Preference for redistribution: Does the recipient's residency status, education, and volunteering matter?

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Abstract

It has been argued that ethnic heterogeneity negatively affects the willingness of the wealthier ethnic majority to redistribute resources to the typically less affluent ethnic minority. An open question in this context is whether this effect is driven by ethnic heterogeneity itself or the beliefs about immigrant's characteristics. Using a general population sample of German citizens, we analyze how redistribution preferences depend on the recipients' characteristics. We systematically vary information on (i) the recipient's residency status (asylum seekers, economic migrants, German citizens) and (ii) their characteristics (educational attainment, engagement in voluntary work). These variations allow us to disentangle the effect of the recipient's residency status and characteristics on redistribution preferences. Overall, we find discrimination against foreign recipients, with German citizens receiving significantly higher transfers. While having a university degree does not affect redistribution on average, participation in voluntary work significantly increases redistribution. This effect is particularly strong for asylum seekers compared to German citizens and economic immigrants. However, information having a university degree can reduce discrimination, particularly for asylum seekers.

Keywords: Redistribution, Immigration, Discrimination, Education, Voluntary work.

1 Introduction

Migration is one of the most pressing challenges of our society, and it is on the rise worldwide. In 2022, 3.60% of the world's population was born in a country different from their current country of residence. With 86.7 million and 58.7 million immigrants, Europe and Northern America are the regions in the world that attract the most immigrants in relation to their resident population.[1] Besides heterogeneous causes and consequences of migration on the individual level, it has been shown that immigration affects social cohesion in host countries, while social cohesion is an essential prerequisite for the integration of immigrants into society. A popular thesis in this context is that immigration increases ethnic heterogeneity and thereby reshapes the extent of income redistribution and several other aspects of the welfare state (Alesina and Glaeser, 2004). This is because first and second-generation immigrants typically occupy lower tiers of the income distribution. Ethnic majorities that prefer to discriminate against ethnic minorities will thus demand low redistribution to provide low benefits to ethnic minorities. The greater ethnic homogeneity in Europe compared to the US thus partly explains the higher redistribution rates in the former than the latter. This thesis has received extensive empirical support (Alesina et al., 1999; Luttmer, 2001; Alesina and Glaeser, 2004; Fong and Luttmer, 2009; Dahlberg et al., 2012; Algan et al., 2016; Alesina et al., 2019; Tabellini, 2020) by carrying out online survey experiments (Alesina et al., 2023, 2021), or by exploiting exogenous migrant placement policies (Dahlberg et al., 2012). In general, it has been shown that the higher ethnic heterogeneity, the lower the demand for redistribution. This holds at the census or metropolitan level (Luttmer, 2001), at the regional level within countries (Dahlberg et al., 2012; Algan et al., 2016; Alesina et al., 2019; Tabellini, 2020), and also between countries (Alesina and Glaeser, 2004). Similarly, the same relationship holds for public spending (Alesina et al., 1999), private donations (Fong and Luttmer, 2009) and also affects trust levels and participation in associations (Alesina and La Ferrara, 2000, 2002), variables that have been shown to correlate with economic development (Knack and Keefer, 1997).

An open question in this context is whether increasing ethnic diversity itself or the perception of immigrants' characteristics reduces the willingness to redistribute. In particular, members of the host society might believe that immigrants (on average) are less educated (and thus less productive) and/or have a lower propensity to contribute to society and, therefore, differentiate between immigrants and natives.

In this study, we address this question by exploring the potential of information in mitigating ethnic-based discrimination and thereby contribute to a better understanding of redistribution dynamics in the context of ethnic diversity. Specifically, we investigate whether having high educational attainment or engaging in voluntary work affects the propensity to redistribute and reduces discrimination against immigrants. To this end, we conducted an incentivized large-scale experiment on a general population sample in Germany (1807 participants) and used the so-called "third-party redistribution game" (see Almås et al., 2020) to measure the propensity to redistribute and discrimination against immigrants. In this experimental setup, an allocator who acts as an "impartial spectator" chooses a distribution between two

[1] Source: https://worldmigrationreport.iom.int/wmr-2022-interactive/

stakeholders. One of the stakeholders - the worker- earns €5 for performing a task. The other stakeholder -the recipient- does not have the opportunity to perform a task and consequently does not earn any money. The task of the allocator is to decide how much of the €5 is redistributed from the worker to the recipient. In order to study the effect of information on the propensity to redistribute and discrimination against immigrants, we systemically vary information on the recipient's (i) residency status (German citizen, asylum-seeker, or economic immigrant), (ii) educational attainment (low, high), and (iii) engagement in voluntary work. These aspects are particularly relevant to enhance the understanding of redistribution in ethnically diverse societies. The first aspect -residency status- allows us to differentiate between different immigrant groups to investigate group-specific characteristics that increase acceptance and reduce discrimination against the respective groups. This has only been investigated indirectly by Bansak et al. (2016). The second aspect -education- explores the evaluation of labor market potential and thereby adding to the existing literature on labor market competition (Bansak et al., 2016; Alesina et al., 2019). The third aspect -voluntary work- gives novel insights into the subjective evaluation of immigrants' voluntary contributions to society. To the best of our knowledge, this aspect measured by the engagement in voluntary work has not been studied yet. In the following, we will refer to high educational attainment and engagement in voluntary work as desirable characteristics.

Our results show significant baseline discrimination against immigrants, i.e., significantly lower transfers to both asylum-seekers and economic immigrants compared to German Citizens in the absence of desirable characteristics. Within the immigrant groups, asylum-seekers receive higher transfers compared to economic immigrants. Regarding the two desirable characteristics -high educational attainment and engagement in voluntary work- we find different effects. While performing voluntary work brings about a significantly positive transfer premium, having high educational attainment does not affect the propensity to transfer significantly. Furthermore, having both desirable characteristics has no additional positive effect on the premium in general and even has a negative effect on the combined premium for asylum-seekers. Although, voluntary work, as a measure for the willingness to contribute to society, is rewarded for both immigrant groups in terms of transfers, discrimination is only reduced for asylum-seekers holding one of the desirable characteristics. These patterns also hold when looking at the heterogeneous characteristics of the allocators. In general, we find a significantly higher propensity to reward engagement in voluntary work across all recipient groups (German Citizens, asylum-seekers, and economic immigrants) for all subgroups. However, discrimination is increased in some cases, especially, for right-wing voters who reward engagement in voluntary work more for German recipients compared to immigrants. The propensity to reward education is insignificant in most cases but reduces discrimination particularly for asylum seekers. This result holds even for right-wing voters and participants with negative attitudes toward immigration. Finally, we show that preferences for redistribution vary non-monotonically with efficiency. Transfers from worker to recipient are significantly lower for a one-to-one transfer compared to lower efficiency (half of the transfer is lost) and increased efficiency (the transfer is doubled). This is consistent with allocators having Boulding social-welfare preferences (Traub et al., 2005) or have

a strong preference for "moderate" redistribution (Almås et al., 2020; Tepe et al., 2021).

The contribution of the paper is fourfold. First, we contribute to the debate on the effect of information provision on attitudes toward immigrants and preferences for redistribution. Previous research has shown that attitudes toward immigrants are shaped by "sociotropic" preferences. In particular, asylum-seekers or immigrants are more likely to be accepted if they have high labor market qualifications (Bansak et al., 2016; Alesina et al., 2019), if they were exposed to violence, and if they share the same religion and language as natives (Bansak et al., 2016). Motivated by the notion that citizens are often ill-informed about fundamental economic and societal facts (e.g. Kuklinski et al., 2000), several studies provided participants with information to investigate whether information provision increases redistribution (Alesina et al., 2023) or improves attitudes toward immigration (Lergetporer et al., 2021; Haaland and Roth, 2021; Grigorieff et al., 2020). While general facts about immigration does not increase the support for redistribution (Alesina et al., 2023) or change the preferences for immigration policies (Grigorieff et al., 2020), providing participants with an anecdote about hard-working migrants does (Alesina et al., 2023). Information on the education level of immigrants positively affects general attitudes toward refugees but also increases respondents' concerns about increased labor market competition (Lergetporer et al., 2021). We add to this literature by showing that information on educational attainment of immigrants does not affect redistributive preferences but reduces ethnic-based discrimination. However, most notably, informing participants that immigrants contribute to society by performing voluntary work increases redistribution significantly.

Second, we contribute to the experimental literature on preferences for redistribution showing that redistribution does not exclusively follow rational self-interest (see Nicklisch and Paetzel, 2020, for an overview). Indeed, redistributive preferences are generally influenced by fairness concerns (e.g., Kittel et al., 2015; Konow and Schwettmann, 2016), group identity (e.g., Klor and Shayo, 2010), risk aversion (e.g., Durante et al., 2014), inequality aversion (e.g., Tyran and Sausgruber, 2006), preferences for efficiency (e.g., Krawczyk, 2010; Tepe et al., 2021) and the framing of the redistribution decision (e.g., Lorenz et al., 2017; Paetzel et al., 2018). Additionally, there is evidence that people take the neediness of individuals into account when making redistributive decisions (Konow, 2003; Traub et al., 2023) and are sensitive to information on the social behavior of others (Yamamura, 2012; Grieco et al., 2023). We add to this literature by providing further evidence that information about group membership (identity) has an effect on redistribution. In addition, we provide evidence that redistribution depends significantly on information about the recipients' characteristics. In particular, we contribute to the small but growing literature showing that social engagement, i.e. contributing to society, has a positive effect on redistribution decisions.

Third, we build on and contribute to the theory and evidence suggesting that discriminatory attitudes towards immigrants can be determined by *taste-based discrimination* or *statistical discrimination* (Becker, 2010; Aigner and Cain, 1977; Bertrand and Mullainathan, 2004; Adida et al., 2014; Hedegaard and Tyran, 2018; Neumark, 2018; Cettolin and Suetens, 2019). Taste-based discrimination refers to discrimination

of foreigners independent of their characteristics, whereas statistical discrimination refers to discrimination stemming form beliefs that other ethnic groups have less favorable characteristics than co-nationals. For instance, Gilens (1999) argues that ethnic antagonism - or overt racism - from White Americans to Afro-Americans in the US is driven by the stereotypical belief that Afro-Americans lack the same strong work ethic that characterizes White Americans. Hence, discrimination against Afro-Americans is rather statistical than taste-based. We conjecture that discrimination against immigrants in Germany is driven by similar stereotypes. The key difference between taste-based and statistical discrimination is that providing information on immigrants' characteristics reduces or even eliminates statistical discrimination, whereas taste-based discrimination is unaffected. More specifically, if discrimination is driven by stereotypes of unproductive immigrants, the information that a specific immigrant has the same productivity level as a native should eliminate statistical discrimination by construction (Hedegaard and Tyran, 2018; Alesina et al., 2018). Although our study does not formally differentiate between statistical and taste-based discrimination, our results reveal that participants are sensitive to information on immigrants' characteristics for both asylum-seekers and economic immigrants. Since discrimination persists across conditions, we conclude that discrimination against immigrants is not only driven by statistical discrimination.

