0.259 (0.510)	0.064 (0.530)	-0.020 (0.413)	-0.435 (0.447)	0.013 (0.125)
Zero-sum x Masters	-0.056 (0.088)	-0.014 (0.079)	0.226 (0.557)	-0.064 (0.574)	-0.243 (0.444)	-0.883* (0.484)	-0.086 (0.137)
Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050

Notes: Each column reports results from an OLS regression including the zero-sum treatment indicator, categorical indicators for highest education degree (baseline = secondary school), and their interactions. The sample is restricted to respondents who were not shown their position in the global income distribution (N = 1,050). All regressions include controls for age, gender, employment status, political affiliation, and perceived and actual global income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount donated in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: ***p<0.01, **p<0.05, *p<0.10.

5. Perceived Global Income Rank (Prior Beliefs)

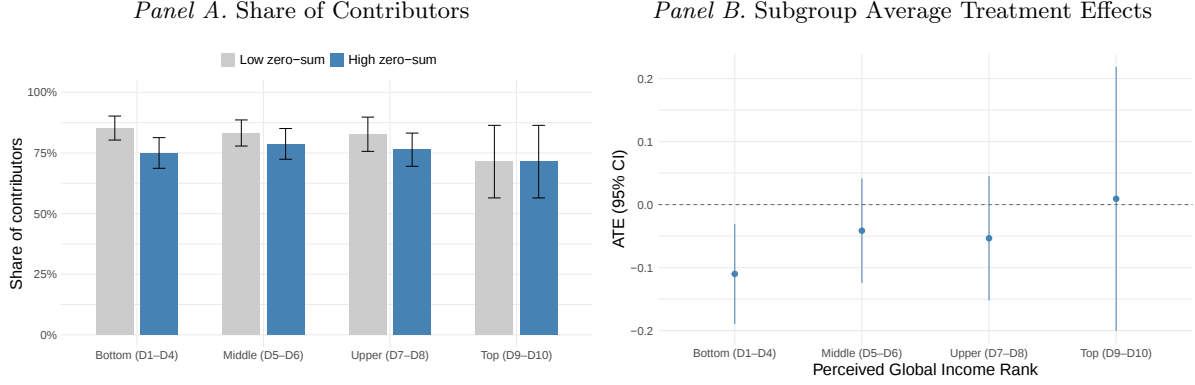


FIGURE A-8 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY PERCEIVED GLOBAL INCOME RANK AND ESTIMATED TREATMENT EFFECTS.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (extensive margin). The treatment is the zero-sum views manipulation. Estimates are based on the causal forest described in Figure 8, trained on the subsample that did not receive global income rank information ($N = 1,050$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-8 – HETEROGENEOUS EFFECTS OF INCREASING ZERO-SUM VIEWS ON POLICY PREFERENCES, BY PERCEIVED GLOBAL INCOME RANK.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum	0.026 (0.103)	-0.019 (0.089)	-0.939 (0.599)	-1.462** (0.611)	-0.433 (0.493)	-0.848* (0.484)	-0.302* (0.156)
Decile 1-4	0.148* (0.083)	0.038 (0.076)	0.157 (0.485)	0.458 (0.500)	-0.212 (0.410)	-0.656 (0.424)	-0.004 (0.129)
Decile 5-6	0.116 (0.081)	0.035 (0.074)	0.107 (0.471)	0.366 (0.491)	0.077 (0.405)	0.113 (0.415)	0.071 (0.128)
Decile 7-8	0.130 (0.085)	0.078 (0.078)	-0.138 (0.494)	0.051 (0.514)	-0.463 (0.422)	-0.358 (0.432)	-0.038 (0.133)
Zero-sum x Decile 1-4	-0.151 (0.112)	-0.037 (0.097)	0.760 (0.651)	1.272* (0.670)	0.286 (0.528)	1.057* (0.540)	0.245 (0.170)
Zero-sum x Decile 5-6	-0.064 (0.112)	0.036 (0.098)	0.956 (0.650)	1.514** (0.671)	-0.121 (0.531)	0.415 (0.536)	0.229 (0.171)
Zero-sum x Decile 7-8	-0.088 (0.115)	-0.036 (0.102)	1.023 (0.676)	1.589** (0.692)	0.901 (0.551)	0.938* (0.558)	0.342* (0.179)
Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050

Notes: Each column reports results from an OLS regression including the zero-sum treatment indicator, categorical indicators for perceived global income rank group (baseline = decile 9 or 10), and their interactions. The sample is restricted to respondents who were not shown their position in the global income distribution ($N = 1,050$). All regressions include controls for age, gender, education, employment status, political affiliation, and actual income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount donated in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

