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## Fairness views and political preferences: Evidence from a large online experiment

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# Fairness Views and Political Preferences - Evidence from a Large Online Experiment

Daniel Muller and Sander Renes\*

May 3, 2017

## Abstract

We elicit distributional fairness ideals of impartial spectators using an incentivized economic experiment in a large and heterogeneous sample of the German population. Our dataset allows us to relate our experimental data on fairness ideals to a large range of socio-demographic characteristics, political preferences and revealed charitable behavior. We document several empirical facts: i) egalitarians are the predominant type, even though egalitarian allocations are Pareto-dominated by maxi-min allocations; ii) females are more egalitarian than men; iii) men are relatively more efficiency-minded; iv) maxi-max preferences are empirically irrelevant; v) left-leaning voters are more likely to be egalitarians whereas right-leaning voters are more likely to be efficiency-minded; and vi) young and highly-educated participants hold different fairness ideals than the rest of the population. Moreover, we show that the experimentally elicited fairness types predict preferences for redistribution and social spending. We also find that egalitarians are more likely to donate to charity than efficiency-minded people, even after controlling for a range of covariates. Hence, our paper also contributes to the emerging literature examining the external validity of laboratory experiments on fairness preferences.

**Keywords:** Distributional fairness, impartial spectator, representative online experiment, external validity, political attitudes.

**JEL classification:** C90, D31, D63.

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# 1 Introduction

How should we divide the pie? This is one of the most fundamental questions we face, and is arguably one of the most important topics in economics. In any distributional question, scarcity of means and plurality of goals collide, while material self-interest and other-regarding concerns can pull individuals in different directions. Recent empirical evidence shows that individuals tend to disagree with each other, which makes finding an acceptable division even harder. It is, for instance, often assumed that left-wing voters are relatively egalitarian, while the political right is thought to focus more on efficiency. Such disagreement about which qualities of a particular allocation are desirable can greatly complicate any discussion that involves distributional concerns. If the difference of opinion between the political left and right is driven by fundamentally different views on what is fair, it is not surprising that political debate on issues like redistribution, the welfare system and the provision of universal health care, tends to become rather heated. Finding an acceptable middle ground will require all parties to make concessions with regard to their moral ideals. Knowledge about these ideals can therefore greatly benefit the search for (universally) acceptable policies and achievable reform.

In this paper we measure the prevalence of four stylized fairness types in a large and heterogeneous sample of the German population via an incentivized experiment embedded in the German Internet Panel (GIP). We depict the distribution of fairness types in Germany and relate these fairness types to personal characteristics, political preferences and charitable giving. We ask participants to select their preferred option from four stylized allocations in two decision tasks. In both tasks, the decision maker selects an allocation of money for two other, anonymous persons. The allocations are constructed in such a way that each fairness ideal (egalitarian, maxi-min, efficiency minded, maxi-max) makes different predictions about what allocation a decision maker is expected to choose. By paying *other* respondents the chosen amounts, we incentivize decision makers to think about which distribution they consider fair.<sup>1</sup> By excluding material self-interest, our elicitation method focuses on pure fairness ideals; it is not concerned with the trade-off between self-interest and moral ideals. We uncover several empirical facts about the distribution of spectator-type fairness ideals. First, the German population predominantly and consistently chooses egalitarian allocations. From an economic point of view these choices are striking: in both choice tasks the egalitarian option is (weakly) Pareto-dominated by at least one other allocation. Second, females are more egalitarian than males across all age groups. Third, males are more

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<sup>1</sup>A comment on the role of incentives in our experiment seems appropriate here. Decision makers in our experiment are not directly paid for their choices. One could therefore argue that only if people are social, that is, if they care about the payoffs for other people, will their decisions actually be incentivized. There is, however, abundant evidence that people do care in economically-relevant ways about payoffs for other people. Hence, pecuniary income for others can serve as incentives for third-party observers who do not have a personal *direct* stake in the allocation.

efficiency-minded than females. This result is very similar to the finding in the literature concerning self-involved fairness, which showed that females are more pro-social.<sup>2</sup> Forth, maxi-max preferences are empirically irrelevant. Given that randomly clicking individuals would have chosen this option in 25% of the cases, we take this as evidence that individuals make deliberate choices. Fifth, our results show that left-leaning voters are more likely to be egalitarian, whereas right-leaning voters are relatively more likely to be efficiency-minded. Researchers often assume a relationship between distributive ideals and political preferences, but up to now very little empirical evidence existed to back this up. A noteworthy deviation from this trend can be found at the very extremes of the distribution. Both individuals who place themselves at the extreme-left or at the extreme-right end of the political spectrum are overwhelmingly egalitarian. Sixth, age, education and earnings all significantly correlate with fairness ideals. Since these are exactly the characteristics in which the student population differs from the general population, this should serve as a warning that laboratory results about social preferences cannot be directly extrapolated.

The panel structure of the GIP survey provides a unique opportunity to relate the choices in our experiment to stated and revealed preferences regarding situations in which we expect fairness preferences to matter. Our analysis shows that compared to efficiency-minded individuals, egalitarians and maxi-min types are more likely to favor redistributive taxation in Germany. Furthermore, we see that the fairness ideals of the voter-base of the largest German party are close to those held by the average voter. Efficiency-minded individuals are relatively more likely to be found in right-off-center parties. We are also able to connect our experimental data to information on whether participants donated the money they received for participating in the GIP to charity. Consistent with ex-ante expectations, we find that egalitarians are more likely than other types to donate to charity, while maxi-min types are weakly more likely to donate than efficiency-minded individuals.

The possible influence of moral ideals held by outside observers is large in the political field, since in many political or policy decisions an individual's self-interest is not, or only indirectly, involved. Voters are asked to decide on many policy proposals that may never directly affect them, from the availability of birth control to women (for male voters), to a marginal change in tax rates for incomes above their own, to the placement of a large (nuclear) power plant far away from their homes. Despite the, at best, indirect connection between their personal life and such proposals, males, US conservatives, unions, and environmental organizations respectively, have put up very strong campaigns lobbying for or against them. Clearly these policies matter to voters, even if they are not personally affected by them. Spectators play an important role in the legal system. There is no clear link between the life of the jury members and the verdict they give. Yet many juries take considerable time deliberating, which shows their willingness to expend their own time in the

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<sup>2</sup>In a meta-study of the dictator game, Engel (2011) finds that women give significantly more than men.

interests of a more just or fairer outcome. The same can be said of judges, particularly those on the constitutional courts with life-long appointments. A spectator’s view also plays a vital part when a company or person declares bankruptcy. A neutral third party is brought in to determine a fair way of distributing the (insufficient) assets over the competing claims. Every bankruptcy therefore involves an impartial spectator’s judgment about what is fair. Despite the importance of spectator’s judgments, existing empirical evidence focuses mostly on situations where the decision maker has a personal monetary stake in the outcome.

We proceed as follows. In Section 2 we briefly discuss existing theoretical and empirical fairness research. Section 3 describes the survey and the experiment. Section 4 depicts the distribution and correlates of fairness views in the German population. Section 5 shows that fairness measures have predictive power for preferences for redistribution, the desired income tax rates and revealed charitable behavior. Section 6 concludes the article.

## 2 Different Views on Distributive Justice

Economists have recently shown a great interest in fairness preferences, though mostly in situations where the decision maker has a stake in the distribution, and no uncertainty about her own position ex-ante. In the laboratory, such a situation is mimicked by the classical dictator game (Kahneman, Knetsch, and Thaler, 1986) in which a decision maker decides on how to split a pie between herself and one other person. This game has had a large impact on economics through the insight that people often care about the income of others, and consequently led to the development of *social* preference models (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000, e.g.) that emphasize not just the personal stake in allocations, but also the perceived fairness or equity of the results. Besides the recent interest in perceived fairness, there is a long tradition of studying impartial fairness from a normative point of view in philosophy, economics, and political science. In this tradition, researchers are interested in how a decision maker should choose between different income distributions. In their seminal works Harsanyi (1953) and Rawls (2009) famously propose that, in order to achieve a just decision, the social planner needs to be behind the *veil of ignorance*, that is, in a situation where she is ignorant of her own income, social status, wealth, abilities etc. In this *original position*, social planners are, according to the proponents of this theory, then able to make judgments about income distributions, which are free of self-interest. Hence, the veil of ignorance can be seen as a thought experiment aimed at reaching impartiality of decision makers, which in turn should lead to fair and just outcomes.

Another device that uses impartiality to reach fairness is the “impartial spectator”.<sup>3</sup> The concept

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<sup>3</sup>In this paper we use the terms ‘impartial spectator’ and ‘third party spectator’ interchangeably. Konow (2009) also uses the term ‘quasi-impartial spectator’ to clarify that the strict conditions assumed to reach impartiality might

of an impartial spectator in economics traces back to Adam Smith (2010), but a similar separation between self-interest and judgment is also pursued by Hume (2013) when he refers to “the general point of view”. The main difference between the impartial spectator and the participant behind the veil of ignorance is that the outside spectator will never be involved in the distribution that is being evaluated. In Smith’s words, she is only assumed to be “sympathetic” to the stakeholders. Moreover, while planners behind the veil of ignorance are not permitted to acquire any information that could introduce a self-interested bias, the impartial spectator is explicitly encouraged to gather information helpful in reaching a better or fairer decision.

Empirical literature on fairness echoes the theoretical debate, with some studies using a set-up inspired by the veil of ignorance and others using spectator judgments. Most empirical papers based on the veil of ignorance are versions of dictator games with uncertainty about the decision maker’s position in the final allocation (see for instance Bosmans and Schokkaert (2004) and Schildberg-Hörisch (2010)). In contrast, the majority of empirical papers that focus on spectator judgments are vignette studies.<sup>4</sup> The incentivized impartial spectator we use in our experiments was already successfully used by Konow (2000) to test the accountability principle as a basis of perceived fairness.

Traub et al. (2005) highlight the importance of the distinction between spectator and veil of ignorance judgments, as well as the importance of the amount of information possessed by their subjects when making a moral judgment. They find a statistically significant difference between the choices made by subjects when they switch from a self-concern (veil of ignorance) to an umpire mode (impartial observer). Subjects informed about both the support and the associated probabilities of the lotteries they were asked to judge, are more inequality-averse as umpires. Subjects who only know the support, but not the associated probabilities are less inequality-averse as umpires, compared to their choices made behind the veil. Similarly, Croson and Konow (2009) compare behavior under the veil of ignorance with impartial spectators and find that “stakeholders are less inclined to respond to the generosity of others than are spectators”. More recently, Becchetti et al. (2011) show that impartial spectators and to a smaller extent stakeholders under the veil, both reward talent more strongly than the informed stakeholders.