Fourth, and closely related to discrimination, we contribute to the existing literature on ingroup favoritism or group loyalty effects (Luttmer, 2001). The concept is rooted in the idea that people place greater importance on the well-being of their "ingroup" -the group to which they feel connected to- compared to the "outgroup" (Tajfel et al., 1971; Brewer, 1999; Shayo, 2009). Group loyalty effects have received extensive attention both in socio-psychological and in recent economic literature (Balliet et al., 2014; Romano et al., 2017, 2021). This so-called ingroup bias or ingroup favoritism, has been observed in various experiments involving groups with differences in nationality (Yamagishi et al., 2005; Guillen and Ji, 2011; Akai and Netzer, 2012; Romano et al., 2017), ethnicity (Fershtman and Gneezy, 2001; Fershtman et al., 2005; Bernhard et al., 2006; Habyarimana et al., 2007; Burns, 2012; Tanaka and Camerer, 2016), religious affiliation (Chuah et al., 2013, 2014), castes (Hoff et al., 2011), political groups (Weisel and Böhm, 2015; Rand et al., 2009), associations, communities, or army units within a country (Goette et al., 2006; Degli Antoni and Grimalda, 2016), and also in artificial groups induced by purely arbitrary characteristics in the laboratory (Tajfel et al., 1971; Charness et al., 2007; Chen and Li, 2009; Güth et al., 2009; Hargreaves Heap and Zizzo, 2009; Paetzel and Sausgruber, 2018; Schütt, 2023). Moreover, evidence of the ingroup bias extends beyond controlled laboratory environments and has been documented in various real-world contexts (Bertrand and Mullainathan, 2004; Tjaden et al., 2018; Adida et al., 2017)[2]. Our study highlights that ingroup favoritism is important determinant for resdistributive preferences in general and even has a negative effect on redistribution when information about desirable characteristics is provided. This is particularly

[2]Criado et al. (2015) and Johansson-Stenman et al. (2009) reached more mixed conclusions, while Goerg et al. (2016) find significant miscalibration of beliefs, but rarely in behavior, between three national groups. Some papers do not find any discriminatory patterns (Willinger et al., 2003; Bouckaert and Dhaene, 2004; Goerg et al., 2016).

true for right-wing voters and participants who feeling close to Germans. They show a significant ingroup favoritism leading to an increase in discrimination towards immigrants compared to German Citizens having the same characteristics.

The remainder of the paper is structured as follows. In Section 2, we present the theoretical background of our paper. In Section 3, we describe the experimental design, procedure, and sampling strategy and in Section 4, we derive our hypotheses. In Section 5, we present a descriptive summary, our estimation strategy, and our results. Section 6 concludes with a summary and discussion of our findings.

2 Theoretical background

In this section, we develop a simplified model that allows us to empirically identify and disentangle the effect of a recipient's residency status, educational attainment, and voluntary engagement on the decision to redistribute in our third-party redistribution game. In Subsection 2.1, we present our utility framework, which rests on the specification of an *allocator's* utility function. In subsection 2.2, we derive the optimal rule as an inner solution to the maximization problem given a budget constraint.

2.1 Utility function

Our theoretical model is based on the following CES-utility function for the *allocator* referred to as P_3 in the following:

$$U_{P_3}(y_{P_1}, y_{P_2}) = \left(\alpha y_{P_1}^{\rho} + (\beta_T^k + \beta_{D_1}^k + \beta_{D_2}^k + \beta_{D_1 \cap D_2}^k) y_{P_2}^{\rho}\right)^{1/\rho} \quad k = \{G; E; A\}\,, \qquad (1)$$

where y_{P_1} and y_{P_2} are the earnings received by the two receivers, *Person 1* (P_1) and *Person 2* (P_2) in the third-party redistribution game, whom we refer to as the game's *stakeholders*. *Person 1* was chosen to be a "median" German who earned €5 in another study, which can be transferred as a whole or partly to *Person 2* - more detailed information about the vignettes of the stakeholders will be presented below. We assume that the *allocator's* utility depends on *stakeholders'* earnings according to a CES-utility function. CES-utility functions satisfy all concavity assumptions, ensuring that the optimal solution lies in the interior of the set $A \equiv \{(Y; 0)\,; (4; 1\delta)\,; (3; 2\delta)\,; (2; 3\delta)\,; (1; 4\delta)\,; (0; 5\delta)\}$.

The parameter α is proportional to the elasticity of the *allocator's* utility to P_1's earnings. We assume $\alpha \geq 0$. Likewise, the vector of parameters $\underline{\beta} = \left[\beta_T^k; \beta_{D_1}^k; \beta_{D_2}^k; \beta_{D_1 \cap D_2}^k\right]$ expresses utility elasticity to P_2's earnings. The superscript $k = \{G; E; A\}$ identifies the three possible residency stati of P_2 in our experiment, that is, German citizen, economic immigrants, and asylum seekers, respectively. For convenience, we also introduce the superscript $F = \{E; A\}$ to identify a foreign P_2 as opposed to a German P_2. The parameter β_T^k represents the propensity to reward an individual with a certain residency status not holding any desirable characteristics. In addition, the parameters $\beta_{D_1}^k$ and $\beta_{D_2}^k$ capture the propensity to reward individuals holding the desirable characteristics D_1 and D_2 compared to individuals not holding

any desirable characteristics, respectively. The parameter $\beta^k_{D_1 \cap D_2}$ is the *additional* propensity to reward an individual holding *both* desirable characteristics compared to an individual holding just one of the two characteristics. We assume $\underline{\beta} \geq 0$ for each of the terms.

The four $\underline{\beta}$ parameters capture different motivational channels whereby the *allocator's* utility depends on P_2's earnings. We define baseline discrimination as the difference between transfers to German Citizens and transfers to foreigners in the absence of any of the two desirable characteristics we have considered: $\beta^G_T - \beta^F_T$. Both taste-based and statistical discrimination (see Section 1) may concur with baseline discrimination. $\beta^k_{D_1}$, $k = \{G, E, A\}$ is the premium associated with an individual having high educational attainment, while $\beta^k_{D_2}$ is the premium associated with an individual performing voluntary work. In other words, the premium is the *additional* transfer accruing to a recipient holding a desirable characteristic compared to the baseline transfer. If discrimination was exclusively taste-based, we would observe that the premium associated with desirable characteristics would be similar in size between German and foreign recipients: $\beta^G_{D_i} = \beta^F_{D_i}, i = 1, 2$. If discrimination was partly statistical, then we would expect that $\beta^G_{D_i} < \beta^F_{D_i}, i = 1, 2$. The reason is that it is arguably the case that German natives hold the belief that immigrants have desirable characteristics with lower frequency than German citizens - as ascertained by Alesina et al. (2018) for natives' beliefs over immigrants' educational attainment. When *allocators* are faced with foreign recipients holding desirable characteristics, they should then be rewarded more than German recipients.

2.2 Derivation of the optimal rule

We define Y as the total amount of money available to P_1 before the *allocator's* transfer choice. Additionally, we define $t \in T \equiv \{0, ..., Y\}$ as the amount of money transferred from P_1 to P_2 by the *allocator*. Since previous literature has shown that some individuals have a preference for efficiency (e.g., Durante et al., 2014; Paetzel et al., 2014; Almås et al., 2020), we introduce an efficiency parameter δ as a multiplier to the transfer from *Person 1* to *Person 2*. This enables us to capture such preferences indirectly through the following budget constraint (2):

$$y_{P_1} + y_{P_2} \frac{1}{\delta} = Y. \tag{2}$$

In this setup, a transfer from P_1 to P_2 obviously determine P_2's payoff and is therefore defined as: $t = y_{P_2} \frac{1}{\delta}$.

Maximizing the utility function (1) subject to the budget constraint (2) yields the *allocator's* optimal transfer rule t^* as follows[3]:

$$t^* = \frac{Y}{\delta^{\frac{\rho}{\rho-1}} \left(\frac{(\beta^k_T + \beta^k_{D_1} + \beta^k_{D_2} + \beta^k_{D_1 \cap D_2})}{\alpha} \right)^{\frac{1}{\rho-1}} + 1} \tag{3}$$

The elasticity of substitution σ of a CES utility function is given by $\sigma = \frac{1}{1-\rho}$, such that $-\infty < \rho < 1$. Assuming for example $\rho = \frac{1}{2}$ and $\delta = 1$ and assuming

[3]The derivation of t^* can be found in the Appendix 7.5.

further that the *allocator* assigns equal weights to P_1 in the utility function - namely, $\alpha = \left(\beta_T^k + \beta_{D_1}^k + \beta_{D_2}^k + \beta_{D_1 \cap D_2}^k\right)$, then the optimal rule results in $t^* = 0.5$, which is the equal split of Y between P_1 and P_2.

The optimal transfer t^* increases with efficiency (δ), with higher relative utility weight for P_2 $\left(\alpha < \left(\beta_T^k + \beta_{D_1}^k + \beta_{D_2}^k + \beta_{D_1 \cap D_2}^k\right)\right)$, and increases with the endowment Y. Obviously, t^* gives a solution in the continuum of the interval $[0; Y]$, while the possible choices for t are discrete numbers $t \in T$. Therefore, the actual choice of an *allocator* should be assumed to be the closest discrete number to t^* with the highest associated utility.

3 Experiment

3.1 Experimental Design

The third-party redistribution game was implemented as a vignette study in a 2 (high or low education) × 2 (volunteering - yes, no) × 3 (status groups: German citizen, asylum-seeker, economic immigrant) between-subjects design resulting in total of twelve treatments - vignettes will be described below. During the experiment, participants were asked to take three consecutive allocation decisions with varying efficiency factors $\left(\delta \in \left\{\frac{1}{2};\ 1;\ 2\right\}\right)$ and one donation decision.

Before each allocation decision, two vignettes were presented to the participants. The recipients corresponding to the two vignettes were called *Person 1* and *Person 2*. *Person 1* was chosen to be a "median" German who earned €5 in another study, which can be transferred as a whole or partly to *Person 2*. The characteristics of *Person 1* are the same across treatments and correspond to German citizenship, a monthly net income of more than €700, vocational education, and no engagement in voluntary work. *Person 2* did not have the possibility to earn €5 in another study and has a monthly net income of less than €700. The three remaining characteristics varied according to one of the twelve treatments (2x2x3). Person 2 was either a German citizen, an asylum-seeker, or an economic immigrant, having no vocational education or a University degree and performing voluntary work or not. Figure 1 shows an example of the presentation.[4]

The first decision was always associated with an efficiency factor of $\delta = 1$ corresponding to a one-to-one transfer. Decisions two and three were randomized with an efficiency factor of $\delta = 0.5$ and $\delta = 2$. Hence, the amount transferred from *Person 1* to *Person 2* was halved or doubled, respectively. It was stated explicitly in the instructions that different participants sharing the same characteristics were assigned to the three decisions to avoid potential compensating behavior across decisions.

In the fourth decision, the participants had to decide to which charity organization €1 should be donated. They could choose between the German Red Cross, WWF Germany, UN Refugee Aid Organisation, and Association for the German Language.

[4]The visualization of the third-party redistribution game in the simplest possible way was part of some pilots with interviewing participants whether the visualization is understandable.

Figure 1: First decision screen in the experiment (with $\delta = 1$). Characteristics of Person 1 and Person 2 are presented in the upper part of the screen. The third-party redistribution game is visualized in a table presenting all possible allocations row-by-row. An allocation can be chosen by clicking on the respective allocation in the column "Choice".

3.2 Sampling and Procedures

In March 2019, we conducted a large-scale online experiment in collaboration with the survey company Consumerfieldwork[5] to test the above-outlined hypotheses. The study is part of the Mercator Dialogue for Asylum and Migration (MEDAM)[6]. The experiment was implemented with the experimental software OTree (Chen et al., 2016). In total, 1807 participants completed the survey. The participants were sampled to be representative of the German population in three dimensions: age, gender, and region of residence. The dimension age was divided into three age intervals: [18-39], [40-59], [60-99]. The dimension region consisted of east, north-west, and south-west (including Bavaria). The sample quotas and the quotas of the German general population are displayed in Table 1, indicating a congruence between our sample and the German population in terms of age, gender, regional dispersion, and income distribution.