6. Actual Global Income Rank

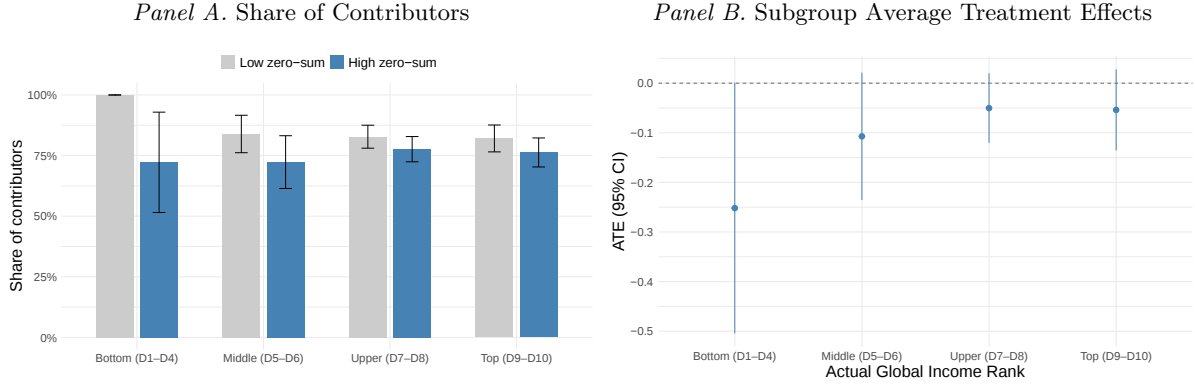


FIGURE A-9 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY ACTUAL GLOBAL INCOME RANK AND ESTIMATED TREATMENT EFFECTS.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (extensive margin). The treatment is the zero-sum views manipulation. Estimates are based on the causal forest described in Figure 8, trained on the subsample that did not receive global income rank information ($N = 1,050$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-9 – HETEROGENEOUS EFFECTS OF INCREASING ZERO-SUM VIEWS ON POLICY PREFERENCES, BY ACTUAL GLOBAL INCOME RANK.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Zero-sum	-0.042 (0.041)	-0.052 (0.040)	-0.119 (0.236)	-0.257 (0.259)	-0.176 (0.201)	-0.257 (0.219)	-0.094 (0.068)
Decile 1-4	0.242*** (0.058)	0.129 (0.122)	1.196 (0.735)	0.936 (0.766)	0.650 (0.485)	-0.710 (0.520)	0.244 (0.153)
Decile 5-6	0.001 (0.053)	-0.043 (0.051)	0.843** (0.350)	0.641* (0.359)	0.296 (0.271)	0.077 (0.330)	0.127 (0.092)
Decile 7-8	-0.001 (0.038)	-0.064* (0.037)	0.477** (0.232)	0.394 (0.254)	0.111 (0.206)	-0.044 (0.222)	0.040 (0.067)
Zero-sum x Decile 1-4	-0.271** (0.119)	-0.206 (0.144)	-0.493 (0.902)	-0.522 (0.972)	-0.997 (0.611)	0.783 (0.664)	-0.228 (0.211)
Zero-sum x Decile 5-6	-0.083 (0.077)	-0.022 (0.070)	0.308 (0.465)	0.592 (0.480)	0.258 (0.360)	0.145 (0.420)	0.093 (0.118)
Zero-sum x Decile 7-8	-0.010 (0.054)	0.074 (0.051)	-0.046 (0.324)	0.125 (0.348)	0.017 (0.265)	0.250 (0.299)	0.067 (0.090)
Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050

Notes: Each column reports results from an OLS regression including the zero-sum treatment indicator, categorical indicators for actual global income rank group (baseline = decile 9 or 10), and their interactions. The sample is restricted to respondents who were not shown their position in the global income distribution ($N = 1,050$). All regressions include controls for age, gender, education, employment status, political affiliation, and perceived global income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount donated in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