Konow (2009) presents some interesting results regarding the choices of impartial spectators. His vignette study shows that spectators are more likely to agree with each other when they possess more information. This finding suggests that the impartial spectator, or “quasi-spectator”, in the tradition of Smith is an attractive approach to elicit fairness preferences, since one can hope to find agreement when all relevant information is known. Amiel, Cowell, and Gaertner (2009), using a vignette survey with students in several countries, present evidence suggesting that impartial spectators behave in a more social way (i.e. transfer more money) than involved participants.

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not be completely fulfilled in real life.

<sup>4</sup>For an excellent overview, please consult Gaertner and Schokkaert (2011).

Fairness views of third party spectators have also been studied by Cappelen et al. (2013) who look at fairness views on risk-taking. They find that stakeholders and spectators act on the same fairness views but to a different extent. Aguiar, Becker, and Miller (2013) compare fairness views of planners behind the veil of ignorance, impartial spectators and ‘ideal observers’ (who are assumed to be omniscient) in order to find out which of those procedures is most useful in ensuring impartiality. They find that the ideal observers choose significantly more equal distributions than stakeholders behind the veil or impartial spectators.

In this paper, we use an incentivized spectator setting, similar to several recent laboratory experiments. Dickinson and Tiefenthaler (2002) study the fairness views of spectators when subjects earn their position. Their results indicate a variety of different fairness ideals exists within their student population. However, in contrast to our study, they do not classify people into types. Mollerstrom, Reme, and Sørensen (2015) use the impartial spectator to study the perceived fairness of controllable versus uncontrollable luck. Their results show that spectators often adjust their fairness views based on the what part of the outcomes was under the participants’ control. Moreover, a ‘benevolent dictator’ (a third party observer) is used in Cettolin and Riedl (2016) as a device to elicit fairness ideals under conditions of uncertainty. Their result indicates that the fairness of uncertain allocations, like their certain counterparts, is judged according to a variety of different ideals.

## 2.1 Fairness Types

Normative theory has carved out several ideal-types of distributive justice. Most famously, Rawls (2009) suggested that, if people were to be placed behind the veil of ignorance, they would choose distributions according to the *difference principle*. This principle selects the distribution that maximizes the minimum income. Based on the assumed general acceptance and impartiality of the participant behind the veil, he argues that this maxi-min rule is the only moral or fair selection criterion. However, from an empirical point of view, support for this principle seems somewhat less compelling. Frohlich, Oppenheimer, and Eavey (1987), Frohlich and Oppenheimer (1990) and Frohlich and Oppenheimer (1992) find very little support for the maxi-min principle, instead many participants endorse the efficiency principle with a floor constraint, i.e. maximize the sum as long as a minimum income is guaranteed. Mitchell et al. (1993) on the other hand find considerable support for Rawls’ maxi-min principle in a hypothetical society-veil of ignorance experiment. Similarly, Michelbach et al. (2003) find that a ‘considerable minority’ uses maxi-min as a decision criterion.

The (weak) Pareto principle allows another simple approach to distributive justice. If in allocation  $\mathcal{A}$  at least one person is better off and no one is worse off than in allocation  $\mathcal{A}'$ , then  $\mathcal{A}$  should be preferred to  $\mathcal{A}'$ . While this principle is compelling, it does not provide a complete ranking

of all potential allocations. To complete the ranking of allocations, one has to compare losses of one individual with the gains of another. If these are treated equally, this boils down to the simple efficiency ranking proposed for instance by Posner (1983). In the monetary allocations in our experiments, efficiency yields the same ranking of distributions as Harsanyi’s (1953; 1955) utilitarianism, as long as one assumes that utility is linear in income. Hence, to the extent that utility functions are linear over the stakes in our experiment, utilitarianism does not require separate attention in this paper. Efficiency concerns have been shown to play an important role in settings with personal stakes in the distribution of money, see Andreoni and Miller (2002); Charness and Rabin (2002) and Engelmann and Strobel (2004) but less is known in situations involving impartial spectators.

A third, simple comparison rule for allocations is proposed by egalitarianism, see e.g. Roemer (1996). In this philosophy, equality is considered the only moral or fair criterion by which to judge outcomes. Hence, in this view, *differences* in outcomes (like income) should be minimized. Although there is some discussion about what should be equalized, egalitarians are expected to redistribute windfall gains, such as any earnings from the experiment, equally. In our experiment, egalitarianism violates the Pareto principle, as the egalitarian allocation is dominated by the maxi-min allocation. Intriguingly, we find that egalitarianism is the most popular ideal-type.

Finally, one can also obtain a (partial) ranking of allocations based on the maximization of the highest income. Admittedly, this maxi-max criterion seems like a rather theoretical possibility. It does, however, give a complete and transitive ranking of the alternatives (Brafman and Tennenholtz, 1997). We included this criterion mostly as a test for the reliability of our data. If it is chosen in roughly the same proportion as our other criteria, this could be a signal of random choice by our participants. Nevertheless, it is ultimately an empirical question whether people do or do not follow this ideal, and we decided to put this question to a direct test. As it turns out, maxi-max preferences are empirically irrelevant.

These are the four types of idealized fairness concerns that we distinguish in our experiment. We exploit the fact that these different normative theories predict different choices, to assign a fairness type to our participants.

Our study also contributes to the question of whether the fairness ideals held by students are similar to those found in the rest of the population, and whether laboratory measures are useful for predicting behavior outside of this closed world. Recently these questions have attracted much attention.<sup>5</sup> The consensus seems to lean towards a finding that students are less social (less inequity averse) than the rest of the population.

The scarce evidence available has so far been confined to the fairness view of stakeholders. This gap in the literature has, for example, been noted by Konow (2003). To the best of our knowledge,

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<sup>5</sup>See for example Cappelen et al. (2007), Bellemare, Kröger, and Van Soest (2008), Gaertner and Schokkaert (2011), Fisman, Jakiela, and Kariv (2014) and Cappelen, Nygaard, Sørensen, and Tungodden (2015).

ours is the first study to elicit fairness ideals of an impartial spectator in a large and heterogeneous sample using an incentivized experiment. Hence our experiment has the potential to inform the debate in the social preference literature, as well the empirical social choice literature. Our finding, that young, highly-educated participants are systematically different from the remaining population, should serve as a warning that laboratory findings cannot always be directly extrapolated to the general population. At the same time, our results on stated political and policy preferences, as well as actual donations to charity, indicate that the experimental measures of fairness in our experiment do partly capture preferences that influence field behavior.

## 3 Data

### 3.1 The German Internet Panel

The experiment presented here was part of wave 20 (November 2015) of the German Internet Panel (GIP) which as of 2016 has regularly surveyed approximately 4,000 participants online. The GIP is maintained by the collaborative research center 884 “Political Economy of Reforms” at the University of Mannheim. The GIP uses a probability-based sample of the German population between the ages of 16 and 75 years. The recruitment of participants was done offline using face-to-face interviews. During recruitment of the sample, special care was taken to include people that in general do not have access to the internet (for example by handing out tablets and computers).<sup>6</sup> A new wave is fielded every second month and all enrolled participants are invited to take part. Each wave takes around 20 minutes to answer in total.

The repeated nature of the survey is a big advantage for our research. It allows us to relate our experimental measures to demographic information and information about political and policy preferences collected in other waves of the GIP. In terms of topics, the GIP predominantly covers attitudes towards reform policies, the (welfare) state and general political opinions. The data from this survey are available for scientific use via the data archive of the GESIS Institute for Social Science. Participants are paid a flat fee for participation in each wave, and additional payments are made if a participant completes all waves in a year. To this end, all participants hold an account with the GIP. Data about these payments are not usually available for research, but researchers connected to the collaborative research center can access them through a secure data facility and we use this data in Section 5 when we discuss charitable giving by our respondents.

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<sup>6</sup>For more information on sampling procedures and other logistical issues please consult Blom, Gathmann, and Krieger (2015), Blom, Herzing, Cornesse, Sakshaug, Krieger, and Bossert (2016) and Blom et al. (2016).

## 3.2 The Experiment

The standard approach in empirical justice research is the vignette study. Respondents are confronted with a hypothetical situation and given the relevant context, then they are asked to provide their judgment. Vignettes have certainly proven to be a useful instrument in empirical justice research.<sup>7</sup> However, we believe that following the standard methodology of experimental economics has distinct advantages in our setting. First, it is unclear how to relate answers in vignette studies to the political variables and socio-demographic characteristics that we are interested in, without explicitly asking about similar problems. By using an abstract frame, and avoiding loaded words like ‘fairness’ or ‘distribution’ we avoid the usual connotations associated with such words. This allows us to identify more stable, underlying preferences that are context-free and thus translate to other decisions as well. Second, many participants in the GIP might not be willing to read lengthy texts which describe the moral scenario to be evaluated in a vignette. Our design allows us to be brief and work without extensive explanations. Monetary incentives are the paradigm in experimental economics, mainly to induce subjects to think carefully about their choices and to minimize concerns about experimenter-demand effects and hypothetical and social-desirability biases. As such, we consider them a vital part of our experiment.

The experimental task consists of two multiple-choice questions. Each question asks respondents to indicate their preferred allocation from four different options. Each allocation specifies a distribution of money over two other, unknown participants of the same experiment. The allocations are designed such that each of the allocations corresponds to a different classical fairness ideal: maxi-min, egalitarianism, efficiency-mindedness, or maxi-max.<sup>8</sup> The sum of the payments in each allocation is also shown to participants. The order of the options in every decision task is randomized across participants. Table 1 shows the options in the two tasks.<sup>9</sup>

Participants were clearly told in the instructions that, 200 randomly selected choices (50 for each of the 4 decision tasks in the larger experiment) would be paid-out to 400 randomly chosen recipients. Participants were not eligible to be selected more than once for payment. As can be seen in Table 1, the average monetary value of each choice was around 20 Euro (\$22 at the time the survey was in the field), which is more than twice the German federal minimum hourly wage. The selection of the winners was done via the participant ID which identifies the participant in each wave.