[5]Consumerfieldwork is a private survey company with an actively maintained panel in Germany. The panel comprises ca. 50k German residents across all age groups and regions.

[6]MEDAM is a joint project of the Kiel Institute for the World Economy (IfW), the European Policy Centre (EPC) and Migration Policy Centre (MPC) funded by the Mercator foundation. The aim of the project is to asses and address current issues regarding third country and intra-EU migration including refugees and provide recommendations for policy makers.

Table 1: Summary statistics: Study sample compared to general German population

	Sample	General population
Age	48.94	44.6
% of women	0.49	0.51
Region		
- East	0.16	0.20
- North-West	0.42	0.38
- South-West	0.42	0.42
Income		
- Low income	0.18	13.3
- Low-medium income	0.19	16.3
- Medium income	0.33	31.3
- High income	0.3	16.9

Note: Sources: Destatis, bpb, Statista

After a brief introduction, the participants completed a short demographic questionnaire.[7] Participants who stated that they did not have German citizenship and/or were not born in Germany were excluded from the experiment. This was done to exclude additional motivations like social identity or homophily among immigrants.

The remaining participants received the instructions for the third-party redistribution game and took the three allocation decisions and the donation decision after a test round.[8] We implemented a test round to ensure that every participant got familiar with the representation of the third-party redistribution game. Finally, participants answered an extensive questionnaire including socio-demographic information, attitudes towards education, voluntary work, and migration as well as political attitudes.[9] To maintain the quality of the data, one item in the questionnaire was implemented to test the participant's attention to the content. On one Likert-scale item, participants were instructed to click on the right end of the scale. Participants who did not follow the instructions were excluded from the sample.

The online experiment lasted for 20-30 minutes, and each participant received €5 for completing the study. For incentivization, 10% of the allocation decisions and 90% of the donation decisions were paid out. The explicit percentages were not told to the participants. The payout-relevant decisions were randomly drawn from the sample. If the allocation decision was selected, one of the three decisions with varying efficiency factors was randomly chosen for payout. The allocation decisions were implemented in a laboratory experiment at the Kiel Experimental Economics Laboratory (KEEL). We invited 180 students of Kiel University sharing the same characteristics as *Person 1* in the third-party redistribution game, and they received €5 for their participation. In the experiment, one of the allocation decisions was randomly assigned to each participant[10]. The corresponding *Person 2* was paid

[7]The "Questionnaire-Part 1" can be found in Appendix 7.8.
[8]Screens from the experiment can be found in Appendix 7.7.
[9]The "Questionnaire-Part 2" can be found in Appendix 7.8.
[10]Results are reported in Schütt et al. (2023)

out according to the characteristics of the respective treatment. The 180 persons were recruited from the Kiel Experimental Economics Laboratory (KEEL) via Hroot (Bock et al., 2014) and integration classes at schools in Schleswig-Holstein, Germany.

4 Hypotheses

Our experimental design enables us to observe each individual's t^* for each efficiency parameter $\delta \in \left\{\frac{1}{2};\ 1;\ 2\right\}$ as a within-subjects variation, whereas our main treatment dimension varies the profiles of P_2 between subjects. This means that each treatment allows us to identify one β_C^k of our previously specified utility function with $C = \{T; D_1; D_2\}$ and $k = \{G; E; A\}$. In the following, we express our hypotheses in terms of the parameters of the utility function.

The first hypothesis refers to baseline discrimination and is consistent with extensive empirical literature highlighting the existence of systematic ingroup favoritism and outgroup discrimination in redistributive decisions (e.g., Balliet et al., 2014). In particular, we assume that:

> ***H1****: Allocators are baseline discriminators:* $\beta_T^G > \beta_T^F$.

Additionally, we assume that the residency status of a foreigner affects the propensity for redistribution as follows:

> ***H2****: Propensity to transfer towards asylum-seekers is higher than the propensity to transfer to economic immigrants:* $\beta_T^A > \beta_T^E; \beta_{D_1}^A > \beta_{D_1}^E; \beta_{D_2}^A > \beta_{D_2}^E$.

H2 rests on the idea that an individual's level of neediness is taken into account when making redistribution decisions (e.g., Konow, 2003; Traub et al., 2023). Since asylum-seekers have arguably gone through greater hardship than economic immigrants, and since the choice of emigrating was forced upon them by war or persecution in their home countries, we assume that *allocators* will be more inclined to transfer to them than to economic immigrants across all treatments we consider.

Hypothesis *H3*, *H4* and *H5* regard the characteristics of the recipient. First, we expect that holding a desirable characteristic -high educational attainment or performing voluntary work- will increase transfers across all recipients, irrespective of the residency status. That is:

> ***H3****: Transfers are higher towards* P_2 *holding desirable characteristics (i.e., either holding a university degree or performing voluntary work):* $\beta_{D_1}^k > 0; \beta_{D_2}^k > 0$*, for each* $k = \{G; E; A\}$.

This is consistent with (e.g., Konow, 2003)'s idea that individuals are more inclined to help individuals who are perceived as being more deserving.[11]

[11] In treatments where P_2 hold desirable characteristics, the transfer towards an individual can be

Second, we are interested in the relative weights of the two desirable characteristics in the redistribution decision. Specifically, we are inclined to explore whether holding one desirable characteristic is rewarded more with higher transfers than holding the other characteristic. We do not have any a priori consideration to conjecture whether holding a university degree should command greater rewards than performing voluntary work. Therefore, we hypothesize that:

> ***H4***: *The propensity to reward the two desirable characteristics is the same for each group of* P_2*:* $\beta^k_{D_1} = \beta^k_{D_2};\ k = \{G; E; A\}$.

Third, we assume an additive relationship of the two desirable characteristics. In other words, the reward of an individual holding both characteristics should be approximately equal to the sum of the propensity to reward an individual holding D_1 and the propensity to reward an individual holding D_2.

> ***H5***: *The propensity to reward an individual holding both desirable characteristics is additive in the two characteristics:* $\beta^k_{D_1 \cup D_2} = 0;\ k = \{G; E; A\}$

Finally, we hypothesize that holding a desirable characteristic is more conducive to higher transfers in the case of foreigners rather than natives. Given the *allocator's* baseline propensity to transfer to a German or foreign recipient, we assume that holding a desirable characteristic is rewarded more when the recipient is an foreigner compared to a German citizen. This hypothesis may be justified by two reasons. First, if an *allocator* is a statistical discriminator, they believe the probability that a recipient holds a desirable characteristic to be lower in case of a foreigner compared to a German citizen. Thus, the information that a foreign recipient holds a desirable characteristic, would lead to an update of the aforementioned belief and consequently, to a higher transfer towards the foreign recipient. Second, an *allocator* who is a statistical discriminator may perceive a foreign recipient to be more similar to a German recipient when holding a desirable characteristic. Keeping the *allocator's* baseline propensity to redistribute constant, the additional information should lead to a higher transfer towards a foreign recipient holding a desirable characteristic. Hence, we posit:

> ***H6***: *Transfers towards foreigners holding desirable characteristics are relatively higher than transfers towards Germans holding desirable characteristics:* $\beta^F_{D_1} > \beta^G_{D_1}; \beta^F_{D_2} > \beta^G_{D_2}$.

An corollary of *H6* is that discrimination againt foreigners is reduced when holding desirable characteristics.

expressed, in terms of our utility function, as being dependent on the sum between β^k_T - namely, the basic propensity to transfer to an individual without desirable characteristics - and β^k_D - namely, the propensity to transfer additional sums of money, in comparison to baseline, to deserving individuals. In order to identify β^k_D in our econometric analysis we then need to subtract the coefficient associated with the No-desirable characteristics treatment to the coefficient associated with the Desirable Characteristic treatment.

5 Results

5.1 Descriptive results

In this section, we focus on the first redistribution decision corresponding to an one-to-one transfer ($\delta = 1$). We analyze the impact of the efficiency parameter separately in Section 5.4. Overall, we find that participants transferred on average 42.8% ($s.d. = 2.29$) of the endowment from German stakeholder (*Person 1*) to a recipient (*Person 2*), which corresponds to €2.14. The amount transferred differs, however, with the three dimensions residency status, education, and voluntary work, we varied in our treatments. Figure 2 depicts the average amount transferred by the residency status of the recipient, i.e., German citizen (dark grey), asylum-seeker (grey), or economic immigrant (bright grey). A visual inspection suggests that allocators transferred a lower share of the endowment to an asylum-seeker ($m = 42.3\%$, $s.d. = 0.29$) compared to a German recipient ($m = 47.2\%$, $s.d. = 0.30$), and an even smaller share to an economic immigrant ($m = 38.9\%$, $s.d. = 0.30$). This is statistically confirmed by a Wilcoxon Ranksum Test (WRST) for all pairwise comparisons: German vs. asylum-seeker ($z = 3.00$, $P = 0.0027$, $N = 1199$), German vs. economic immigrant ($z = 4.88, p < 0.0001, N = 1208$), and asylum-seeker vs. economic immigrant ($z = 2.01, p = 0.044, N = 1207$).

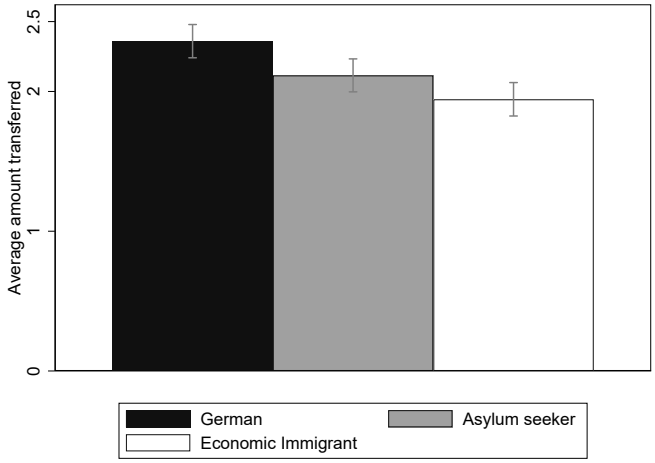

Figure 2: Average amount transferred by a German allocator from a German stakeholder to a recipient

Notes: Recipients can be either another German (dark grey) or an Asylum seeker (grey) or an Economic immigrant (bright grey).

Having a closer look at the distribution of the transfers (Figure 3), it is noticeable that most of the difference in transfers across recipient groups occurs on the $t = 0$ level, while the frequency for $t = 5$ is virtually the same across groups. For German recipients and asylum-seekers both the modes and the medians of the distributions are $t = 2$, whereas for economic immigrants the mode is $t = 0$ and the median is $t = 1$. We interpret this difference due to the residency status as evidence for significant ingroup favoritism for German recipients (*H1*). It also suggests that asylum-seekers

are treated more benevolent than economic immigrants pointing to a considerations of neediness (*H2*).