D. Heterogeneity in Global Income Rank Information Treatment Effects

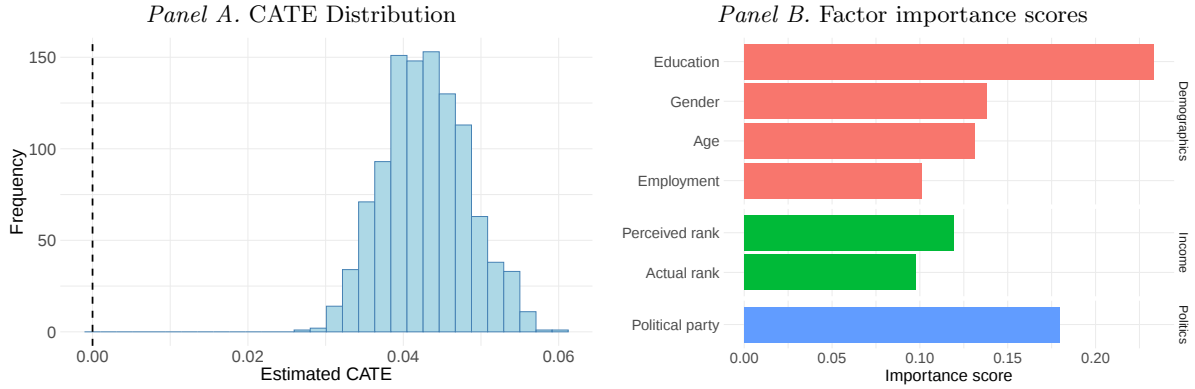


FIGURE A-10 – CATE distribution and factor importance scores for the Global Income Rank Information Treatment.

Notes: The figure reports results from a causal forest estimated on the subsample that were randomized to the high zero-sum condition ($N = 1,057$). The forest was trained with 2,000 trees using honest splitting, a known treatment assignment probability of $p = 0.5$ (R package `grf`). The treatment is the assignment to receiving global income rank information; the outcome is an indicator for making any contribution to the anti-poverty NGO. The covariate set includes age, gender, education, employment, political affiliation, prior beliefs about global income rank, and actual global income rank. CATEs in Panel A are out-of-bag predictions from the fitted forest. Variable importance in Panel B reflects the frequency with which each covariate is used to form splits that improve estimation of treatment heterogeneity. See Appendix Table A-1 for variable definitions.

1. Political Leaning

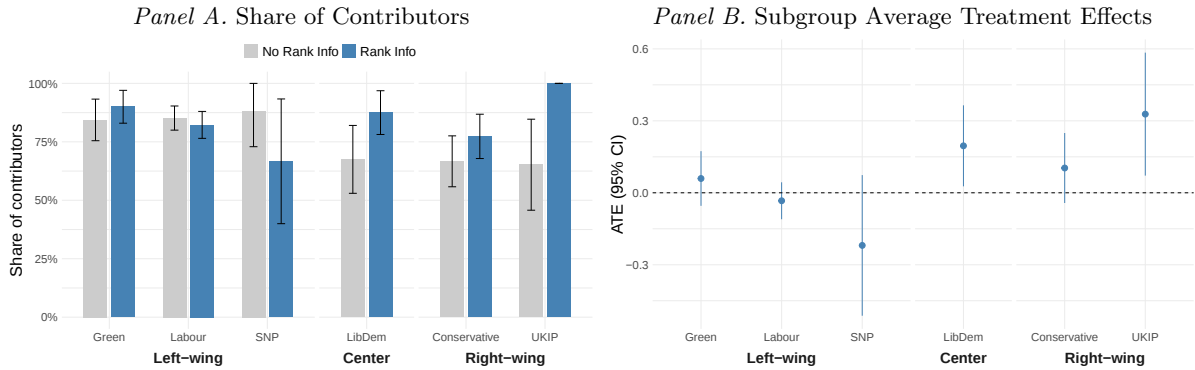


FIGURE A-11 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY POLITICAL AFFILIATION AND ESTIMATED TREATMENT EFFECTS OF PROVIDING GLOBAL INCOME RANK INFORMATION IN THE HIGH ZERO-SUM GROUP.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO (extensive margin). The treatment is the provision of global income rank information. Estimates are based on the causal forest described in Figure A-10, trained on the subsample that was randomized to the high zero-condition ($N = 1,057$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each political party. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-10 – HETEROGENEOUS EFFECTS OF GLOBAL INCOME RANK INFORMATION ON POLICY PREFERENCES, BY POLITICAL LEANING.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank info	-0.016 (0.033)	-0.002 (0.032)	0.008 (0.195)	-0.002 (0.213)	0.349** (0.156)	0.148 (0.200)	0.045 (0.053)
Center	-0.194** (0.079)	-0.133** (0.067)	-0.375 (0.361)	-0.230 (0.394)	-0.086 (0.272)	-0.307 (0.368)	-0.152 (0.100)
Right-wing	-0.216*** (0.053)	-0.226*** (0.044)	-1.804*** (0.293)	-2.209*** (0.312)	-0.665*** (0.242)	-2.273*** (0.265)	-0.673*** (0.084)
Undisclosed	-0.198*** (0.047)	-0.152*** (0.042)	-1.607*** (0.281)	-1.924*** (0.294)	-1.017*** (0.208)	-2.154*** (0.255)	-0.621*** (0.072)
Rank info x Center	0.231** (0.095)	0.206** (0.088)	-0.209 (0.502)	-0.308 (0.577)	-0.018 (0.388)	-0.269 (0.486)	0.050 (0.137)
Rank info x Right-wing	0.159** (0.072)	0.116* (0.063)	-0.126 (0.430)	0.363 (0.482)	-0.462 (0.357)	-0.301 (0.384)	0.011 (0.118)
Rank info x Undisclosed	0.083 (0.064)	0.073 (0.057)	0.276 (0.376)	0.364 (0.405)	-0.036 (0.307)	0.299 (0.349)	0.109 (0.101)
Observations	1,057	1,057	1,057	1,057	1,057	1,057	1,057