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<sup>7</sup>Please see Konow (2003) and Gaertner and Schokkaert (2011) for excellent reviews and Faravelli (2007) for a classical, but relatively recent (third party spectator) vignette study on fairness views.

<sup>8</sup>Screenshots of the design can be found in the appendix.

<sup>9</sup>The experiment presented in this paper was part of a larger set-up, combining two different experiments on fairness preferences. In each of the two parts, subjects made two choices about the distribution of money between two other randomly-selected, anonymous respondents. The second part of this experiment however involved two choices with risk in the final allocation. This second part is thus conceptually very different from the first part and will not be discussed in this paper.

|          | Egalitarian | Maxi-min | Efficiency | Maxi-max |
|----------|-------------|----------|------------|----------|
| Choice 1 | (8,8)       | (10,9)   | (15,7)     | (16,2)   |
| Choice 2 | (8,8)       | (9,8)    | (12,6)     | (13,3)   |

Table 1: Allocations of money (in Euros) participants are asked to choose from in the experiment (in Euros). Note that we allow a maxi-min decision maker to be indifferent between (8,8) and (9,8) in choice 2.

However, this cannot be used to obtain any personal information, such as name and address of the person concerned. The subjects who received a payment from the experiment were informed about their winnings via e-mail, and payments were made via their account at the GIP. This allowed us to ensure anonymity of our respondents. All of this was explained in the experimental instructions, so subjects were aware of this set-up before making their choices.

When explaining the incentives, we avoided the word “probability”. Instead, we explained that we would pay 400 randomly-selected participants according to 200 randomly-selected decisions. We also informed participants that about 3500 respondents were expected to participate in the GIP wave. We believe that this approach made it easier for subjects to understand the relevant probabilities. In general, the experiment was short and easy to understand, something we consider a distinctive advantage of the impartial spectator and neutral frame.

Around 4,000 participants were invited to participate, 3,159 took part in the survey and 2890 participants completed our experiment. The GIP records the time it takes participants to complete the survey. We drop all participants who spent less than 30 seconds on our experiment (215), leaving us with 2675 participants. Our conclusions remain virtually identical if we include all respondents, but standard errors increase. Moreover, and more importantly, we drop 486 participants who were not consistent across the two questions. This means, in our analysis we only use the 2189 participants who chose in accordance with the same idealized fairness type in both decision tasks.<sup>10</sup> Note that the amount of consistency found already indicates that choices were not made randomly. We lose less than 20% of observations in this step, while with random choices we would have lost 75%.

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<sup>10</sup>We allowed for maxi-min types to be indifferent between the egalitarian and the maxi-min option in choice 2. That is, we do not assume that maxi-min subjects necessarily follow the stricter lexicographic interpretation of the maxi-min rule. Our conclusions are however hardly affected by this definition.

## 4 The Distribution of Fairness Ideals in the German Population

We begin by depicting the raw distribution of fairness ideals in Germany. This is important for several reasons. First, empirical evidence on the distribution of fairness ideals of outside spectators is rare, although examples in which people make judgments in such a situation are abundant in real life. Second, we can relate the preferences to personal characteristics of our respondents, which allows us to better understand how these preferences change with income, age and education. Since there are large differences in these variables across different populations, this could help to explain differences in political and redistributive preferences between countries or groups. Finally, we are able to compare students with the rest of the population, which is important because experimental findings generally rely almost exclusively on student samples. As we show here, highly-educated, young participants are quite different from the rest of the population. This implies that conclusions on fairness ideals based on students, will most likely differ from those based on the general population.

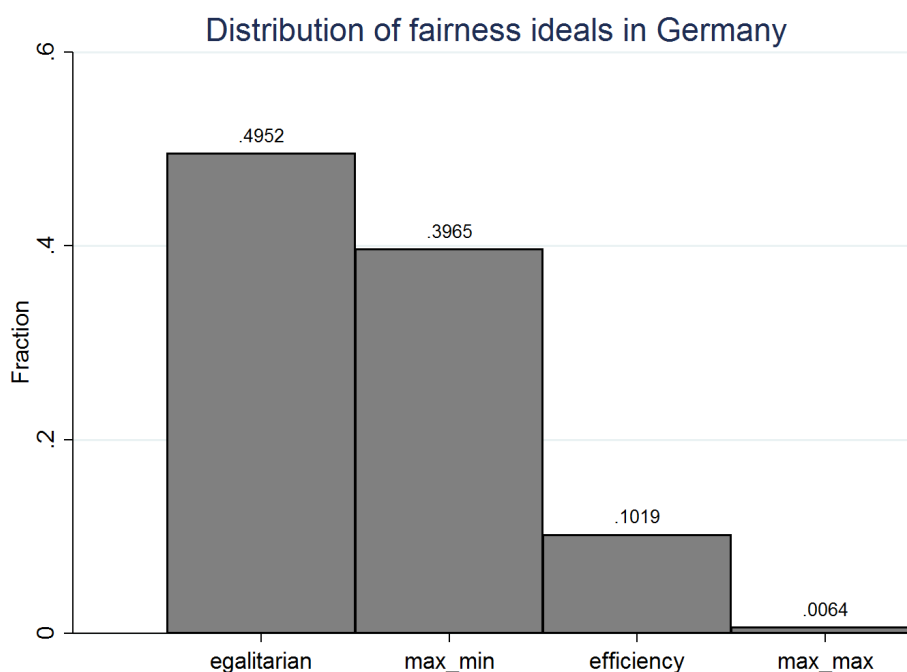


Figure 1: Distribution of fairness ideals.

Figure 1 depicts the distribution of consistent fairness types in our sample of the German

population. The most popular option, with roughly half of the choices, is egalitarianism while maxi-min and efficiency are chosen by the other half of the participants. This pattern is striking, since the egalitarian option was dominated by the maxi-min allocations. In economic terms, this finding implies that half of the participants in our sample demonstrate a willingness to reduce incomes in order to achieve more equality. Most experimental studies find more subjects who focus on efficiency and less egalitarian choices. In a related experimental setting, Engelmann and Strobel (2004) find that selfishness, maxi-min and efficiency-mindedness explain most choices, while egalitarian preferences (or inequality aversion) do not predict as well.

Figure 2 depicts fairness ideals of the population split into four subgroups: current students plus three different educational levels of non-students. We split the sample of non-students according to the highest attained level of general education: those who had no vocational training (low); those who had some vocational training (mid); and those who had passed the grade required to start college (high). The Figure clearly shows that students are different from the rest of the population. A  $\chi^2$  goodness-of-fit test rejects the null hypothesis of similarity of the distribution of students and non-students at all normal confidence levels ( $\chi^2$  on independence of the distribution yields  $p < 0.001$ ). Even compared to the highly-educated non-students, students are less likely to choose the dominated egalitarian allocations. At the same time, both students and the highly-educated are about twice as likely as the lower-educated respondents to select the efficiency-maximizing allocation. These findings hold important implications for empirical justice research which builds on laboratory/classroom experiments, as it shows that the prevalence of maxi-min types and efficiency types might be systematically overestimated in such studies.<sup>11</sup> This difference is particularly striking since we have a random sample of students, without a selection bias in favor of students studying economics. Even the general student population selects according to efficiency and maxi-min ideals more often than the non-student population. This suggests that the differences in the distribution between laboratory and general population is not just due to training in economics.

A similar picture emerges in Figure 3 where we plot the distribution for different age groups. In particular, in the age group of 16 to 34 years, maxi-min is the modal choice, whereas in all other age groups egalitarians are most numerous ( $\chi^2$  on independence of the distribution yields  $p < 0.001$ ). The fraction of efficiency-minded people mildly decreases with age. The fraction of maxi-max types is again negligible in all four age groups.

Two findings catch the eye in Figure 4, where we compare the distribution of fairness ideals between male and females. First, females are clearly more likely to prefer the egalitarian allocation, and second, males are more likely to prefer the efficient allocation, although egalitarians are also the predominant types among males ( $\chi^2$  on independence of the distribution:  $p < 0.001$ ). This

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<sup>11</sup>It also relates to the discussion on the role of efficiency-mindedness among students in Engelmann and Strobel (2004) and Fehr, Naef, and Schmidt (2006).

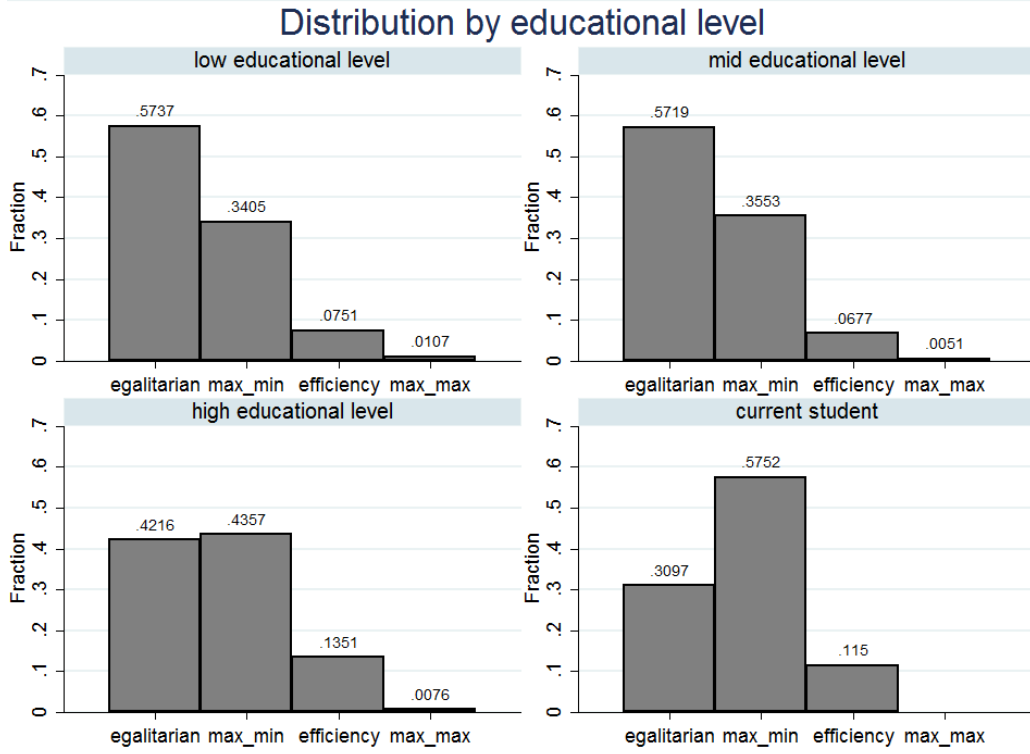


Figure 2: Fairness ideals by education. Current students (right bottom), no vocational training (low education), with vocational training (mid), grade required to start college (high).

finding seems to confirm previous findings, see for example Michelbach et al. (2003) who find that females are more egalitarian than men. The difference between men and women seems to be consistent across age groups, men are more likely to be efficiency-minded and women more likely to be egalitarian, regardless of the age quartile (not reported separately).