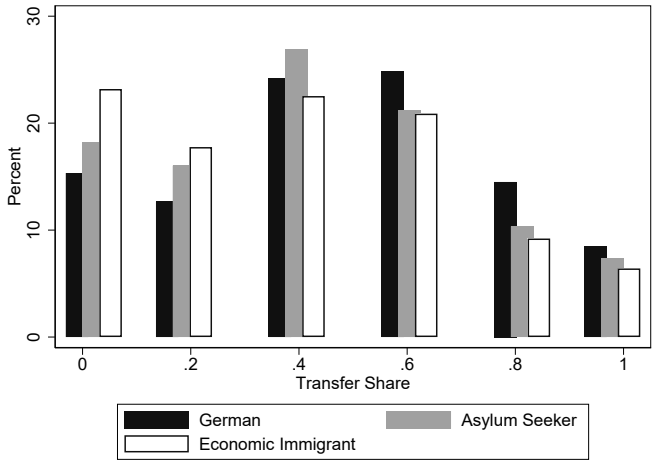

Figure 3: Histogram of transfers by recipient's reseidency status

Regarding the desirable characteristics, we find quite different results. Pooling the three groups of recipients together, we find no differences in transfers between recipients with low education ($m = 42.77\%$, $s.d. = 0.30$) compared to recipients with high education ($m = 42.78\%$, $s.d. = 0.29$). This is visually confirmed by Figure 4 and statistically confirmed by an WRST ($z = -0.18, p = 0.86, N = 1807$).

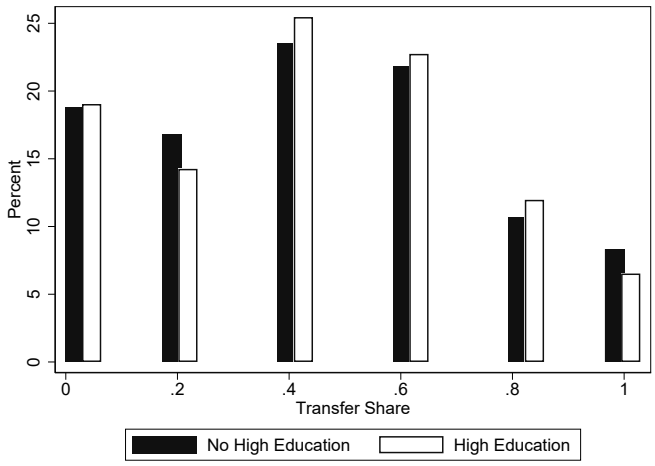

Figure 4: Histogram of transfers by education attainment

For recipients performing voluntary work ($m = 47.1\%$, $s.d. = 0.30$), however, transfers are substantially higher than for those not performing voluntary work ($m = 38.3\%$, $s.d. = 0.29$). Figure 6 shows that the distribution for recipients performing voluntary work is more skewed to the right, i.e., higher transfers are mor frequent compared to recipients not performing voluntary work. A WRST confirms that the differences in transfers is statistically significant ($z = 6.16$, p<0.001, $N = 1807$).

Hence, we conclude that performing voluntary work is valued more than educational attainment on aggregate. This results holds also for the cases $\delta = 0.5$ and $\delta = 2$. In the next sections, we analyse these effects in detail by recipient groups.

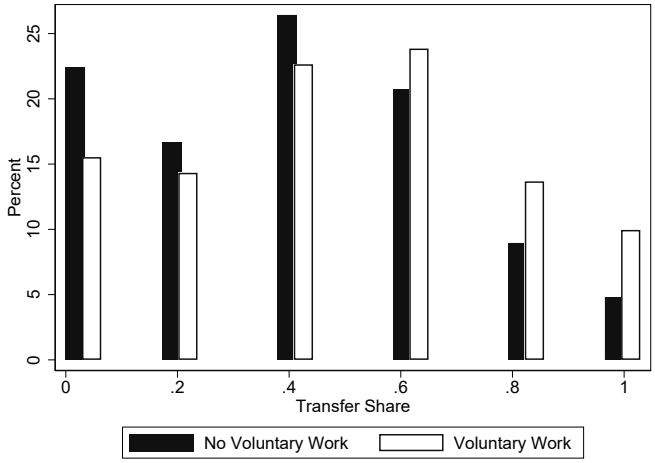

Figure 5: Histogram of transfers by engagement in voluntary work

5.2 Main results

In this section, we present our main results with respect to the two theoretical concepts presented above. The first concept is the propensity to transfer measured as the observed transfers in each treatment. Additionally, we calculate premia for holding desirable characteristics. The second concept refers to discrimination measured as the difference between a German recipient and a foreigner holding the same characteristics.

5.2.1 Propensity to transfer

The first variable of interest is the propensity to transfer to a recipient. We estimate the following econometric model derived from our theoretical background laid out in Section 2:

$$t_{ir} = c + \sum_{j \in J; k \in K} b_j^k T_j^k + \gamma X_i + \varepsilon_{ir} \tag{4}$$

We observe the optimal transfer t^*, as determined in equation (3), through t_{ir}, which is the amount transferred by participant i from *Person 1* to *Person 2* in a decision $r = \{1, 2, 3\}$ for each value of the efficiency parameter $\delta \in \left\{\frac{1}{2};\ 1;\ 2\right\}$. c is a constant and b_j^k is a dummy identifying each treatment T_j^k, where $k = \{G, E, A\}$ and $J = \{\oslash, D_1, D_2, D_3\}$ are sets identifying *Person 2*'s residency status and desirable characteristics, respectively. $\oslash$ denotes the absence of desirable characteristics in J; D_1 identifies recipients having high educational attainment, and D_2 identifies recipients performing voluntary work; $D_3 \equiv D_1 \cup D_2$ identifies recipients having both desirable characteristics. X_i is a vector of individual controls or attitudinal

characteristics, and γ is the vector of estimated coefficients associated with them. ε_{ir} is an error term.

Estimating the parameters b_j^k of model (4) allows us to determine the propensity to transfer across residency status and the reward for recipients holding one of the desirable characteristics or both. Furthermore, we are able to estimate the additional reward for recipients holding both characteristics in relation to a recipient holding just one of the two characteristics as included in our utility function (1). We estimate the model using Tobit regressions as the amount transferred is censored at the upper and lower end and identify the parameters of our utility function by means of parameter tests (see Appendix: Section 7.6). In all regressions presented in this section, we control for the efficiency parameter, age, gender, and region as our sampling quotas and cluster at the individual level.

The main results for the propensity to transfer are presented in Table 2. The parameters are estimated based on the main regression given by equation (4) with respect to the baseline category which is a German citizen without desirable characteristics β_T^G (see Table 17). In a first step, we compare treatments without any desirable characteristic (β_T). As suggested by *H1*, we find evidence for baseline discrimination, i.e., the propensity to transfer to a German citizen β_T^G is significantly higher compared to both asylum-seekers β_T^A ($p = 0.026$) and economic immigrant β_T^E ($p < 0.001$).

Table 2: Estimation of the premium a for a desirable characteristic with respect to own group and utility function parameters

	β_T	β_{D_1}	β_{D_2}	$\beta_{D_1 \cup D_2}$	$\beta_{D_1 \cap D_2}$	$\beta_{D_1} vs. \beta_{D_2}$
German (G)	BASE	-0.196	0.562**	0.109	0.475**	-0.758***
		(0.213)	(0.211)	(0.313)	(0.226)	(0.217)
Economic immigrant (EM)	-0.777***	0.145	0.807***	-0.185	0.766***	-0.662***
	(0.222)	(0.232)	(0.246)	(0.328)	(0.222)	(0.242)
Asylum seeker (AS)	-0.502**	0.343	0.783***	-0.622**	0.505**	-0.440**
	(0.225)	(0.23)	(0.23)	(0.316)	(0.229)	(0.217)
Economic immigrant vs.	-0.275	-0.199	0.023	0.437		
Asylum seeker	(0.329)	(0.327)	(0.336)	(0.455)		
German vs. Economic immigrant		-.341	-.245	.294		
		(.315)	(.324)	(.452)		
German vs. Asylum seeker		-0.540*	-.222	.731		
		(.313)	(.312)	(.444)		

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work, $\beta_{D_1 \cap D_2}$ = Both desirable characteristics. Control variables comprise income, age, gender, education, and region. Standard errors are clustered at the individual level.See Table 17 in the Appendix for the underlying regression. The results of Lincom tests on equality of coefficients are reported at the bottom of the table. *p<0.1; **p<0.05; ***p<0.01.

Further, we find that *allocator*'s propensity to transfer differs between asylum-seekers and economic immigrants. Pooling all treatments together, we find that *allocators* tend to transfer more to Asylum-seekers than to economic immigrants, as suggested in the descriptive results in Section 5.1. This observation is statistically confirmed by a Wald-Test rejecting the null hypothesis that the difference of the sum

of coefficients identifying asylum-seekers and economic immigrants is equal to zero ($\hat{b} = 1.02$, $s.d. = 0.46$, $p = 0.026$). In particular, asylum-seekers holding a university degree receive significantly higher transfers than economic immigrants holding a university degree ($(\hat{\beta}^A_T + \hat{\beta}^A_{D_1}) - (\hat{\beta}^E_T + \hat{\beta}^E_{D_1}) = 0.47$, $s.d. = 0.22$, $p = 0.034$), while performing community work does not lead to a significant difference in transfers ($(\hat{\beta}^A_T + \hat{\beta}^A_{D_2}) - (\hat{\beta}^E_T + \hat{\beta}^E_{D_2}) = 0.25$, $s.d. = 0.29$, $p = 0.29$). Hence, we find asylum-seekers receive higher transfers than economic immigrants across all treatments. This corroborates *H2*. Regarding the desirable characteristics, the largest difference occurs for high educational attainment.

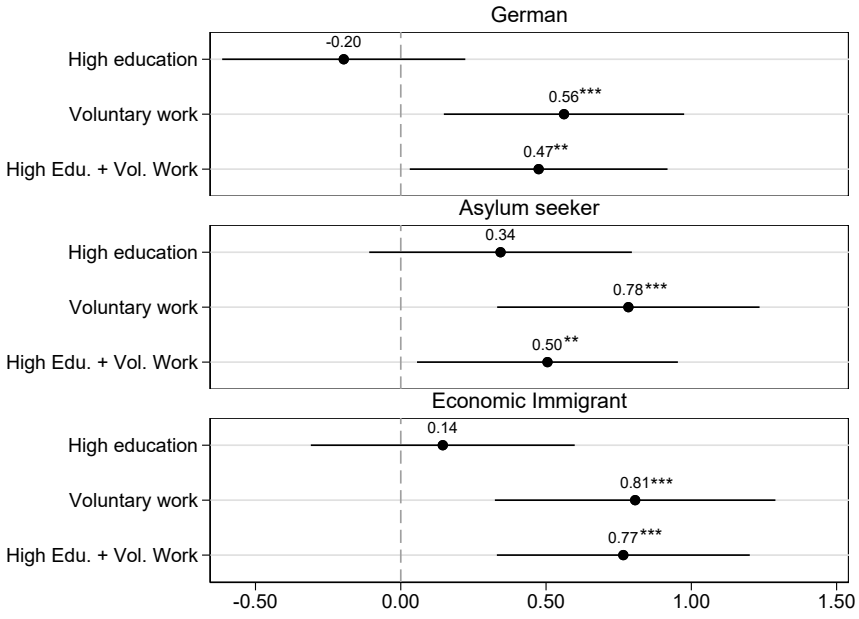

Figure 6: Desirability premia by recipient group

Notes: Desirability premia are computed from the coefficients of the regression reported in Table 2.