Notes: Each column reports results from an OLS regression including the global income rank treatment indicator, categorical indicators for political orientation (baseline = left), and their interactions. The sample is restricted to respondents who were randomized to the high zero-sum treatment condition ($N = 1,057$). All regressions include controls for age, gender, education, employment status, and actual and perceived income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount contributed in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p -values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

2. Age

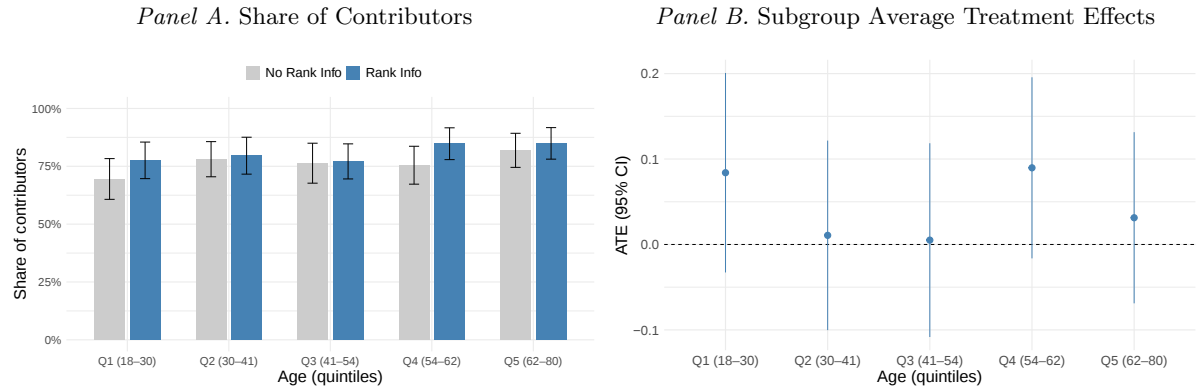


FIGURE A-12 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY AGE QUINTILE AND ESTIMATED TREATMENT EFFECTS OF PROVIDING GLOBAL INCOME RANK INFORMATION IN THE HIGH ZERO-SUM GROUP.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO. The treatment is the provision of global income rank information. Estimates are based on the causal forest described in Figure A-10, trained on the subsample that was randomized to the high zero-condition ($N = 1,057$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-11 – HETEROGENEOUS EFFECTS OF GLOBAL INCOME RANK INFORMATION ON POLICY PREFERENCES, BY AGE QUINTILE.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank info	0.116*	0.108**	0.311	0.663*	0.220	0.099	0.162*
	(0.060)	(0.051)	(0.303)	(0.340)	(0.258)	(0.306)	(0.083)
Q2 [31-41]	0.133**	0.098*	0.160	0.397	0.079	-0.361	0.076
	(0.059)	(0.053)	(0.302)	(0.332)	(0.249)	(0.307)	(0.081)
Q3 [42-54]	0.113*	0.134**	0.601*	0.519	0.056	-0.382	0.136
	(0.062)	(0.054)	(0.336)	(0.356)	(0.262)	(0.299)	(0.088)
Q4 [55-62]	0.135**	0.123**	0.163	0.274	-0.558**	-0.665**	-0.006
	(0.059)	(0.052)	(0.325)	(0.341)	(0.252)	(0.286)	(0.085)
Q5 [63-87]	0.160**	0.117**	0.299	0.002	-0.191	-0.779**	0.009
	(0.063)	(0.056)	(0.373)	(0.394)	(0.278)	(0.318)	(0.098)
Rank info x Q2	-0.116	-0.140**	-0.343	-0.854*	0.026	0.017	-0.163
	(0.082)	(0.071)	(0.420)	(0.486)	(0.365)	(0.455)	(0.120)
Rank info x Q3	-0.114	-0.084	-0.325	-0.626	-0.131	0.071	-0.126
	(0.084)	(0.074)	(0.443)	(0.487)	(0.365)	(0.429)	(0.119)
Rank info x Q4	-0.037	-0.065	-0.426	-0.902*	0.400	-0.057	-0.102
	(0.078)	(0.070)	(0.454)	(0.497)	(0.368)	(0.412)	(0.121)
Rank info x Q5	-0.060	0.016	-0.295	-0.321	-0.258	0.101	-0.057
	(0.081)	(0.074)	(0.496)	(0.539)	(0.410)	(0.445)	(0.134)
Observations	1,057	1,057	1,057	1,057	1,057	1,057	1,057