Figure 5a depicts fairness ideals by self-reported monthly net income. We have merged the income brackets with the lowest and highest 10% of the distribution to avoid cells with very small numbers of observations. While we do not find any sudden shifts in the distribution between the different income levels, there are some visible trends. The distribution becomes less ‘downward sloping’ as income increases ( $\chi^2$  on independence of the distribution:  $p < 0.001$ ).

This shift is mostly caused by the decrease in the fraction of egalitarians and the increase in the fraction of efficiency-minded people in the higher income brackets. In particular, the top ten percent are almost as likely to choose the maxi-min allocation as they are to choose the egalitarian allocation. However, they are almost four times more likely to choose the efficient allocation than are the bottom ten percent.

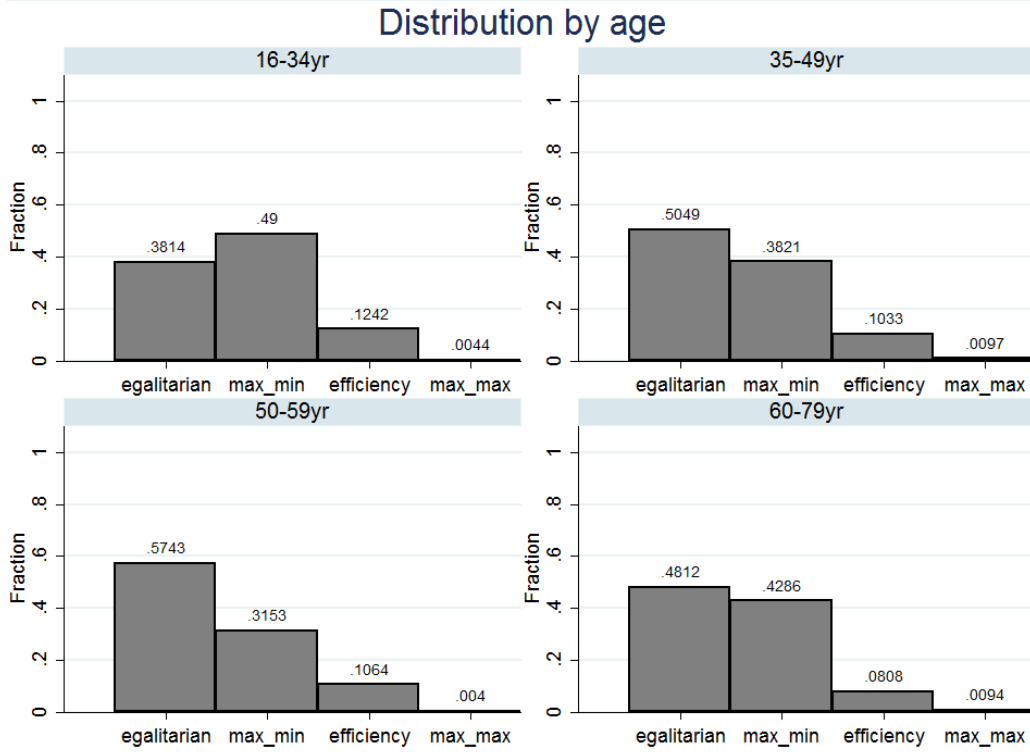


Figure 3: Fairness ideals by age.

Figure 5b plots the same distribution by employment status. As before, we conclude that students (at school and at university) are the exception, rather than the rule. They are the only group where maxi-min and not egalitarian types are clearly modal and they are relatively likely to choose efficiency. Another group that visibly stands out is made up of participants not currently employed (either unemployed or house-makers). Here, egalitarians and maxi-min types are approximately balanced. It appears that employment status is a relatively strong predictor of these preferences ( $\chi^2$  on independence of the distribution yields  $p < 0.001$ ).

#### 4.1 Regression Analysis

In order to assess the relative importance of these factors, we try to predict the observed fairness types in a set of one-versus-all regressions.<sup>12</sup> We standardize all explanatory variables by subtracting the mean and dividing by the standard deviation of the explanatory variables. Table 2 reports the

<sup>12</sup>Note that we do not run regressions against the maxi-max types, since there are only 14 participants who we consistently classified as maxi-max.

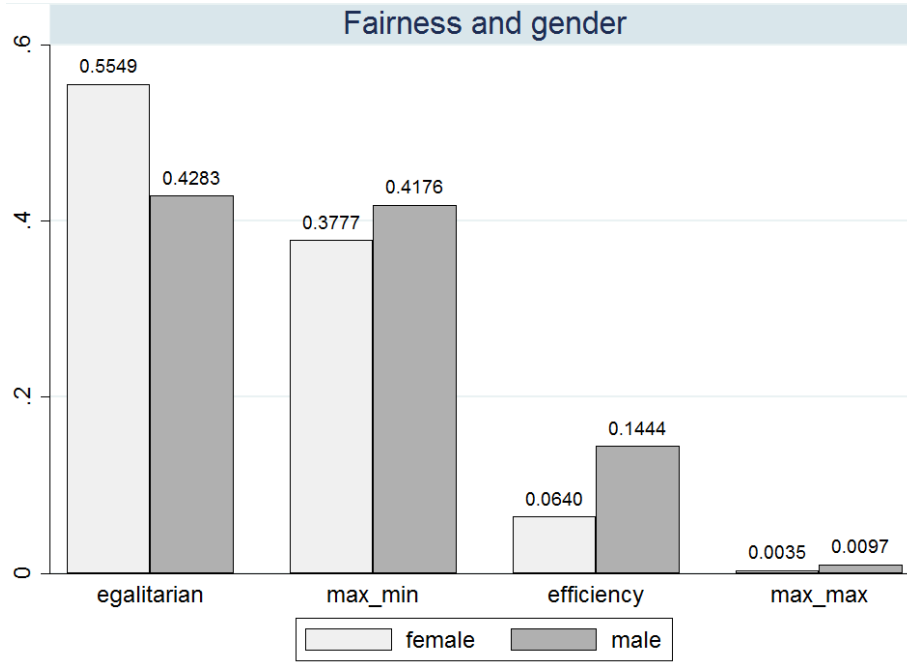


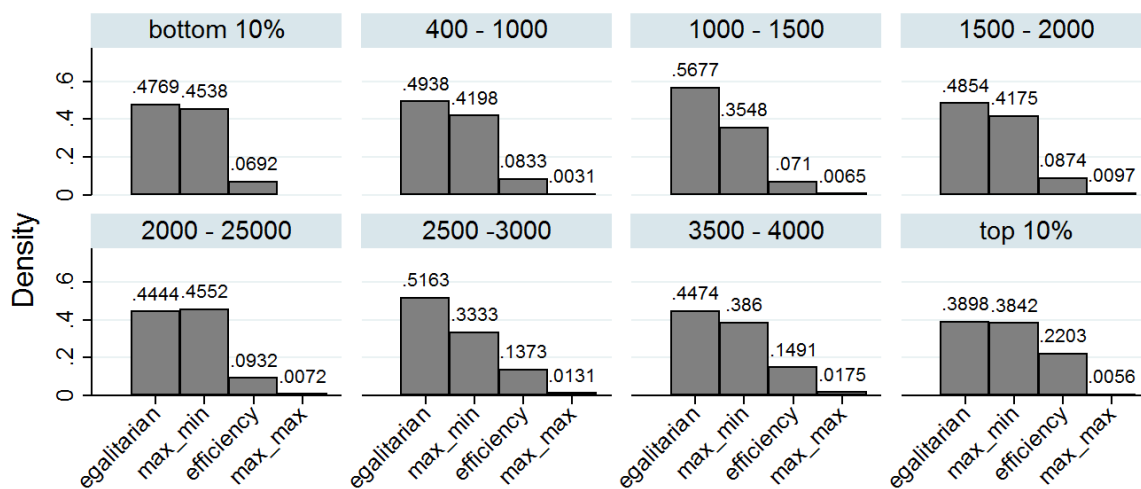
Figure 4: Fairness ideals by gender.

results.

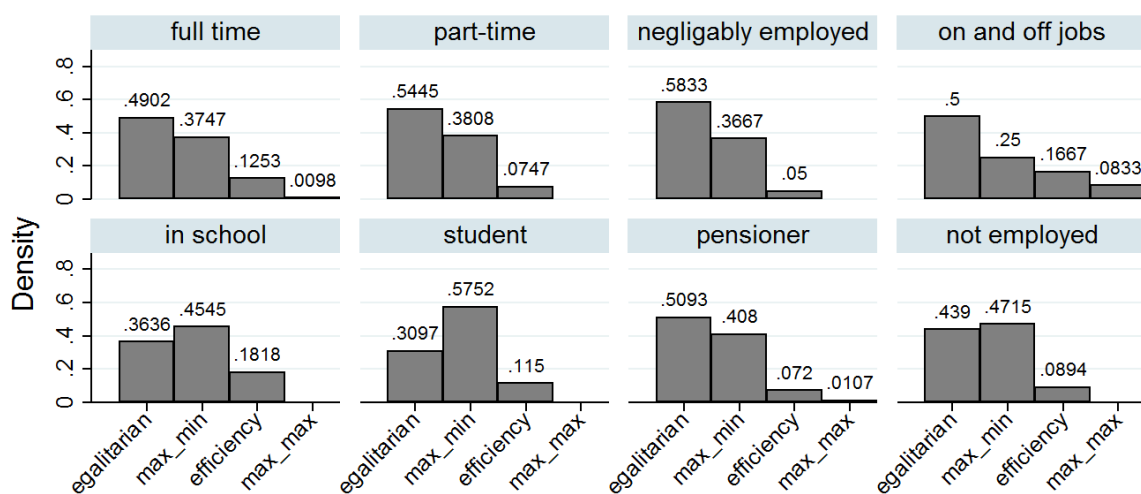
The regressions mostly confirm our earlier conclusions. We find that gender and education are the strongest predictors of fairness types. Males are much more likely to be efficiency-minded and less likely to be egalitarian. A higher education mostly seems to shift individuals away from egalitarian preferences. Increases in age are related to an increase in the fraction of egalitarians and a decrease in the efficiency-seeking type. Although the student population clearly holds different fairness ideals than the rest of the population, as indicated by the  $\chi^2$  test, this effect does not survive when we control for more covariates simultaneously. This is an indication that students are not different per se, but that difference between the student population and the non-student population is driven by a composition effect. Income turns out to be significant only in predicting maxi-min and efficiency-minded types (columns 1 and 3), respectively. The last variable, “East” is an extra control we added to account for the part of Germany in which the participant lives. It is the standardized version of a dummy that is equal to 1 if the participant lives in former East-Germany.<sup>13</sup> As can be seen from Table 2 though, this control does not appear to be a significant predictor of fairness preferences.