In the next step, we compute the premia for desirable characteristics, i.e., the extra transfer given to a recipient holding a desirable characteristic compared to a recipient having the same residency status without such a characteristic ($\hat{\beta}^k_{D_i} - \hat{\beta}^k_T$, $k = \{G, E, A\}$, $i = \{1, 2\}$). The premia are plotted in Figure 6 and reported in Table 2. Surprisingly, high educational attainment has little effect on the propensity to transfer across all recipient groups. Specifically, we find a negative effect for German recipients albeit not statistically different from zero ($p = 0.36$). Conversely, the effect is positive for foreigners but also not significantly different from 0 for both asylum-seekers ($p = 0.14$) and economic immigrants ($p = 0.53$). In contrast, performing voluntary work is rewarded with higher transfers irrespective of the residency status, German recipients ($p = 0.008$), asylum-seekers ($p = 0.001$), and economic immigrants ($p = 0.001$).[12] Hence, we conclude that *H3* is supported only with respect to voluntary work but not for educational attainment.

[12]The same results hold merging the three groups. In this case, the premium for educational attainment is again not significantly different from zero ($\hat{b} = 0.29$, $s.d. = 0.39$, $p = 0.46$), while performing voluntary work is highly significant ($\hat{b} = 2.15$, $s.d. = 0.39$, $p < 0.001$).

Additionally, it is worth noting that the premium associated with voluntary work is always significantly higher than the premium for high educational attainment for all, German recipients ($p < 0.001$), asylum-seekers ($p = 0.043$), and economic immigrants ($p = 0.006$) (see Table 2, column 6). This holds also when pooling the three recipient groups ($p < 0.001$). Therefore, we reject *H4* since recipients are rewarded significantly more when performing voluntary work compared to having high educational attainment.

Finally, contrary to *H5*, we find that holding both desirable characteristics relative to holding just one characteristic does not bring about any additive effects, as $\hat{\beta}^k_{D_1 \cap D_2}$; $k = \{G; E; A\}$ is not significantly different from 0 for Germans ($\hat{b} = 0.11$, $s.d. = 0.32$, $p = 0.73$), and economic immigrants ($\hat{b} = -0.19$, $s.d. = 0.33$, $p = 0.57$), whereas it is significantly less than zero for asylum seekers ($\hat{b} = -0.62$, $s.d. = 0.32$, $p = 0.049$). Hence, having both desirable characteristics does only affect the propensity to transfers for asylum-seekers marginally in a negative fashion.

Nevertheless, having both desirable characteristics brings about a significant premium, as the estimated coefficient $\hat{\beta}_{D_1} + \hat{\beta}_{D_2} = \hat{\beta}^k_{D_1 \cap D_2}$ is significantly larger than 0 for Germans ($\hat{\beta}^G_{D_1 \cap D_2} = 0.47$, $s.d. = 0.23$, $p = 0.036$), asylum-seekers ($\hat{\beta}^A_{D_1 \cap D_2} = 0.50$, $s.d. = 0.23$, $p = 0.028$), and economic immigrants ($\hat{\beta}^E_{D_1 \cap D_2} = -0.77$, $s.d. = 0.22$, $p = 0.001$) as depicted in Figure 6.

Finally, we investigate whether the premium for a desirable characteristic is different for a German compared to a foreigner: $\hat{\beta}^G_{D_j} = \hat{\beta}^F_{D_j}$, $j = \{1, 2\}$, $F = \{E; A\}$. In all cases, the effect goes into the predicted direction as stated by *H6* but remains statistically insignificant accept for one instance (see Table 2, lower panel). The effect which is statistically significant is the premium of an asylum-seeker with high educational attainment compared to a German with high educational attainment. In this case, the Wald-Test on the hypotheses that $\hat{\beta}^G_{D_1} = \hat{\beta}^A_{D_1}$ is rejected at weak levels of significance ($p = 0.085$). In all other cases, Wald-Tests fail to reject the hypotheses that $\hat{\beta}^G_{D_1} = \hat{\beta}^E_{D_1}$ ($p = 0.28$), $\hat{\beta}^G_{D_2} = \hat{\beta}^A_{D_2}$ ($p = 0.48$), $\hat{\beta}^G_{D_2} = \hat{\beta}^E_{D_2}$ ($p = 0.44$). Even when pooling all treatments in which desirable characteristics are present (including treatments in which both characteristics are present) and the two immigrant groups together, we are not able to reject the null hypothesis of equality in the premia of Germans and foreigners ($\hat{b} = 1.67$, $s.d. = 1.32$, $t = 1.26$ $p = 0.21$). Therefore, we conclude that the premia for desirable characteristics are larger for immigrants than for German recipients. The differences, however, are not significantly different from zero except for high educational attainment for asylum seekers.

5.2.2 Discrimination

In section 5.2.1, we uncovered the existence of significant ingroup favoritism towards Germans in the absence of desirable characteristics referred to as baseline discrimination, compare the second column of table 2 (β_T). In this section, we analyze the extent to which desirable characteristics reduce these gaps. By "discrimination" we mean the difference in transfers to a German recipient *vis-à-vis* a foreign recipient with the same profile except for their residency status. Figure 7 plots the basic level of discrimination without desirable characteristics ($\Delta\hat{\beta}^k_T = \hat{\beta}^G_T - \hat{\beta}^k_T, k = \{E, A\}$) and the level of discrimination when either one of the two desirable characteristics is

present ($\Delta\hat{\beta}^k_{D_i} = (\hat{\beta}^G_{D_i} + \hat{\beta}^G_T) - (\hat{\beta}^k_{D_i} + \hat{\beta}^k_T), k = \{E, A\}, i = \{1, 2\}$), and when both characteristics are present.

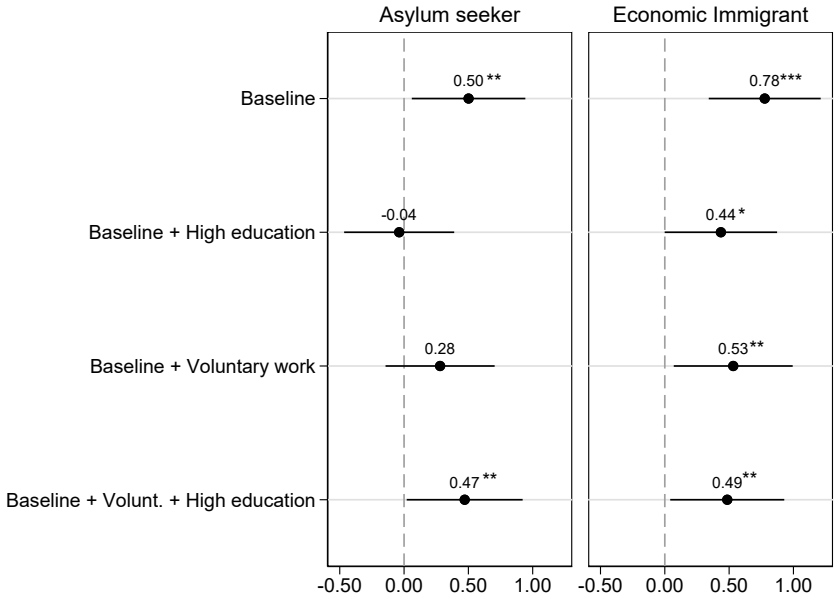

Figure 7: Discrimination by recipient group
Notes: Discrimination gaps are computed from Table 2 and are given in the Appendix in Table 16.

As depicted in Figure 7 and confirmed by Lincom-Tests, we find that discrimination is reduced to virtually zero for asylum seekers holding either high education ($\Delta\hat{\beta}^A_{D_1} = -0.04, p = 0.86$) or performing voluntary work ($\Delta\hat{\beta}^A_{D_2} = 0.28, p = 0.20$). Surprisingly, discrimination increases at significant levels when both characteristics are present ($\Delta\hat{\beta}^A_{D_1 \cap D_2} = 0.47, p = 0.040$). In contrast, discrimination remains significantly different from zero for economic immigrants with high educational attainment ($\Delta\hat{\beta}^E_{D_1} = 0.44, p = 0.051$), performing voluntary work ($\Delta\hat{\beta}^E_{D_2} = 0.53, p = 0.024$), or having both desirable characteristics ($\Delta\hat{\beta}^E_{D_1 \cap D_2} = 0.49, p = 0.032$). Therefore, we conclude that discrimination is reduced to levels that are not significantly different from zero for an asylum-seeker holding one desirable characteristic compared to a German recipient holding the same characteristic. For economic immigrants discrimination remains significant irrespective of desirable characteristics.

5.3 Heterogeneity results

In Section 5.2.1 and Section 5.2.2, we have shown that our participants discriminate at baseline, have a higher propensity to reward voluntary work compared to high education attainment, and that holding one desirable characteristic reduces discrimination for asylum-seekers. In this section, we investigate whether there are heterogeneous responses across subgroups or contexts and analyse underlying motives of the redistribution decisions.

5.3.1 Allocator's individual characteristics

Demographic characteristics Age and gender are important factors explaining attitudes toward immigration (e.g. Dražanová et al., 2022; Lergetporer et al., 2021) and significantly determine perceptions of actual immigration in a country(Alesina et al., 2023). To understand how responses to our informational manipulation are affected by gender and age, we analyze the propensity to transfer and discrimination across treatments by gender and compare the age brackets $[18-40]$ and $[>59]$. Table 3 depicts our results for the premia and discrimination. To identify individual-specific effects for age and gender, an equal distribution of the characteristics across treatments is a prerequisite. Kruskal-Wallis-Tests reveal that this is indeed the case for the characteristics of interest: Age ($\chi^2(11) = 8.457$, $p = 0.6715$), gender ($\chi^2(11) = 3.946$, $p = 0.9715$)

Table 3: Heterogeneity results: Gender and Age

Gender

Premia

	Women				Men				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$
G	Base	-0.351	0.389	0.252	Base	-0.033	0.721**	0.707**	Base	-0.318	-0.333	-0.454
		(.301)	(.314)	(.321)		(.309)	(.282)	(.323)		(.432)	(.421)	(.456)
E	0.615*	-0.246	0.637*	0.780***	0.936***	0.52	0.948***	0.719**	-0.321	-0.766*	-0.31	0.062
	(.316)	(.326)	(.338)	(.288)	(.312)	(.326)	(.353)	(.334)	(.444)	(.46)	(.487)	(.441)
A	0.768**	0.263	0.951***	0.849**	0.264	0.46	0.636**	0.159	0.504	-0.197	0.315	0.69
	(.348)	(.322)	(.344)	(.336)	(.291)	(.328)	(.307)	(.312)	(.455)	(.46)	(.463)	(.46)

Discrimination

	Women				Men				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$
E	0.615*	0.511	0.366	0.087	0.936***	0.383	0.709**	0.924***	-0.321	0.127	-0.343	-0.837*
	(.316)	(.311)	(.336)	(.294)	(.312)	(.323)	(.326)	(.345)	(.444)	(.448)	(.467)	(.454)
A	0.768**	0.154	0.205	0.171	0.264	-0.229	0.349	0.811**	0.504	0.383	-0.144	-0.641
	(.348)	(.272)	(.31)	(.307)	(.291)	(.344)	(.298)	(.343)	(.455)	(.438)	(.429)	(.461)

Age

Premia

	18-40 years				>59				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$
G	Base	-0.25	0.544	0.207	Base	-0.021	0.710**	0.638*	Base	-0.229	-0.166	-0.431
		(.364)	(.363)	(.388)		(.369)	(.35)	(.386)		(.52)	(.504)	(.546)
E	0.257	-0.336	0.753*	0.529	1.330***	1.016**	1.230**	1.505***	-1.073*	-1.352**	-0.477	-0.976*
	(.372)	(.407)	(.414)	(.373)	(.416)	(.434)	(.478)	(.421)	(.557)	(.596)	(.632)	(.563)
A	0.061	-0.218	0.858**	0.266	0.19	0.331	0.373	0.424	-0.13	-0.549	0.485	0.759
	(.367)	(.372)	(.382)	(.36)	(.378)	(.39)	(.402)	(.401)	(.528)	(.538)	(.554)	(.9)