Notes: Each column reports results from an OLS regression including the global income rank treatment indicator, categorical indicators for age quintile (baseline = 18-30 year olds), and their interactions. The sample is restricted to respondents who were randomized to the high zero-sum treatment condition (N = 1,057). All regressions include controls for gender, education, employment status, political affiliation, and perceived and actual global income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount contributed in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: ***p<0.01, **p<0.05, *p<0.10.

3. Gender

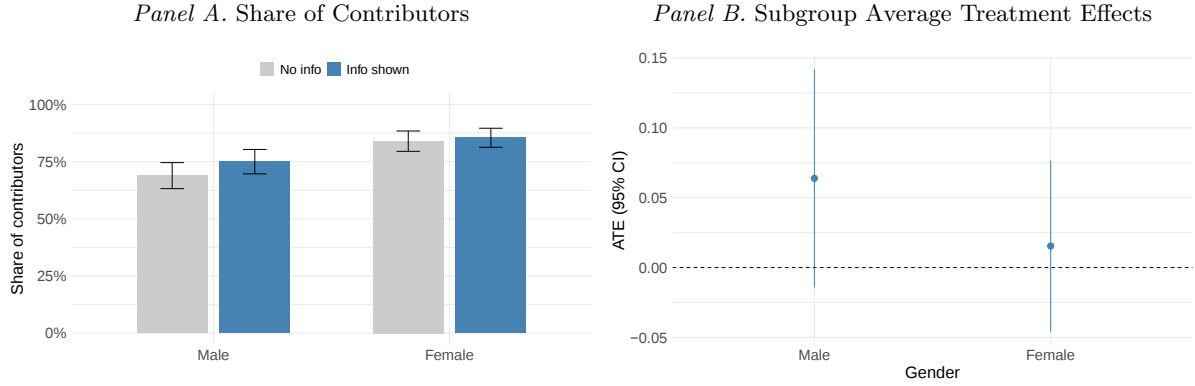


FIGURE A-13 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY GENDER AND ESTIMATED TREATMENT EFFECTS OF PROVIDING GLOBAL INCOME RANK INFORMATION IN THE HIGH ZERO-SUM GROUP.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO. The treatment is the provision of global income rank information. Estimates are based on the causal forest described in Figure A-10, trained on the subsample that was randomized to the high zero-condition that identified as either male or female ($N = 1,043$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each age quintile. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-12 – HETEROGENEOUS EFFECTS OF GLOBAL INCOME RANK INFORMATION ON POLICY PREFERENCES, BY GENDER.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank info	0.021 (0.032)	0.047 (0.032)	-0.102 (0.206)	-0.039 (0.214)	0.050 (0.157)	0.131 (0.184)	0.030 (0.055)
Male	-0.137*** (0.037)	-0.156*** (0.033)	-0.494** (0.215)	-0.514** (0.231)	-0.461*** (0.165)	-0.302 (0.194)	-0.231*** (0.058)
Rank info x Male	0.056 (0.051)	0.009 (0.046)	0.339 (0.300)	0.381 (0.332)	0.348 (0.242)	-0.027 (0.272)	0.093 (0.081)
Observations	1,043	1,043	1,043	1,043	1,043	1,043	1,043

Notes: Each column reports results from an OLS regression including the global income rank treatment indicator, categorical indicators for gender (baseline = female), and their interactions. The sample is restricted to respondents who were randomized to the high zero-sum treatment condition ($N = 1,057$). All regressions include controls for age, education, employment status, political affiliation, and perceived and actual income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount contributed in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4. Education