<sup>13</sup>Due to privacy concerns the dataset does not let us differentiate between Berlin and Brandenburg (the state surrounding Berlin), so that inhabitants of Berlin are coded as living in East-Germany.

## Fairness by income and occupation



(a) Fairness ideals by personal monthly net income (in Euros).



(b) Fairness ideals by occupation.

|              | (1)<br>Egalitarian     | (2)<br>Maxi-min       | (3)<br>Efficiency      |
|--------------|------------------------|-----------------------|------------------------|
| Age          | 0.0156<br>(0.0135)     | 0.00121<br>(0.0137)   | -0.0164*<br>(0.00865)  |
| Student      | -0.00564<br>(0.0103)   | 0.0168<br>(0.0107)    | -0.0100*<br>(0.00585)  |
| Income       | -0.00487<br>(0.0132)   | -0.0263*<br>(0.0134)  | 0.0301***<br>(0.0103)  |
| Male         | -0.0584***<br>(0.0117) | 0.0210*<br>(0.0116)   | 0.0343***<br>(0.00713) |
| Education    | -0.0756***<br>(0.0134) | 0.0545***<br>(0.0133) | 0.0217***<br>(0.00797) |
| East         | 0.0166<br>(0.0133)     | -0.0174<br>(0.0130)   | -0.000977<br>(0.00789) |
| Constant     | 0.515***<br>(0.0129)   | 0.387***<br>(0.0126)  | 0.0908***<br>(0.00705) |
| Observations | 1,795                  | 1,795                 | 1,795                  |
| R-squared    | 0.044                  | 0.019                 | 0.040                  |

Table 2: Explanatory power of individual characteristics. OLS regressions, dependent variables are dummies that equal 1 if the individual is of that type. All explanatory variables are standardized. Robust standard errors are given in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## 5 Fairness Views: Politics, Policy and Charitable Behavior

In the previous section we related fairness ideals to observable demographics, but for these ideals to be economically meaningful, they should influence preferences and decisions. In this section, we look at three aspects where preferences and decisions are likely to be influenced by fairness ideals. First, many governmental policies influence the distribution of income. We therefore expect distributional preferences to influence preferences over policies, in particular for policy areas that directly deal with income (re-)distribution. Second, if individuals want to express their fairness ideals at a societal level in a democracy, they can do so by voting for parties with a policy platform that delivers the distribution closest to their optimal policy. If voters indeed vote in accordance with their preferences for fairness, we should find that voters with similar preferences vote for similar parties. Third, individuals can be motivated to donate to charity out of a concern for others, or a concern for social justice. Both of these concerns are likely to correlate with fairness ideals. In this section, we test whether our experimental measures can be used to predict preferences and choices of our participants, with respect to these three aspects of their lives.

### 5.1 Preferences for Redistribution

The GIP has over 20 waves to select questions from, which can lead to multiple comparison problems. To prevent identifying spurious relationships, we first searched for questions that were repeated verbatim, related to redistribution or taxes, and had more than 1000 respondents in common with our experiment. This uniquely identified our first policy question. This first question only covers the desirability of government intervention, but not the willingness to pay for redistribution. To complete the picture, we searched for questions about the tax-system, again using the restriction that it needed to have more than 1000 respondents in common with our experiment. We found one question that satisfied this restriction and was on a similar 5-point Likert scale as the other questions, and was therefore suited for our purposes. The questions we identified are (translated from German):

1. Please rate how much you agree with the following statement: The government should take measures in order to reduce income inequality. (Columns 1- 3)
2. Should people who earn more because they work more, be taxed more? (Column 4)

These questions were asked in wave 15 (fielded January 2015), wave 17 (fielded May 2015) and wave 21 (fielded in January 2016).<sup>14</sup> In both questions, participants were asked to indicate their

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<sup>14</sup>Complete translations from German can be found in the Appendix.

opinion on a 5-point Likert scale. We recoded the answers so that they run from 0, least willing to accept taxes, to 4, most willing to accept taxes.

In all regressions, the egalitarian types are used as the reference group. The coefficients on the other three types consequently display the average difference in policy preference of individuals between that type and the egalitarian type. In column (1) and (3) the question was embedded in a survey experiment, in those waves the order of the questions in the survey was randomized over two groups of participants. We control for potential differences by including a treatment dummy in both cases.

Table 3 shows that experimental fairness preferences are predictive for policy preferences, even after controlling for the standard battery of individual characteristics.<sup>15</sup> In all cases the coefficients on the non-egalitarian types have the expected sign. In line with expectations, efficiency-minded people are consistently less likely to favor high income taxes. Looking at the first three columns, it is particularly reassuring to find that the predictive power is robust over time. Even though wave 15 and 21 are a year apart, the relationship between our measures and participants' opinion on government redistribution seems robust and in line with what one would expect ex-ante. Given that there are only 14 maxi-max types, we do not have the statistical power to differentiate them from the rest. It is remarkable, however, that we never find a significant difference between the maxi-min types and the egalitarians in these policy preferences. If one looks at the numbers of observations for both types and the size of the coefficients, this does not appear to be driven by standard errors. Although both types can be said to be redistributive, there are differences if one looks at correlations with observable characteristics (see Section 4) and charitable behavior (as we will show below). In their attitude towards redistributive taxation within the current German system, however, they seem to be very similar.

Looking at the control variables, we do find some interesting results. First, the positive coefficient on the male dummy is remarkable. Men seem to favor *more* redistribution and *more* intervention by the government in taxation than women, once fairness preferences are controlled for. Hence, our data indicates that the finding that females are more supportive of redistributive measures than males, is likely driven by the differences in fairness ideals held by males and females (see also Figure 4). The male dummy loses significance in column (4), such that the robustness of preference over different frames remains an open question. The coefficient on the 'trust in government' variable, measuring the trust an individual has in the federal government on a 5-point scale, is also surprising. The negative sign in the first three regressions indicates that individuals who trust the government

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<sup>15</sup>We again use ordinary least squares since the marginal effects are easier to interpret. The coefficients from an ordered logit model are very similar in sign and significance and can be found in the tables in the Appendix.

| Dependent Variable | (1)                   | (2)                   | (3)                    | (4)                   |
|--------------------|-----------------------|-----------------------|------------------------|-----------------------|
|                    | Reduce Inequality     |                       |                        | Income Tax            |
| Wave               | W15                   | W17                   | W21                    | W17                   |
| Maxi-min           | -0.0245<br>(0.0528)   | -0.0476<br>(0.0540)   | 0.0102<br>(0.0582)     | -0.0580<br>(0.0418)   |
| Efficiency         | -0.231**<br>(0.0959)  | -0.434***<br>(0.0998) | -0.181*<br>(0.101)     | -0.198***<br>(0.0729) |
| Maxi-max           | -0.502<br>(0.389)     | -0.578<br>(0.391)     | -0.498<br>(0.452)      | -0.148<br>(0.287)     |
| Male               | 0.126**<br>(0.0532)   | 0.140**<br>(0.0547)   | 0.229***<br>(0.0571)   | -0.0273<br>(0.0424)   |
| Age quantile       | 0.116***<br>(0.0241)  | 0.102***<br>(0.0249)  | 0.0679**<br>(0.0265)   | 0.103***<br>(0.0196)  |
| Income             | -0.125***<br>(0.0236) | -0.147***<br>(0.0243) | -0.168***<br>(0.0241)  | -0.100***<br>(0.0171) |
| Education          | 0.0379<br>(0.0311)    | 0.0106<br>(0.0325)    | 0.104***<br>(0.0349)   | 0.0577**<br>(0.0260)  |
| Trust government   | -0.0646**<br>(0.0313) | -0.0612*<br>(0.0327)  | -0.0972***<br>(0.0345) | -0.0207<br>(0.0256)   |
| East               | 0.195***<br>(0.0609)  | 0.193***<br>(0.0638)  | 0.219***<br>(0.0665)   | 0.0359<br>(0.0491)    |
| Treatment control  | 0.115**<br>(0.0500)   |                       | -0.243***<br>(0.0547)  |                       |
| Constant           | 2.292***<br>(0.131)   | 2.524***<br>(0.132)   | 2.623***<br>(0.141)    | 2.087***<br>(0.106)   |
| Observations       | 1,701                 | 1,686                 | 1,652                  | 1,676                 |
| R-squared          | 0.054                 | 0.067                 | 0.069                  | 0.047                 |

Table 3: Ordinary Least Squares, robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Policy preferences as dependent variable, measured on 5-point scale.

more, want the government to intervene less. A study by Kuziemko, Norton, and Saez (2015) in the US finds essentially the opposite effect. Although the effect is not very strong, we do find it in responses by the individuals, a year apart. It could be caused by the German environment where governmental redistribution is already a strong and consistent part of the tax-system. In all three questions, the average support for government redistribution is considerable (averages 2.33-2.38 and mode of 3 on the scale 0-4). If individuals who like the current system are more trusting of the government, they might not want to change it. In that case this result could reverse for countries like the US with less redistribution. The coefficient on income has a negative and significant sign. Individuals with a higher income are less likely to support higher redistribution, which is exactly as one would expect. Moreover, younger respondents are less likely to desire some form of redistribution, and this effect survives when we control for other covariates. Age is measured in the quantiles used in Figure 3, where the youngest group is coded as 1 and the oldest as 4.<sup>16</sup> The effect of education level, measured on the same three point scale as in Figure 2, on policy preferences is less consistent. It appears that higher educated individuals have a weak preference for more redistribution and are more likely to favor high labor taxes on very high incomes, but the effect is not always significant. This effect survives in other specifications of the model. A final effect, one that was probably expected, is that participants living in East-Germany are more positive towards government intervention aimed at redistribution. Given the history of this part of Germany and the enormous amount of effort and money that the German government expended to rebuild this area after reunification, this is not too surprising.