Discrimination

	18-40 years				>59				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$
E	0.257	0.343	0.048	-0.066	1.330***	0.293	0.810*	0.462	-1.073*	0.05	-0.762	-0.528
	(.372)	(.397)	(.402)	(.389)	(.416)	(.389)	(.422)	(.391)	(.557)	(.556)	(.582)	(.551)
A	0.061	0.029	-0.253	0.002	0.19	-0.162	0.527	0.404	-0.13	0.191	-0.781	-0.402
	(.367)	(.367)	(.376)	(.381)	(.378)	(.383)	(.374)	(.41)	(.528)	(.531)	(.529)	(.557)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\hat{\beta}_{D_1\cap D_2}$ = Both desirable characteristics.
Control variables comprise income, age/gender, education, and region.
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

Overall, we find minor gender differences in our sample. Both women and men show a significantly positive propensity to reward voluntary work in the case of asylum-seekers and economic immigrants (Women: $\hat{\beta}^E_{D_2} = 0.637, p = 0.060$, $\hat{\beta}^A_{D_2} = 0.951, p = 0.006$; Men:$\hat{\beta}^E_{D_2} = 0.948, p = 0.007$,$\hat{\beta}^A_{D_2} = 0.636, p = 0.039$). Additionally, men reward voluntary work also in the case of German recipients ($\hat{\beta}^G_{D_2} = 0.721, p = 0.011$). Regarding the combination of both characteristics, women reward asylum-seekers and economic immigrants ($\hat{\beta}^E_{D_1 \cap D_2} = 0.780, p = 0.007$, $\hat{\beta}^A_{D_1 \cap D_2} = 0.849, p = 0.012$), while men only reward the combination for economic immigrants ($\hat{\beta}^E_{D_1 \cap D_2} = 0.719, p = 0.032$) and German recipients ($\hat{\beta}^G_{D_1 \cap D_2} = 0.707, p = 0.029$). However, the differences in rewards between women and men are generally not significant, except for a weakly significant difference for economic immigrants having high educational attainment. In this case, women reward high educational attainment less than men ($p = 0.096$). In terms of discrimination, women show significant baseline discrimination against economic immigrants ($\Delta\hat{\beta}^E_T = 0.615, p = 0.052$) and asylum-seekers ($\Delta\hat{\beta}^A_T = 0.768, p = 0.027$), while men only exhibit discrimination against economic immigrants ($\Delta\hat{\beta}^E_T = 0.936, p = 0.003$). Furthermore, a gender difference emerges in the response to information about characteristics. Women respond strongly to our informational manipulation, resulting in a reduction of discrimination across all desirable characteristics and residency status. In contrast, men discriminate against economic immigrants performing voluntary work ($\Delta\hat{\beta}^E_{D_2} = 0.709, p = 0.030$) and having both desirable characteristics ($\Delta\hat{\beta}^E_{D_1 \cap D_2} = 0.924, p = 0.007$) and asylum-seekers holding both desirable characteristics ($\Delta\hat{\beta}^A_{D_1 \cap D_2} = 0.811, p = 0.018$).
Concerning age, we find that participants in the age bracket $[18 - 40]$ show a positive propensity to reward engagement in voluntary work for asylum-seekers ($\hat{\beta}^A_{D_2} = 0.858, p = 0.025$) and economic immigrants ($\hat{\beta}^E_{D_2} = 0.753, p = 0.069$). Participants older than 59 years significantly value all desirable characteristics for economic immigrants: high educational attainment ($\hat{\beta}^E_{D_1} = 1.015, p = 0.019$), engagement in voluntary work ($\hat{\beta}^E_{D_2} = 1.23, p = 0.010$), and the combination of both desirable characteristics ($\hat{\beta}^E_{D_1 \cap D_2} = 1.505, p < 0.001$). Additionally, they value engagement in voluntary work ($\hat{\beta}^G_{D_2} = 0.710, p = 0.043$) and the combination of both desirable characteristics ($\hat{\beta}^G_{D_1 \cap D_2} = 0.638, p = 0.098$) for German recipients. Finally, participants older than 59 years show significant baseline discrimination against economic immigrants ($\Delta\hat{\beta}^E_T = 1.330, p = 0.001$), which diminishes when provided with information about desirable characteristics.

Income, education, employment status, and qualification Regarding income and labor market specific characteristics, the literature suggests two potential effects. First, the labor market competition hypothesis suggests a positive correlation between high education, high income, and more favorable attitudes towards immigration (Dražanová et al., 2022). Assuming that immigrants often occupy lower tiers of the income distribution, labor market competition should primarily affects lower-educated, low-income, and unemployed individuals and therefore lead to more discrimination against immigrants. Second, Dahlberg et al. (2012), show that an increase in the inflow of refugees decreases support for redistribution, especially

among high-income earners. In order to test for these effects, we analyse the propensity to reward desirable characteristics and discrimination separately by income, educational attainment, employment status, and job qualifications. In particular, we distinguish between participants with a low-income ($0-1300$ Euros) and participants with a high-income (>3000 Euros). Further, we compare participants having low educational attainment (no degree, secondary school, junior high school) and very high educational attainment (university degree, doctorate/PhD),[13] and participant being employed - employees subject to social security contributions or self-employed - and not employed (e.g. mini job, students, retirees). Regarding job qualifications, we differentiate between low-skilled jobs and high-skilled jobs.[14] Kruskal-Wallis-Tests reveal an equal distribution of the characteristics across treatments that this is indeed the case for the characteristics of interest: Income ($\chi^2(11) = 4.099, p = 0.967$), education ($\chi^2(11) = 13.957, p = 0.235$) employment ($\chi^2(11) = 7.834, p = 0.728$), qualification ($\chi^2(11) =, p = 5.152$).

Consistent with the labor market competition hypothesis, individuals with low-skilled jobs exhibit a negative propensity to reward education for German recipients ($\hat{\beta}^G_{D1} = -0.888, p = 0.078$) and economic immigrants ($\hat{\beta}^E_{D2} = -1.144, p = 0.087$), while participants with high-skilled jobs show a positive premium for voluntary work and the combination of both characteristics for these groups ($\hat{\beta}^G_{D2} = 0.825, p = 0.024$; $\hat{\beta}^E_{D2} = 1.025, p = 0.014$; $\hat{\beta}^G_{D_1 \cap D_2} = 0.820, p = 0.019$; $\hat{\beta}^E_{D_1 \cap D_2} = 0.7, p = 0.062$). The propensity to reward education is significantly different between both groups ($p^E = 0.044$, $p^G = 0.061$). In general, participants with low income and those who are not employed exhibit a positive propensity to reward voluntary work for asylum seekers (Low income: $\hat{\beta}^A_{D2} = 1.77, p = 0.001$; Not employed:$\hat{\beta}^A_{D2} = 1.159, p = 0.001$), and the combination of both characteristics (Not employed: $\hat{\beta}^E_{D_1 \cap D_2} = 1.012, p = 0.002$, $\hat{\beta}^A_{D_1 \cap D_2} = 0.867, p = 0.010$). In contrast, high-income and employed participants exhibit a positive propensity to reward voluntary work for economic immigrants (High income: $\hat{\beta}^E_{D2} = 0.876, p = 0.039$), or economic immigrants and German recipients ($\hat{\beta}^E_{D2} = 1.022, p = 0.002$, $\hat{\beta}^G_{D2} = 0.741, p = 0.009$), respectively. This suggests that the support for redistribution is not decreased for high-income participants in our sample. Finally, participants with lower levels of education exhibit a negative premium for education in case of German recipients ($\hat{\beta}^G_{D1} = -0.690, p = 0.037$).

[13] We focus here on low and very high education, as we expect to find the main differences between these two groups.

[14] When we distinguish by qualification level of the job, we exclude self-employed individuals, as we do not have information about the qualification level. We define low-skilled jobs as: (i) Blue-collar worker (also in agriculture): Unskilled worker, Semi-skilled worker; (ii) Civil servant (including judges and professional soldiers): Lower level, Middle level; (iii) White-collar worker: Salaried employee engaged in unskilled activities without completed training/ education; Salaried employee engaged in unskilled activities with completed training/education. We define high-skilled jobs as: (i) Blue-collar worker (also in agriculture): Trained worker or skilled worker, Foreman/forewoman, Master craftsperson; (ii) Civil servant (including judges and professional soldiers: Upper level, Executive level; (iii) White-collar worker: Industry or factory foreman/forewoman in a salaried position; Salaried employee engaged in skilled activities (e.g., executive officer, book-keeper, technical draftsman); Salaried employee engaged in highly skilled activities or managerial function(e.g. scientist, engineer, department head); Salaried employee with extensive managerial duties (e.g., managing director, business manager, head of a large firm or concern)

Table 4: Heterogeneity results: Income, education, employment, and qualification

Income

Premia

	Low (0-1300 Euros)				High (> 3200 Euros)				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.21	0.254	0.719	Base	-0.12	0.453	0.725*	Base	-0.09	-0.199	-0.006
		(.509)	(.48)	(.502)		(.364)	(.396)	(.383)		(.624)	(.623)	(.63)
E	0.839*	-0.058	0.219	0.35	0.478	-0.297	0.876**	0.794*	0.361	0.239	-0.656	-0.444
	(.497)	(.485)	(.531)	(.46)	(.407)	(.448)	(.425)	(.447)	(.641)	(.66)	(.68)	(.642)
A	1.026*	0.758	1.770***	0.463	0.379	0.199	0.361	0.528	0.647	0.559	1.409**	0.398
	(.574)	(.596)	(.534)	(.581)	(.392)	(.409)	(.398)	(.439)	(.693)	(.721)	(.663)	(1.241)

Discrimination

	Low (0-1300 Euros)				High (> 3200 Euros)				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.839*	0.687	0.874*	1.208***	0.478	0.655	0.056	0.409	0.361	0.032	0.818	0.798
	(.497)	(.494)	(.515)	(.465)	(.407)	(.41)	(.414)	(.426)	(.641)	(.642)	(.66)	(.631)
A	1.026*	0.058	-0.489	1.282**	0.379	0.06	0.472	0.577	0.647	-0.002	-0.961	0.706
	(.574)	(.534)	(.431)	(.51)	(.392)	(.383)	(.4)	(.433)	(.693)	(.657)	(.586)	(.668)

Education

Premia

	Low				Very high				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.691**	0.513	0.005	Base	-0.760*	0.021	0.018	Base	0.07	0.492	-0.012
		(.332)	(.367)	(.419)		(.448)	(.426)	(.442)		(.556)	(.563)	(.609)
E	1.093***	0.146	0.235	0.505	1.216**	0.134	1.045*	0.894	-0.123	0.012	-0.81	-0.389
	(.36)	(.354)	(.403)	(.347)	(.53)	(.574)	(.547)	(.573)	(.64)	(.674)	(.681)	(.67)
A	0.784**	0.264	0.481	0.282	1.114**	0.885*	1.318**	0.775	-0.329	-0.622	-0.837	-0.21
	(.397)	(.447)	(.409)	(.369)	(.538)	(.513)	(.529)	(.575)	(.667)	(.682)	(.668)	(.936)