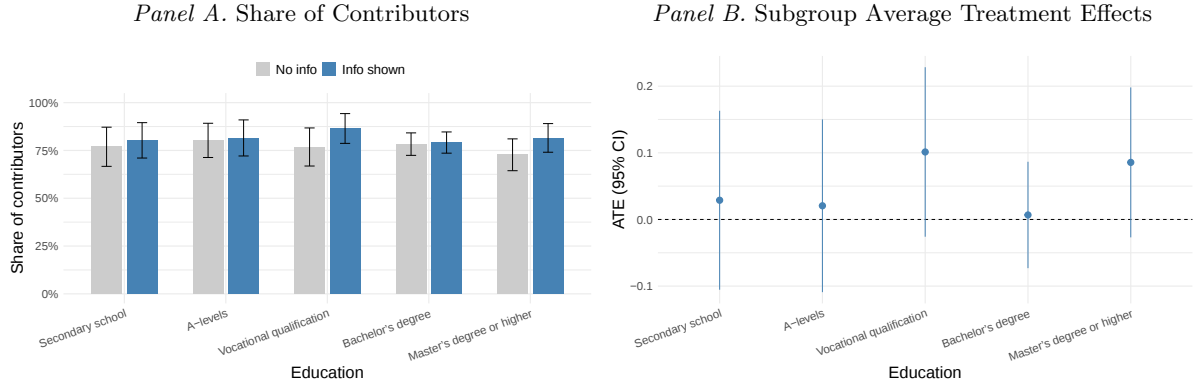


FIGURE A-14 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY EDUCATION LEVEL AND ESTIMATED TREATMENT EFFECTS OF PROVIDING GLOBAL INCOME RANK INFORMATION IN THE HIGH ZERO-SUM GROUP.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO. The treatment is the provision of global income rank information. Estimates are based on the causal forest described in Figure A-10, trained on the subsample that was randomized to the high zero-condition ($N = 1,057$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group and gender. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-13 – HETEROGENEOUS EFFECTS OF GLOBAL INCOME RANK INFORMATION ON POLICY PREFERENCES, BY EDUCATION.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank info	0.049 (0.067)	0.085 (0.060)	0.041 (0.447)	0.656 (0.472)	0.677* (0.361)	-0.546 (0.404)	0.123 (0.109)
A-levels	0.064 (0.072)	0.045 (0.066)	0.062 (0.450)	0.349 (0.466)	0.144 (0.338)	0.244 (0.382)	0.088 (0.107)
Vocational	-0.018 (0.072)	-0.043 (0.059)	0.295 (0.440)	0.540 (0.454)	0.586* (0.342)	-0.373 (0.369)	0.069 (0.107)
Bachelors	0.009 (0.061)	0.056 (0.054)	0.106 (0.395)	0.251 (0.406)	-0.279 (0.310)	0.192 (0.347)	0.045 (0.094)
Masters	-0.045 (0.070)	0.030 (0.061)	0.357 (0.423)	0.648 (0.440)	-0.063 (0.331)	0.699* (0.374)	0.141 (0.103)
Rank info x A-levels	-0.016 (0.094)	-0.054 (0.087)	0.061 (0.580)	-0.514 (0.636)	-0.736 (0.477)	0.419 (0.531)	-0.102 (0.147)
Rank info x Vocational	0.041 (0.091)	0.040 (0.081)	-0.354 (0.586)	-0.795 (0.631)	-1.138** (0.474)	0.916* (0.529)	-0.106 (0.150)
Rank info x Bachelors	-0.030 (0.078)	-0.062 (0.071)	0.110 (0.507)	-0.542 (0.544)	-0.216 (0.413)	0.878* (0.463)	-0.018 (0.129)
Rank info x Masters	0.041 (0.089)	-0.040 (0.079)	0.077 (0.548)	-0.652 (0.585)	-0.372 (0.442)	0.689 (0.510)	-0.047 (0.142)
Observations	1,057	1,057	1,057	1,057	1,057	1,057	1,057

Notes: Each column reports results from an OLS regression including the global income rank treatment indicator, categorical indicators for highest education degree (baseline = secondary school), and their interactions. The sample is restricted to respondents who were randomized to the high zero-sum treatment condition ($N = 1,057$). All regressions include controls for age, gender, employment status, political affiliation, and perceived and actual global income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount contributed in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