Taken together, the evidence in this section shows that experimental fairness measures help to predict preferences for government intervention and redistribution, even after controlling for the standard battery of demographic covariates.

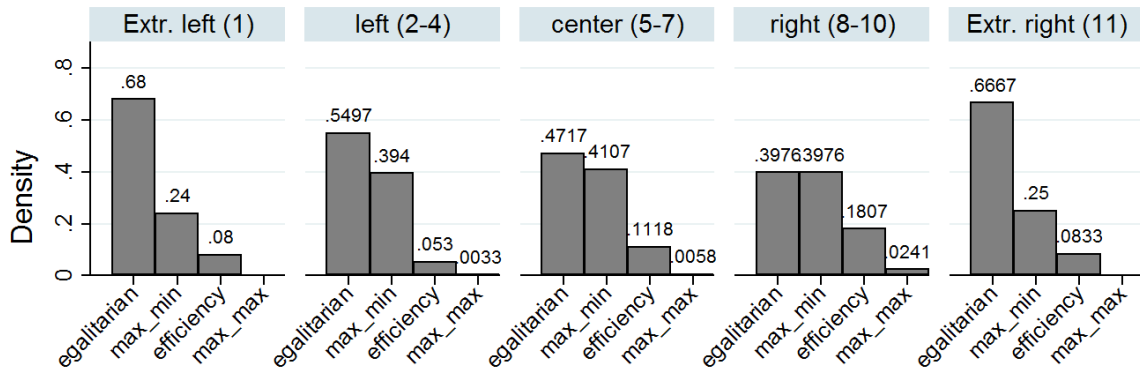
## 5.2 Politics and fairness-types

The participants of the GIP are regularly asked to place themselves on the standard political scale from ‘1 left’ to ‘11 right’. We use this scale to determine the 5 groups in Figure 6a, where we group the answers in the center in three bins because there is little difference between the sub-groups within these bins. For the largest groups of respondents in the center of the scale, we find the relationship one would expect. Right-leaning participants are more likely to be efficiency-minded, while left-leaning participants are more egalitarian. This relationship breaks down, however, at the extremes of the scale. At both ends of the scale we find strong egalitarian preferences.

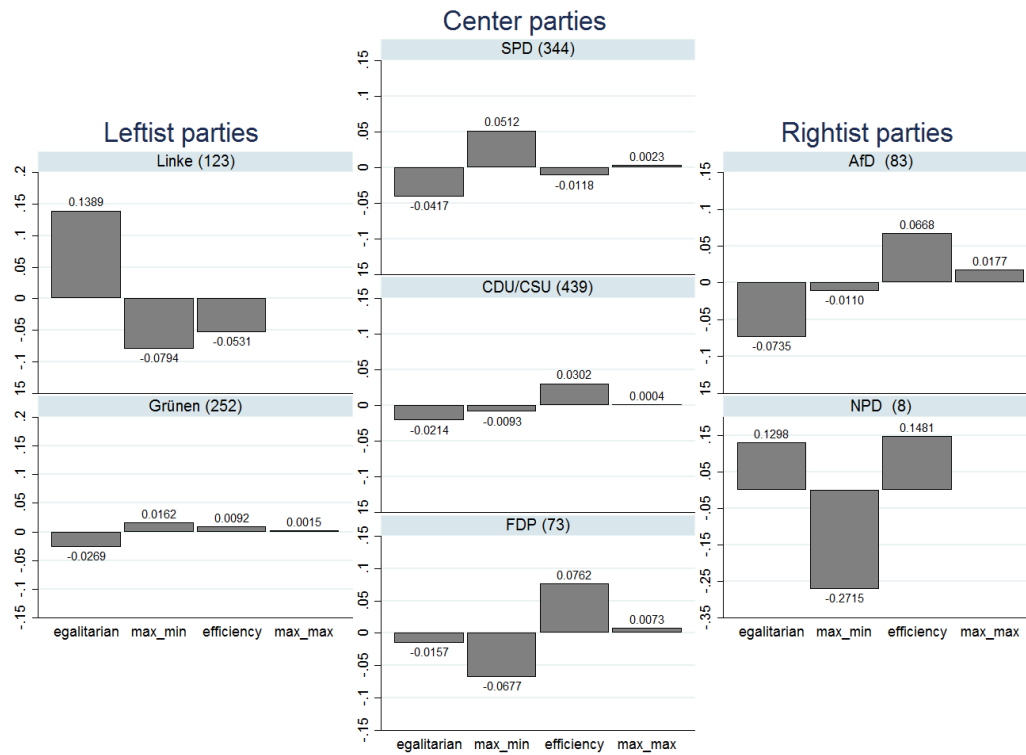
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<sup>16</sup>We tried several specifications of this model. Treating age as a continuous variable gives qualitatively the same relationship, while using dummies for the age quantiles does not show a significantly different effect between the lower two and the higher two quantiles.

## Fairness and politics



(a) Fairness ideals left-right self placement.



(b) Fairness ideals by Party.

Figure 6: Fairness and politics.

The GIP has regularly asked participants what party they voted for in the last election and what party they identify with most. We split the sample of participants into groups based on

the party they report to have voted for, in the last election.<sup>17</sup> To make the comparison easier, Figure 6b plots the *differences* relative to the overall distribution. We calculate the distribution of fairness types within the sub-groups that voted for a given party and subtracted the average fractions found in the entire sample (from Figure 1). This exercise shows how voters of a particular party differ from the average participant. The parties in Figure 6b are grouped based on whether they are leftist (Die Linke, Bündis 90 - Die Grünen), center parties (SPD, CDU/CSU, FDP) or right-wing (AfD, NPD). From this figure it becomes clear that left-leaning voters are more likely to be egalitarians and less likely to be efficiency-minded than right-leaning voters ( $\chi^2$  on independence of the distribution yields  $p < 0.001$ ). While the trend is again broken at the very extreme (NPD). Although this finding is perhaps not surprising, there is only limited empirical evidence concerning this presumed regularity. Another interesting finding is the similarity between the established parties. The voterbases of the largest three parties are extremely close to each other and to the average German voter. Whether this is due to a median-voter bias of the parties or actual demand by their voter base is unclear from our data, but it would be an interesting area for future research.

### 5.3 Revealed Charitable Behavior and Fairness Types

We now turn to the relation between fairness types and revealed charitable behavior. All participants of the GIP receive a flat payment of four Euro on their experimental account for every wave they participate in. Participating in all waves in a year yields an extra bonus of ten Euro, the bonus is reduced to five Euro if one wave is missed and zero if more than one wave is missed in any single year. Every six months the experimental account is automatically paid out to the participants. Participants can have the money transferred directly to their bank account, receive the corresponding value in Amazon vouchers, or donate it to charity.<sup>18</sup> Participants set their pay-out option when registering for the GIP, but can change their setting at any time. Before payment, respondents receive an email that asks them to review their account settings with regard to the payment method, but only about 2% of the participants make use of the option to review their settings. Below we will analyze the payout in October 2015, in which 14.3% of all participants chose to donate their money to charity.

Giving to charity should increase (given a basic confidence in the veracity of the charitable causes) with one's concern for others' well-being. Egalitarians are willing to actively reduce incomes in order to achieve equality, which signals concern for others. Consequently, we expect egalitarians to be more likely to donate than the other types. In contrast, Maxi-min types are expected to care

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<sup>17</sup>The last national election to take place before our experiment was in September 2013, and the last GIP wave to ask about this election before our experiment, was in September 2015.

<sup>18</sup>The participants cannot choose the exact charitable organization, all donations are shared equally amongst the Red Cross, WWF and the SOS Kinderdorf.

about others' welfare, but will not violate strict Pareto dominance, creating a similar but possibly smaller incentive to donate. Efficiency-minded individuals should show the smallest indication of concern for others. This effect may be reinforced by the possible inefficiencies found in charities – not every Euro given to charity actually benefits the poor – inevitably there will be some waste. Consequently, efficiency-minded participants should be less likely to favor giving to charity than either of the two other types.

We test these conjectures in Table 4. We regress the dummy whether a person has donated to charity or not, on a set of control variables like age, income (in 1000 euros), gender, education levels (according to the groups used before) and the fairness dummies. Additionally, we also control for trust in the government and the exact amount the participants received (which depends on how many waves the participant answered). As before, egalitarians serve as the reference group. We find that egalitarians are significantly more likely to donate to charity than both maxi-min and efficiency types. The coefficient on efficiency indicates that the donation rate decreases by six percentage points from the unconditional baseline of approximately 13% (we drop observations for which we miss some controls, such that the base-rate for donations is slightly below the average in this pay-out round). Note that neither income, age nor monetary amount can be zero, hence the average is not captured in the constant. The doubling of the likelihood of donations of the egalitarian type is both statistically and economically clearly significant. As expected, the maxi-min types are located between efficiency-minded participants and egalitarians.

Additionally we find that older, richer and more educated people are more likely to donate to charity. In particular, the finding that richer people are more likely to donate money is interesting. In that sense, our experiment also provides suggestive evidence against the popular conclusion that becoming rich makes one more selfish. See for example Trautmann et al. (2013) and Smeets, Bauer, and Gneezy (2015) for a discussion of this issue.