Discrimination

	Low				Very high				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	1.093***	0.256	1.371***	0.593	1.216**	0.321	0.192	0.339	-0.123	-0.065	1.180*	0.254
	(.36)	(.326)	(.41)	(.41)	(.53)	(.497)	(.446)	(.493)	(.64)	(.595)	(.608)	(.64)
A	0.784**	-0.17	0.816**	0.507	1.114**	-0.532	-0.184	0.357	-0.329	0.362	1.000*	0.151
	(.397)	(.388)	(.381)	(.393)	(.538)	(.417)	(.415)	(.488)	(.667)	(.571)	(.564)	(.626)

Employed

Premia

	Not employed				Employed				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.377	0.413	0.23	Base	0.013	0.741***	0.727***	Base	-0.39	-0.328	-0.497
		(.35)	(.317)	(.373)		(.263)	(.285)	(.277)		(.438)	(.426)	(.465)
E	0.840**	0.196	.572	1.012***	0.691**	0.112	1.022***	0.602**	0.149	0.084	-0.45	0.41
	(.354)	(.363)	(.372)	(.329)	(.282)	(.301)	(.332)	(.304)	(.453)	(.471)	(.499)	(.448)
A	0.663*	0.301	1.159***	0.867***	0.363	0.394	0.521*	0.287	0.3	-0.093	0.638	0.58
	(.356)	(.369)	(.364)	(.334)	(.287)	(.294)	(.293)	(.312)	(.459)	(.473)	(.467)	(.458)

Discrimination

	Not employed				Employed				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.840**	0.267	0.682**	0.058	0.691**	0.592**	0.41	0.816***	0.149	-0.325	0.271	-0.758
	(.354)	(.359)	(.337)	(.35)	(.282)	(.282)	(.333)	(.3)	(.453)	(.457)	(.473)	(.461)
A	0.663*	-0.014	-0.083	0.026	0.363	-0.018	0.583**	0.803***	0.3	0.004	-0.666	-0.777*
	(.356)	(.363)	(.325)	(.356)	(.287)	(.27)	(.292)	(.303)	(.459)	(.452)	(.436)	(.468)

Qualification

Premia

	Low-skilled				High-skilled				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.888*	0.711	0.385	Base	0.242	0.825**	0.820**	Base	-1.130*	-0.114	-0.436
		(.503)	(.639)	(.504)		(.335)	(.364)	(.348)		(.603)	(.738)	(.613)
E	0.193	-1.144*	0.532	-0.289	0.719**	0.388	1.025**	0.700*	-0.527	-1.531**	-0.493	-0.989
	(.509)	(.668)	(.649)	(.61)	(.357)	(.363)	(.415)	(.375)	(.621)	(.759)	(.764)	(.714)
A	0.705	0.187	0.912	0.22	0.177	0.445	0.452	0.166	0.527	-0.258	0.46	0.053
	(.518)	(.603)	(.58)	(.641)	(.363)	(.36)	(.368)	(.39)	(.637)	(.705)	(.689)	(.751)

Discrimination

	Low-skilled				High-skilled				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.193	0.448	0.372	0.866	0.719**	0.574*	0.519	0.840**	-0.527	-0.126	-0.147	0.026
	(.509)	(.67)	(.75)	(.606)	(.357)	(.342)	(.422)	(.372)	(.621)	(.755)	(.861)	(.71)
A	0.705	-0.371	0.503	0.87	0.177	-0.026	0.55	0.831**	0.527	-0.345	-0.047	0.039
	(.518)	(.579)	(.696)	(.627)	(.363)	(.331)	(.371)	(.378)	(.637)	(.667)	(.789)	(.733)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\hat{\beta}_{D_1 \cap D_2}$ = Both desirable characteristics.
Control variables comprise income, education, age, gender, and region for employment and qualification. Control variables comprise income (education), age, gender, and region for education (income).
Low educational attainment = no degree, secondary school, junior high school; Very high educational attainment= university degree, doctorate/PhD)
Employed = employees subject to social security contributions or self-employed
Low-skilled jobs = (i) Blue-collar worker (also in agriculture): Unskilled worker, Semi-skilled worker; (ii) Civil servant (including judges and professional soldiers): Lower level, Middle level; (iii) White-collar worker: Salaried employee engaged in unskilled activities without completed training/ education; Salaried employee engaged in unskilled activities with completed training/education.
High-skilled jobs = (i) Blue-collar worker (also in agriculture): Trained worker or skilled worker, Foreman/forewoman, Master crafts-person; (ii) Civil servant (including judges and professional soldiers: Upper level, Executive level; (iii) White-collar worker: Industry or factory foreman/forewoman in a salaried position; Salaried employee engaged in skilled activities (e.g., executive officer, book-keeper, technical draftsman); Salaried employee engaged in highly skilled activities or managerial function(e.g. scientist, engineer, department head); Salaried employee with extensive managerial duties (e.g., managing director, business manager, head of a large firm or concern)
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

Regarding discrimination, we observe that participants with low income, low education, and no employment exhibit significant baseline discrimination (Low-income: $\Delta\hat{\beta}_T^E = 0.839, p = 0.091$; $\Delta\hat{\beta}_T^A = 1.026, p = 0.074$; Low education: $\Delta\hat{\beta}_T^E = 1.093, p = 0.002$; $\Delta\hat{\beta}_T^A = 0.784, p = 0.048$; Not employed: $\Delta\hat{\beta}_T^E = 0.840, p = 0.018$; $\Delta\hat{\beta}_T^A = 0.663, p = 0.063$). Discrimination decreases when both immigrant groups have high educational attainment but only partially increases when asylum seekers or economic immigrants perform voluntary work (Low-income: $\Delta\hat{\beta}_{D2}^E = 0.874, p = 0.090$; Low education: $\Delta\hat{\beta}_{D2}^E = 1.371, p = 0.001$; $\Delta\hat{\beta}_{D2}^A = 0.816, p = 0.032$; Not employed: $\Delta\hat{\beta}_{D2}^E = 0.682, p = 0.043$), or have both desirable characteristics (Low-income: $\Delta\hat{\beta}_{D_1 \cap D_2}^E = 1.208, p = 0.010$; $\Delta\hat{\beta}_{D_1 \cap D_2}^A = 1.282, p = 0.012$). High-skilled and employed participants also show baseline discrimination, in particular against economic immigrants (High-skilled: $\Delta\hat{\beta}_T^E = 0.719, p = 0.044$, Employed: $\Delta\hat{\beta}_T^E = 0.691, p = 0.014$). Discrimination stays significant even if the economic immigrant has high educational attainment (High-skilled: $\Delta\hat{\beta}_{D1}^E = 0.574, p = 0.093$, Employed: $\Delta\hat{\beta}_{D1}^E = 0.592, p = 0.036$) or holds both desirable characteristics (High-skilled: $\Delta\hat{\beta}_{D_1 \cap D_2}^E = 0.840, p = 0.024$, Employed: $\Delta\hat{\beta}_{D_1 \cap D_2}^E 0.816 =, p = 0.006$). Additionally, employed individuals discriminate against asylum-seekers performing voluntary work ($\Delta\hat{\beta}_{D2}^A = 0.583, p = 0.046$) or having both desirable characteristics ($\Delta\hat{\beta}_{D_1 \cap D_2}^A = 0.803, p = 0.008$).

Voting and political preferences Right-wing voters who perceive immigrants to have 'less desirable' characteristics, demonstrate the most significant misperceptions regarding immigration, as highlighted by Alesina et al. (2023). Moreover, individuals identifying as right-wing or holding anti-immigration sentiments may particularly express aversion to redistribution policies targeting asylum-seekers and economic immigrants (Alesina et al., 2021). Table 8 depicts the propensity to transfer and discrimination with respect to heterogeneity in voting patterns and political orientation. We compare far right-wing voters ("AFD") and to all others, i.e., those with either moderately right, middle or left-wing political orientation ("CDU", "FDP", "SPD", "Green party", " The Left"). Additionally, we categorize individuals along a right-to-left political orientation scale. On a 5-point Likert scale participants classified themselves between left-wing and right-wing from extremely left (1) to extremely right (5). In this section, we compare those identifying as right or extremely right as right-wing, and those identifying as extremely left or left as left-wing. A Kruskal-Wallis-Test for voting ($\chi^2(11) = 4.922, p = 0.935$) indicates that there are no different distributions across treatments. However, we find a significantly different distribution for political orientation on the left-to-right scale ($\chi^2(11) = 19.910, p = 0.047$), indicating that political orientation does not necessarily coincide with actual voting behavior as we classified it. Further, results for political orientation should therefore be interpreted with caution.

The propensity to transfer and discrimination differs significantly along political lines. Voters supporting middle and left parties significantly reward voluntary work and the presence of both desirable characteristics for economic immigrants and asylum-seekers ($\hat{\beta}^A_{D2} = 0.764, p = 0.001; \hat{\beta}^A_{D_1 \cap D_2} = 0.443, p = 0.052; \hat{\beta}^E_{D2} = 0.86, p = 0.001; \hat{\beta}^E_{D_1 \cap D_2} = 0.803, p < 0.000$). In contrast, right-wing voters particularly value performing voluntary work for German recipients ($\hat{\beta}^G_{D2} = 1.887, p < 0.001$) and partially for asylum-seekers ($\hat{\beta}^A_{D2} = 1.798, p = 0.055$). This results in a significant difference in appreciation of voluntary work for German recipients between right-wing and all other voters ($p = 0.001$). In the absence of desirable characteristics, moderately right, middle and left voters discriminate against economic immigrants ($\Delta\hat{\beta}^E_T = 0.676, p = 0.003$) and marginally discriminate against asylum-seekers ($\Delta\hat{\beta}^A_T = 0.413, p = 0.067$). Conversely, right-wing voters discriminate significantly against asylum-seekers ($\Delta\hat{\beta}^A_T = 2.406, p = 0.012$) and marginally against economic immigrants ($\Delta\hat{\beta}^E_T = 1.198, p = 0.051$). Discrimination decreases for right-wing participants only when asylum-seekers have high educational attainment($\Delta\hat{\beta}^A_{D1} = 1.227, p = 0.054$) or hold both desirable characteristics($\Delta\hat{\beta}^A_{D_1 \cap D_2} = 1.516, p = 0.031$). In all other cases, discrimination increases with the provision of information, most notably for voluntary work ($\Delta\hat{\beta}^E_{D2} = 3.056, p < 0.001$, $\Delta\hat{\beta}^A_{D2} = 2.494, p < 0.001$). This is explained by the significant value right-wing voters place on German recipients performing voluntary work compared to immigrants. The differences in discrimination against immigrants are significant between right-wing and all other voters. The general effects persist when stratifying by political orientation. However, individuals identifying themselves as right-wing on the political spectrum do not exhibit significant discrimination against economic immigrants and asylum-seekers holding both characteristics ($\Delta\hat{\beta}^A_{D_1 \cap D_2} = 0.809, p = 0.159; \Delta\hat{\beta}^E_{D_1 \cap D_2} = 0.869, p = 0.124$) and

against asylum-seekers with high educational attainment ($\Delta\hat{\beta}^{A}_{D1} = 0.966, p = 0.146$).