5. Perceived Global Income Rank (Prior Beliefs)

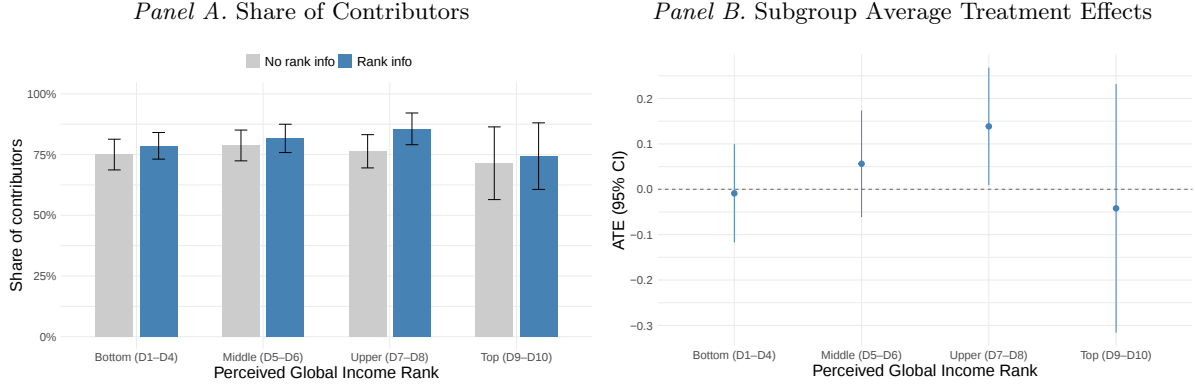


FIGURE A-15 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY PERCEIVED GLOBAL INCOME RANK AND ESTIMATED TREATMENT EFFECTS OF PROVIDING GLOBAL INCOME RANK INFORMATION IN THE HIGH ZERO-SUM GROUP.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO. The treatment is the provision of global income rank information. Estimates are based on the causal forest described in Figure A-10, trained on the subsample that was randomized to the high zero-condition ($N = 1,057$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each perceived global income rank group (prior beliefs). In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-14 – HETEROGENEOUS EFFECTS OF GLOBAL INCOME RANK INFORMATION ON POLICY PREFERENCES, BY PERCEIVED GLOBAL INCOME RANK.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank info	0.047 (0.098)	0.054 (0.081)	0.565 (0.584)	0.981* (0.581)	0.815* (0.445)	0.729* (0.427)	0.284** (0.140)
Decile 1-4	-0.030 (0.079)	-0.035 (0.067)	0.902* (0.483)	1.388*** (0.493)	-0.059 (0.379)	0.313 (0.374)	0.175 (0.123)
Decile 5-6	0.024 (0.078)	0.041 (0.067)	0.979** (0.474)	1.646*** (0.483)	-0.185 (0.372)	0.429 (0.358)	0.238** (0.120)
Decile 7-8	0.027 (0.078)	0.028 (0.066)	0.833* (0.472)	1.553*** (0.471)	0.310 (0.368)	0.536 (0.358)	0.270** (0.121)
Rank info x Decile 1-4	-0.010 (0.106)	-0.018 (0.089)	-0.830 (0.633)	-1.129* (0.642)	-0.795 (0.487)	-1.068** (0.488)	-0.321** (0.155)
Rank info x Decile 5-6	-0.002 (0.107)	-0.035 (0.092)	-0.341 (0.639)	-0.712 (0.654)	-0.294 (0.491)	-0.312 (0.491)	-0.152 (0.157)
Rank info x Decile 7-8	0.034 (0.109)	0.064 (0.094)	-0.382 (0.650)	-0.855 (0.662)	-0.740 (0.504)	-0.412 (0.509)	-0.164 (0.162)
Observations	1,057	1,057	1,057	1,057	1,057	1,057	1,057

Notes: Each column reports results from an OLS regression including the global income rank treatment indicator, categorical indicators for perceived global income rank group (baseline = decile 9 or 10), and their interactions. The sample is restricted to respondents who were randomized to the high zero-sum treatment condition ($N = 1,057$). All regressions include controls for age, gender, education, employment status, political affiliation, and actual income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount contributed in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