To sum up, this section presented a test of the external validity of laboratory fairness experiments. A direct link in a natural setting provides credible evidence that we can indeed draw conclusions from lab to field behavior. Consequently, our experiment can help provide new insights on the important debate regarding the relation between lab and field measures, see for example Levitt and List (2007) and Benz and Meier (2008). To the best of our knowledge, we are the first to demonstrate the predictive power of third party spectator fairness views, which is particularly interesting, because these fairness ideals are philosophically-motivated and usually abstract concepts. We here show that they can help predict real world behavior and give insight into choices made in several different real-life contexts.

|                  | (1)<br>Charity         | (2)<br>Amazon          | (3)<br>Bank            |
|------------------|------------------------|------------------------|------------------------|
| Maxi-min         | -0.0319*<br>(0.0163)   | -0.0103<br>(0.0229)    | 0.0422*<br>(0.0249)    |
| Efficiency       | -0.0597**<br>(0.0244)  | -0.0178<br>(0.0371)    | 0.0775*<br>(0.0399)    |
| Maxi-max         | 0.0909<br>(0.117)      | -0.0636<br>(0.121)     | -0.0274<br>(0.148)     |
| Age quantile     | 0.0554***<br>(0.00778) | -0.0544***<br>(0.0100) | -0.000928<br>(0.0114)  |
| Income           | 0.0288***<br>(0.00780) | 0.0174*<br>(0.00901)   | -0.0461***<br>(0.0104) |
| Male             | -0.0367**<br>(0.0165)  | -0.0135<br>(0.0227)    | 0.0502**<br>(0.0249)   |
| Education        | 0.0345***<br>(0.00960) | -0.0182<br>(0.0142)    | -0.0163<br>(0.0153)    |
| Trust government | -0.000490<br>(0.00851) | 0.0123<br>(0.0124)     | -0.0119<br>(0.0134)    |
| Amount donated   | -0.0146**<br>(0.00571) | 0.0112*<br>(0.00660)   | 0.00344<br>(0.00771)   |
| East             | -0.0133<br>(0.0185)    | 0.0485*<br>(0.0265)    | -0.0352<br>(0.0286)    |
| Constant         | 0.0927<br>(0.0733)     | 0.255***<br>(0.0897)   | 0.652***<br>(0.102)    |
| Observations     | 1,792                  | 1,792                  | 1,792                  |
| R-squared        | 0.055                  | 0.018                  | 0.017                  |

Table 4: Ordinary Least Squares, robust standard errors in parentheses. The dependent variables are dummies whether the participant donated money to charity. Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## 6 Conclusion

In this paper, we make several important contributions to the literature. First, we elicit the distribution of impartial-spectator fairness ideals of a large and heterogeneous sample of the German population using an incentivized and neutrally-framed experiment. While distributional preferences of stakeholders have often been studied, little is known about the fairness views of spectators in a broader population. These fairness views are important, as many real-life situations, particularly in the political arena, are closely approximated by an impartial observer. Surprisingly, our results show that egalitarians form the majority of the German population. This is unexpected, since egalitarian allocations are (weakly) Pareto dominated in our experimental task.

Second, although much of the normative work in the fields of ethics and political philosophy has searched for a single, ideal distributive justice, we contribute to the empirical literature on the plurality of fairness ideals as held by individuals. We document a considerable individual heterogeneity of fairness ideals and we also show how individual characteristics are correlated with different fairness types. In particular, we show differences between the young and old, male and female, high and low income, and high and low educated participants. We, therefore, contribute to the emerging empirical literature showing it is unlikely that all individuals share the same fairness ideals, as evidenced by Cappelen et al. (2007) and Fisman, Kariv, and Markovits (2007).

Third, although it is a commonly-held belief that left-wing voters are more egalitarian and right-wing voters are more efficiency-minded, there is surprisingly little empirical evidence on how partisan voters differ with respect to their economic preferences. One notable exception is Fisman, Jakiela, and Kariv (2014) who, in a stakeholder framework, show that conservatives in the United States are not more selfish, but instead make a different equity-efficiency trade-off. In our study, we relate the distributive ideals of individuals to their political preferences and show that right-wing voters are indeed more efficiency-minded and left-wing voters more egalitarian, but that the established parties tend towards the median voter.

Forth, we present evidence suggesting that student populations hold systematically different fairness views from the rest of the population. This is particularly important because it suggests that previous studies in empirical social choice have systematically overestimated the importance of maxi-min and efficiency-minded types. Our finding also contributes to the current discussion in the experimental economics literature regarding the generalizability of results obtained from student samples.<sup>19</sup> What should be noted, however, is that the difference does mostly not seem to be driven by student status per se, since it disappears if one controls for observable characteristics.

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<sup>19</sup>This concern is part of the review of Levitt and List (2007). Falk, Meier, and Zehnder (2013) and Cappelen, Nygaard, Sørensen, and Tungodden (2015) and Galizzi and Navarro-Martínez (2015) discuss this question in relation to social preferences.

Last but not least, we show that our experimentally-elicited fairness types are meaningful measures of underlying preferences. We can use them to predict preferences for: first, political ideologies; second, the redistribution of income; and third, revealed charitable behavior. All of these in the expected directions. The predictive power of our fairness measures is considerable, even when controlling for a battery of individual characteristics. In addition, our work adds to the discussion on how laboratory measures relate to field behavior. This is, without question, an important step in the field of experimental economics.

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## A Appendix

### A.1 Screenshots


Gesellschaft  
im Wandel

Im Folgenden sind jeweils vier Varianten (A, B, C und D) zur Verteilung von Geld an Person 1 und Person 2 dargestellt. Wir bitten Sie, sich bei Ihrem Vorschlag für eine der Varianten zu entscheiden.

Variante A: Person 1 soll 10 Euro erhalten, Person 2 soll 9 Euro erhalten.  
 Variante B: Person 1 soll 15 Euro erhalten, Person 2 soll 7 Euro erhalten.  
 Variante C: Person 1 soll 8 Euro erhalten, Person 2 soll 8 Euro erhalten.  
 Variante D: Person 1 soll 16 Euro erhalten, Person 2 soll 2 Euro erhalten.

Bitte beachten Sie, dass sich Ihr Vorschlag darauf auswirken kann, wie viel Geld zwei andere (anonyme) Befragungsteilnehmer tatsächlich erhalten.

**Welche Variante bevorzugen Sie?**

| Variante A            |          | Variante B            |          | Variante C            |          | Variante D            |          |
|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|
| Person 1:             | 10       | Person 1:             | 15       | Person 1:             | 8        | Person 1:             | 16       |
| Person 2:             | <u>9</u> | Person 2:             | <u>7</u> | Person 2:             | <u>8</u> | Person 2:             | <u>2</u> |
| Summe                 | 19       | Summe                 | 22       | Summe                 | 16       | Summe                 | 18       |
| <input type="radio"/> |          | <input type="radio"/> |          | <input type="radio"/> |          | <input type="radio"/> |          |

>>>




Figure 7: Screenshot Decision Task 1.


Gesellschaft  
im Wandel

[Hilfe](#)

Im Folgenden sind jeweils vier Varianten (A, B, C und D) zur Verteilung von Geld an Person 1 und Person 2 dargestellt. Wir bitten Sie, sich für eine der Varianten zu entscheiden.

Variante A: Person 1 soll 9 Euro erhalten, Person 2 soll 8 Euro erhalten.  
 Variante B: Person 1 soll 12 Euro erhalten, Person 2 soll 6 Euro erhalten.  
 Variante C: Person 1 soll 8 Euro erhalten, Person 2 soll 8 Euro erhalten.  
 Variante D: Person 1 soll 13 Euro erhalten, Person 2 soll 3 Euro erhalten.

Bitte beachten Sie, dass sich Ihr Vorschlag darauf auswirken kann, wie viel Geld zwei andere (anonyme) Befragungsteilnehmer tatsächlich erhalten.

**Welche Variante bevorzugen Sie?**

---

*Bei dieser Frage können Sie nur eine Antwort geben.*

| Variante A  | Variante B   | Variante C  | Variante D   |
|---|--|---|--|
| Person 1: 9<br>Person 2: 8<br><hr style="width: 50px; margin: 5px auto;"/> Summe 17 | Person 1: 12<br>Person 2: 6<br><hr style="width: 50px; margin: 5px auto;"/> Summe 18 | Person 1: 8<br>Person 2: 8<br><hr style="width: 50px; margin: 5px auto;"/> Summe 16 | Person 1: 13<br>Person 2: 3<br><hr style="width: 50px; margin: 5px auto;"/> Summe 16 |
| <input type="radio"/>   | <input type="radio"/>  | <input type="radio"/>   | <input type="radio"/>  |

< Zurück
Weiter >




Figure 8: Screenshot Decision Task 2.

## A.2 Translated Instructions

This part of the questionnaire is about four proposals on the distribution of money. The amounts of money are real and can be paid to randomly selected participants of the questionnaire. We kindly ask you to select a proposal on how to divide the money between two other participants of the questionnaire in each of the four [two] decision situations. We will call these two participants person 1 and person 2. All other participants, not only you, will make four such proposals. Not all decisions are going to be paid out for real in the end. Instead, the computer will randomly choose 50 proposals made by the participants for each of the 4 decisions. This means that at the end 4 times 50 that is 200 proposals will be paid out for real. We estimate that 3500 people will take part in this questionnaire.

For each randomly selected proposal, two randomly chosen participants will be selected who will receive the proposed monetary amounts. One person will be randomly assigned to the role of person 1 and to the other to the role of person 2. Each of the two will then receive the payoff of corresponding to the relevant proposal. Each of the proposals made can be randomly selected for the actual payoff by the computer. So it could be that your proposal will be chosen and that two other participants will receive exactly as much money as you proposed. You could also be selected and receive the payoff that another participant proposed. In this case the money will be directly

transferred to your account at the GIP. None of the participants can be chosen more than once to receive money. All decisions made will of course stay anonymous. We will notify the winners.

Below four proposals (A, B, C and D) on how to distribute money between person 1 and person 2 are depicted. We kindly ask you to indicate which of these alternatives you prefer.

- Alternative A: person 1 should receive 10 Euros; person 2 should receive 9 Euros.
- Alternative B: person 1 should receive 15 Euros; person2 should receive 7 Euros.
- Alternative C: person 1 should receive 8 Euros; person 2 should receive 8 Euros.
- Alternative D: person 1 should receive 16 Euros; person 2 should receive 2 Euros.

Please pay attention that your decision can affect how much two other (anonymous) randomly selected participants actually receive.

Which alternative do you prefer?

### **A.3 Translated Wording of Questions in the GIP Used Here**

#### **Income differences Tax financed**

Now we will deal with a different topic. Please indicate to which extent you agree with the following statement:

The government should take measures to reduce income differences. Keep in mind that these measures must be financed by taxes that would lead to reductions of one's salary.

You can only give one answer:

1. I strongly agree
2. I agree
3. I am indifferent
4. I disagree
5. I strongly disagree

#### **Spending-Employment**

The next three questions will be about whether the government should spend more in the three areas of social security including employment (e.g. unemployment benefits, further educational training measures), "social affairs" (e.g. Hartz IV, child and housing benefits) and "pensions" (e.g. subsidies for the pension fund).

Please indicate to which extent you agree with the following statement:

The government should spend more on the area employment. Keep in mind that a high level of expenditure on “employment” results in a relatively low level of expenditure on “pensions” and “social affairs”

You can only give one answer:

1. I agree strongly
2. I agree
3. I am indifferent
4. I disagree
5. I disagree strongly

### **Spending Social affairs**

Please indicate to which extent you agree with following statement:

The government should spend more on “social affairs”. Keep in mind that a high level of expenditure on “social affairs” leads to a relatively low level of expenditure on “employment” and “pensions”.

You can only give one answer:

1. I agree strongly
2. I agree
3. I am indifferent
4. I disagree
5. I disagree strongly

### **Tax system reforms**

The government derives its revenue by raising taxes such as the income tax and the value added tax. While doing so it must also keep in mind the consequences of raising taxes. For example a high income tax could discourage companies from creating new jobs. Keeping that in mind what is your personal opinion on the tax system in Germany? To which extent should the German government change the current tax system.

Please use the scale for your answer.

The German government should change the tax system:

- 0: not at all  
10: completely  
-99: I dont know

### **Tax equity:**

Should people who work more than others and therefore also earn more pay less or more taxes than they currently do?

1. Pay a lot more taxes than they currently do
2. Pay slightly more taxes than they currently do
3. Pay the same amount of taxes that they currently do
4. Pay slightly less taxes than they currently do
5. Pay far less taxes than they currently do

### **Reduction of income differences**

Please indicate to which extent you agree with the following statement:

The government should take measures to reduce income differences. Keep in mind that these measures must be financed by taxes that would lead to reductions from your salary.

You can only give one answer:

1. I strongly agree
2. I agree
3. I am indifferent
4. I disagree
5. I strongly disagree

## **A.4 Additional Results**

Figure 9 depicts the frequencies by left, center and right party. The parties in Figure 6b are grouped in the same way as in Figure 6b based on whether they are leftist (Die Linke, Grüne/Bündis '90), center parties (SPD, CDU/CSU, FDP), and right-wing (AfD, NPD).

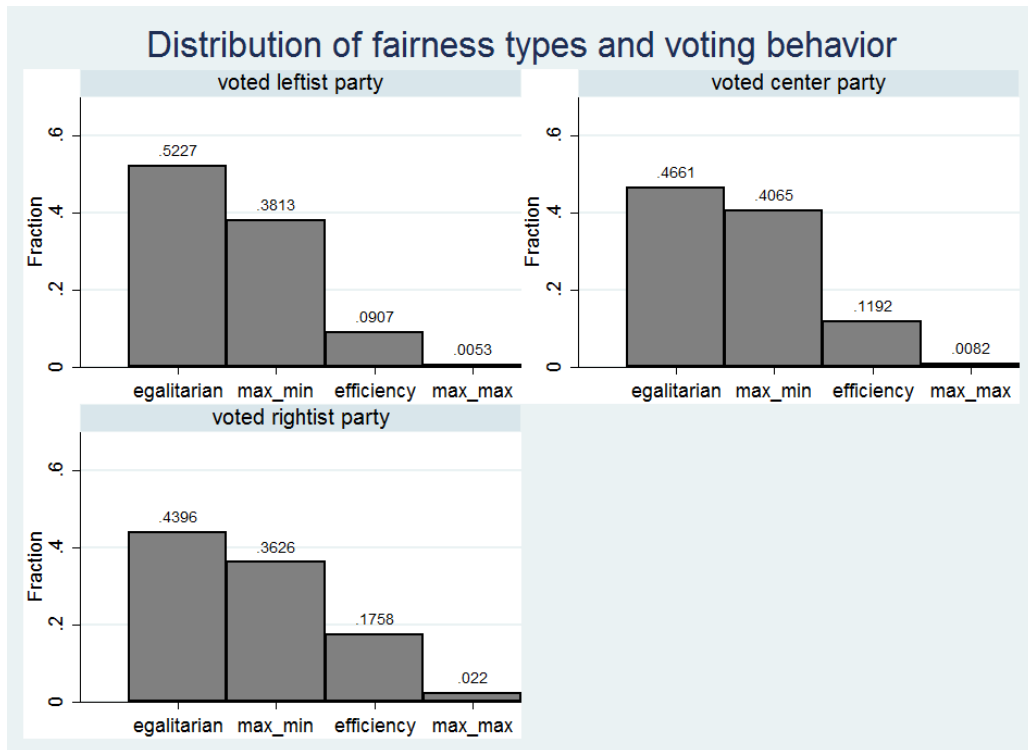


Figure 9: Fairness ideals left vs right.

|                    | (1)                   | (2)                   | (3)                   | (4)                   |
|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                    | Reduce Inequality     |                       |                       |                       |
| Dependent Variable | W15                   | W17                   | W21                   | Income Tax            |
| Maxi-min           | -0.0440<br>(0.0931)   | -0.0805<br>(0.0953)   | 0.0202<br>(0.0944)    | -0.111<br>(0.101)     |
| Efficiency         | -0.417**<br>(0.171)   | -0.753***<br>(0.176)  | -0.280*<br>(0.165)    | -0.451**<br>(0.177)   |
| Maxi-max           | -0.821<br>(0.827)     | -0.835<br>(0.728)     | -0.719<br>(0.810)     | -0.234<br>(0.631)     |
| Male               | 0.284***<br>(0.0945)  | 0.336***<br>(0.0974)  | 0.430***<br>(0.0939)  | -0.0646<br>(0.101)    |
| Young              | -0.487***<br>(0.0948) | -0.431***<br>(0.0977) | -0.313***<br>(0.0948) | -0.511***<br>(0.103)  |
| Income             | -0.233***<br>(0.0419) | -0.273***<br>(0.0407) | -0.295***<br>(0.0397) | -0.230***<br>(0.0402) |
| Education          | 0.0905*<br>(0.0525)   | 0.0462<br>(0.0563)    | 0.192***<br>(0.0551)  | 0.121**<br>(0.0598)   |
| Trust government   | -0.172***<br>(0.0582) | -0.161***<br>(0.0611) | -0.209***<br>(0.0602) | -0.0704<br>(0.0627)   |
| Treatment control  | 0.199**<br>(0.0891)   |                       | -0.419***<br>(0.0894) |                       |
| Constant cut1      | -4.102***<br>(0.256)  | -3.986***<br>(0.245)  | -3.854***<br>(0.247)  | -4.355***<br>(0.272)  |
| Constant cut2      | -2.039***<br>(0.216)  | -2.374***<br>(0.217)  | -2.201***<br>(0.222)  | -2.468***<br>(0.234)  |
| Constant cut3      | -0.951***<br>(0.210)  | -1.263***<br>(0.211)  | -1.170***<br>(0.216)  | 0.0513<br>(0.221)     |
| Constant cut4      | 1.256***<br>(0.213)   | 0.946***<br>(0.214)   | 0.666***<br>(0.217)   | 2.445***<br>(0.258)   |

Table 5: Ordered Logit, policy preferences. Standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

|                  | (1)<br>Charity            | (2)<br>Amazon            | (3)<br>Transfer            |
|------------------|---------------------------|--------------------------|----------------------------|
| Maxi-min         | -0.318**<br>(0.159)       | -0.0629<br>(0.114)       | 0.180*<br>(0.104)          |
| Efficiency       | -0.639**<br>(0.292)       | -0.0933<br>(0.186)       | 0.330*<br>(0.173)          |
| Maxi-max         | 0.717<br>(0.668)          | -0.297<br>(0.688)        | -0.121<br>(0.599)          |
| Age              | 0.0457***<br>(0.00632)    | -0.0199***<br>(0.00375)  | -0.00187<br>(0.00356)      |
| Income           | 0.000225***<br>(5.55e-05) | 8.68e-05**<br>(4.27e-05) | -0.000181***<br>(4.35e-05) |
| Male             | -0.366**<br>(0.163)       | -0.0723<br>(0.113)       | 0.208**<br>(0.105)         |
| Education        | 0.352***<br>(0.103)       | -0.0975<br>(0.0709)      | -0.0833<br>(0.0654)        |
| Trust government | -0.0168<br>(0.0835)       | 0.0559<br>(0.0628)       | -0.0440<br>(0.0567)        |
| Amount donated   | -0.132***<br>(0.0432)     | 0.0592*<br>(0.0359)      | 0.0152<br>(0.0321)         |
| Constant         | -3.346***<br>(0.634)      | -0.766<br>(0.489)        | 0.646<br>(0.439)           |
| Observations     | 1,792                     | 1,792                    | 1,792                      |

Table 6: Robust Logit, pay-out selection and fairness-types. Robust standard errors in parentheses.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

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Fairness views and political preferences - Evidence from a large online experiment

**Abstract**

We elicit distributional fairness ideals of impartial spectators using an incentivized economic experiment in a large and heterogeneous sample of the German population. Our dataset allows us to relate our experimental data on fairness ideals to a large range of socio-demographic characteristics, political preferences and revealed charitable behavior. We document several empirical facts: i) egalitarians are the predominant type, even though egalitarian allocations are Pareto-dominated by maxi-min allocations; ii) females are more egalitarian than men; iii) men are relatively more efficiency-minded; iv) maxi-max preferences are empirically irrelevant; v) left-leaning voters are more likely to be egalitarians whereas right-leaning voters are more likely to be efficiency-minded; and vi) young and highly-educated participants hold different fairness ideals than the rest of the population. Moreover, we show that the experimentally elicited fairness types predict preferences for redistribution and social spending. We also find that egalitarians are more likely to donate to charity than efficiency-minded people, even after controlling for a range of covariates. Hence, our paper also contributes to the emerging literature examining the external validity of laboratory experiments on fairness preferences.

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