6. Actual Global Income Rank

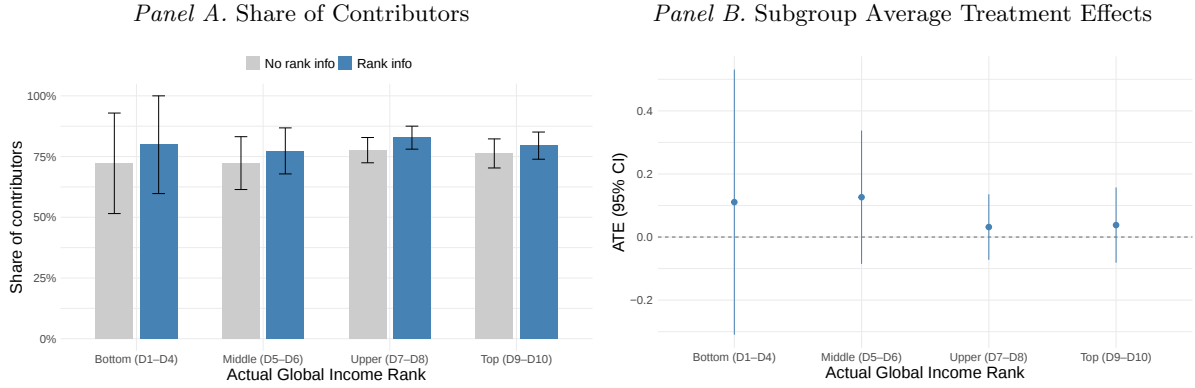


FIGURE A-16 – CONTRIBUTIONS TO INTERNATIONAL NGOS BY ACTUAL GLOBAL INCOME RANK AND ESTIMATED TREATMENT EFFECTS OF PROVIDING GLOBAL INCOME RANK INFORMATION IN THE HIGH ZERO-SUM GROUP.

Notes: The outcome is an indicator for contributing a positive amount to the anti-poverty NGO. The treatment is the provision of global income rank information. Estimates are based on the causal forest described in Figure A-10, trained on the subsample that was randomized to the high zero-condition ($N = 1,057$). The forest was fit with 2,000 trees using honest splitting, a known assignment probability of $p = 0.5$, and data-driven tuning of nuisance parameters (R package `grf`). In Panel A, bars display raw donation rates by treatment group within each actual global income rank group. In Panel B, subgroup ATEs are computed from the forest model using overlap-weighted estimates. See Appendix Table A-1 for variable definitions.

TABLE A-15 – HETEROGENEOUS EFFECTS OF GLOBAL INCOME RANK INFORMATION ON POLICY PREFERENCES, BY ACTUAL GLOBAL INCOME RANK.

	Contributor	Amount contributed	Redistrib.	Internat. org.	Globaliz.	Migration	Outcomes index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rank info	0.035 (0.041)	0.098** (0.039)	0.494** (0.238)	0.294 (0.262)	0.539*** (0.185)	0.495** (0.228)	0.206*** (0.066)
Decile 1-4	0.018 (0.109)	-0.058 (0.084)	0.819 (0.579)	0.503 (0.664)	-0.415 (0.415)	0.240 (0.446)	0.049 (0.162)
Decile 5-6	-0.021 (0.062)	-0.037 (0.056)	1.325*** (0.352)	1.184*** (0.369)	0.623** (0.278)	0.505 (0.314)	0.274*** (0.085)
Decile 7-8	0.012 (0.040)	0.019 (0.037)	0.587** (0.235)	0.562** (0.249)	0.157 (0.182)	0.255 (0.215)	0.135** (0.063)
Rank info x Decile 1-4	0.069 (0.155)	0.085 (0.134)	-0.399 (0.676)	0.182 (0.995)	-0.032 (0.560)	-0.676 (0.868)	-0.028 (0.193)
Rank info x Decile 5-6	0.026 (0.082)	-0.076 (0.073)	-0.918* (0.473)	-0.416 (0.502)	-0.559 (0.388)	-0.834** (0.420)	-0.265** (0.116)
Rank info x Decile 7-8	0.023 (0.054)	-0.080 (0.051)	-0.654** (0.324)	-0.263 (0.356)	-0.482* (0.256)	-0.554* (0.301)	-0.206** (0.088)
Observations	1,057	1,057	1,057	1,057	1,057	1,057	1,057

Notes: Each column reports results from an OLS regression including the global income rank treatment indicator, categorical indicators for actual global income rank group (baseline = decile 9 or 10), and their interactions. The sample is restricted to respondents who were randomized to the high zero-sum treatment condition ($N = 1,057$). All regressions include controls for age, gender, education, employment status, political affiliation, and perceived global income rank. Robust standard errors are reported in parentheses. Contributor is a binary indicator equal to 1 if the participant made a positive donation to an international anti-poverty organization. The amount contributed is the amount contributed in GBP, including participants that did not donate. The remaining outcomes (Redistribution, International redistribution, Globalization, and Migration) correspond to single survey items measuring policy preferences, elicited on a 10-point Likert scale. Higher values indicate stronger support for redistribution, globalization, or migration. The outcomes index is constructed as an equally weighted average of five standardized components: the amount contributed and the four stated support measures. Statistical significance is based on unadjusted p-values and denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