Table 5: Heterogeneity results: Voting and political orientation

Voting

Premia

	All others				Right				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$
G	Base	-0.323	0.331	0.335	Base	0.413	1.887***	1.127	Base	-0.736	-1.556***	-0.791
		(.225)	(.226)	(.236)		(.562)	(.424)	(.686)		(.605)	(.48)	(.725)
E	0.676***	0.097	0.860***	0.803***	1.198*	-0.085	0.028	0.398	-0.522	0.182	0.832	0.405
	(.229)	(.236)	(.247)	(.228)	(.614)	(.681)	(.784)	(.599)	(.655)	(.721)	(.822)	(.641)
A	0.413*	0.29	0.764***	0.443*	2.406**	1.592	1.799*	2.017**	-1.993**	-1.302	-1.035	-1.13
	(.225)	(.228)	(.23)	(.228)	(.959)	(1.002)	(.936)	(.971)	(.986)	(1.028)	(.963)	(1.072)

Discrimination

	All others				Right				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$
E	0.676***	0.256	0.147	0.209	1.198*	1.696***	3.056***	1.927***	-0.522	-1.440**	-2.910***	-1.718**
	(.229)	(.232)	(.244)	(.234)	(.614)	(.632)	(.64)	(.674)	(.655)	(.674)	(.686)	(.714)
A	0.413*	-0.2	-0.02	0.305	2.406**	1.227*	2.494***	1.516**	-1.993**	-1.427**	-2.515***	-1.211
	(.225)	(.226)	(.231)	(.239)	(.959)	(.638)	(.376)	(.703)	(.986)	(.676)	(.441)	(.743)

Political orientation

Premia

	Left				Right				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1\cap D_2}$
G	Base	0.015	0.729	0.676*		-0.086	1.481***	0.091		0.101	-0.752	0.584
		(.375)	(.461)	(.39)		(.588)	(.485)	(.613)		(.7)	(.667)	(.725)
E	0.332	0.53	1.033**	1.315***	1.554**	0.302	0.086	0.776	-1.222	0.229	0.947	0.539
	(.412)	(.412)	(.43)	(.404)	(.632)	(.639)	(.702)	(.585)	(.755)	(.759)	(.82)	(.709)
A	0.174	0.542	1.134***	0.625	1.697**	0.645	1.182*	0.98	-1.523**	-0.103	-0.048	-0.517
	(.384)	(.353)	(.342)	(.393)	(.671)	(.738)	(.634)	(.636)	(.774)	(.819)	(.72)	(1.068)

Discrimination

	Left				Right				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1\cap D_2}$
E	0.332	-0.183	0.027	-0.308	1.554**	1.166**	2.949***	0.869	-1.222	-1.350*	-2.922***	-1.177*
	(.412)	(.377)	(.477)	(.379)	(.632)	(.592)	(.573)	(.566)	(.755)	(.704)	(.746)	(.683)
A	0.174	-0.352	-0.231	0.225	1.697**	0.966	1.995***	0.809	-1.523**	-1.319*	-2.226***	-0.584
	(.384)	(.344)	(.429)	(.398)	(.671)	(.665)	(.437)	(.574)	(.774)	(.75)	(.612)	(.699)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\hat{\beta}_{D_1\cap D_2}$ = Both desirable characteristics.
Control variables comprise income, age, gender, education, and region.
Voting: All others= "CDU", "FDP", "SPD", "Green party", " The Left"; Right= "AFD"
Political orientation: 5-point Likert scale from extremely left (1) to extremely right (5); Variables defines as Right= right and extremely right; Left= left and extremely left
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

Attitudes toward immigration and closeness to Germans In this section, we further analyze the effect of outgroup discrimination and ingroup favoritism. The literature shows that differential treatment of in- and outgroup is typical due to ingroup favoritism rather than outgroup derogation (see Balliet et al., 2014, for a comprehensive summary), while outgroup derogation is particularly present in the case of intergroup conflict (Abbink and Harris, 2019). We distinguish the two concepts based on stated attitudes towards immigration as a proxy for outgroup discrimination and stated closeness to Germans as a proxy for ingroup favoritism. Since these

concepts are two sides of a coin, these statements are correlated ($r = 0.141, p < 0.001$), i.e., the closer someone feels to Germans the more negative the attitude towards immigration. Nevertheless, the two concepts have different policy implications assuming that outgroup discrimination indicates an intergroup conflict. In our sample, we analyze the two concepts again based on the propensity to transfer and discrimination (see Table 6). For our analysis of attitudes towards immigration, we created an index based on four survey items[15] and compare the lowest and highest quartiles of the index since we expect the strongest effects between *allocators* with particularly negative and positive attitudes towards immigration. Closeness to Germans is measured using a 5-point Likert scale from 1=very close to 5=very distant.[16]

Most notably, information on desirable characteristics affects the propensity to transfer for *allocators* with negative and positive attitudes towards economic immigrants holding both desirable characteristics (negative attitudes: $\hat{\beta}^{E}_{D_1 \cap D_2} = 0.882, p = 0.038$; positive attitudes: $\hat{\beta}^{E}_{D_1 \cap D_2} = 0.738, p = 0.028$). Regarding discrimination, we find that participants with positive attitudes towards immigration positively discriminate against asylum-seekers performing voluntary work ($\Delta\hat{\beta}^{A}_{D2} = -0.74, p = 0.045$). In contrast, individuals with negative attitudes towards immigration consistently display discrimination against both immigrant groups, except for asylum-seekers with high educational attainment ($\Delta\hat{\beta}^{A}_{D1} = 0.526, p = 0.276$). Thus, education rather than voluntary work serves as a mitigating factor in reducing discrimination for participants with negative attitudes towards immigration.

Individuals who state that they feel close to Germans might display ingroup favoritism towards Germans citizens. We, therefore, investigate whether participants who feel close or very close to Germans differ in propensities to transfer and discrimination compared to participants who state that they do not feel close to Germans. Table 6 depicts the propensity to transfer and discrimination with respect to heterogeneity in closeness to Germans. We find no differences in the distribution across treatments as indicated by a Kruskal-Wallis-Test ($\chi^2(11) = 5.172, p = 0.923$). We find that people who feel close to Germans, value voluntary work not only for economic immigrants ($\hat{\beta}^{E}_{D2} = 0.742, p = 0.024$) and asylum seekers ($\hat{\beta}^{A}_{D2} = 0.671, p = 0.018$) but also for Germans ($\hat{\beta}^{G}_{D2} = 0.826, p = 0.001$). In contrast, participants who do not feel close to Germans only value voluntary work for economic immigrants ($\hat{\beta}^{E}_{D2} = 0.861, p = 0.013$) and asylum-seekers ($\hat{\beta}^{A}_{D2} = 0.974, p = 0.012$), and negatively value high educational attainment for German recipients ($\hat{\beta}^{G}_{D1} = -0.815, p = 0.026$). This difference in treatment of German citizens is significant between both groups ($p^{G}_{D1} = 0.025; p^{G}_{D2} = 0.088$).

[15] We use the following survey items to create an index: (i) Immigrants increase the crime rate; (ii) Immigrants are generally good for the German economy; (iii) Immigrants take jobs away from people born in Germany; (iv) Germany is currently taking in too many immigrants. Participants could indicate how strongly they agree with the statements, from strongly agree (1) to strongly disagree (5), see Appendix 7.9: Questionnaire-Part 2, Question 15; The scale has a good internal consistency indicated by a value for Cronbach's Alpha of $\alpha = 0.8485$.

[16] see Appendix 7.9: Questionnaire-Part 2, Question 17

Table 6: Heterogeneity results: Attitudes toward immigration

Attitudes toward immigration

Premia

	Negative attitudes				Postive attitudes				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.504	0.327	0.256	Base	0.274	0.631*	0.533	Base	-0.778	-0.304	-0.278
		(.452)	(.442)	(.426)		(.372)	(.376)	(.39)		(.586)	(.58)	(.579)
E	2.007***	-0.399	0.793*	0.882**	-0.298	-0.279	0.464	0.738**	2.305***	-0.12	0.329	0.144
	(.446)	(.465)	(.469)	(.424)	(.359)	(.368)	(.455)	(.335)	(.573)	(.592)	(.655)	(.539)
A	1.849***	0.819*	0.760*	0.582	-0.555	-0.38	0.816*	0.164	2.404***	1.199*	-0.055	1.001
	(.463)	(.495)	(.461)	(.45)	(.433)	(.447)	(.428)	(.428)	(.634)	(.669)	(.63)	(.999)

Discrimination

	Negative attitudes				Postive attitudes				Difference			
	$\Delta\beta_T$	$\Delta\beta_{D_1}$	$\Delta\beta_{D_2}$	$\Delta\beta_{D_1 \cap D_2}$	$\Delta\beta_T$	$\Delta\beta_{D_1}$	$\Delta\beta_{D_2}$	$\Delta\beta_{D_1 \cap D_2}$	$\Delta\beta_T$	$\Delta\beta_{D_1}$	$\Delta\beta_{D_2}$	$\Delta\beta_{D_1 \cap D_2}$
E	2.007***	1.902***	1.540***	1.380***	-0.298	0.255	-0.131	-0.502	2.305***	1.646***	1.671**	1.883***
	(.446)	(.469)	(.467)	(.404)	(.359)	(.379)	(.469)	(.368)	(.573)	(.603)	(.661)	(.548)
A	1.849***	0.526	1.416***	1.522***	-0.555	0.1	-0.740**	-0.185	2.404***	0.426	2.155***	1.708***
	(.463)	(.483)	(.441)	(.408)	(.433)	(.386)	(.369)	(.382)	(.634)	(.619)	(.574)	(.56)

Closeness to Germans

Premia

	Undecided/distant/very distant				Close/very close				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.815**	0.047	0.507	Base	0.193	0.826***	0.455*	Base	-1.008**	-0.779*	.052
		(.366)	(.382)	(.401)		(.258)	(.249)	(.27)		(.448)	(.456)	(.483)
E	0.677*	-0.222	0.861**	0.941***	0.820***	0.331	0.742**	0.706**	-0.142	-0.553	0.119	0.235
	(.356)	(.365)	(.348)	(.364)	(.28)	(.294)	(.329)	(.278)	(.453)	(.468)	(.478)	(.458)
A	0.495	0.304	0.974**	0.215	0.480*	0.335	0.671**	0.637**	0.015	-0.031	0.303	-0.208
	(.395)	(.381)	(.389)	(.392)	(.272)	(.288)	(.283)	(.281)	(.481)	(.478)	(.482)	(.834)

Discrimination

	Undecided/distant/very distant				Close/very close				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.677*	0.085	-0.137	0.243	0.820***	0.682**	0.903***	0.569**	-0.142	-0.597	-1.040**	-0.325
	(.356)	(.374)	(.372)	(.408)	(.28)	(.273)	(.304)	(.267)	(.453)	(.463)	(.481)	(.487)
A	0.495	-0.624*	-0.433	0.787**	0.480*	0.338	0.634**	0.298	0.015	-0.962**	-1.067**	0.49
	(.395)	(.349)	(.375)	(.399)	(.272)	(.275)	(.261)	(.281)	(.481)	(.445)	(.456)	(.49)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\beta_{D_1 \cap D_2}$ = Both desirable characteristics.
Control variables comprise income, age, gender, education, and region.
Attitudes toward immigration measured by an index using the following questions: (i) Immigrants increase the crime rate; (ii) Immigrants are generally good for the German economy; (iii) Immigrants take jobs away from people born in Germany; (iv) Germany is currently taking in too many immigrants. Answers were given using a 5-point Likert scale from (1) strongly agree to (5) strongly disagree.
Closeness to Germans is measured using a 5-point Likert scale from 1=very close to 5=very distant.
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

Regarding discrimination, participants feeling close to Germans exhibit significant baseline discrimination, particularly against economic immigrants ($\Delta\hat{\beta}_T^E = 0.820, p = 0.003$), and do not react to the information, except for high education for asylum seekers ($\Delta\hat{\beta}_{D1}^A = 0.338, p = 0.220$).

Contact with immigrants Contact hypothesis states that intergroup contact typically reduces prejudices (e.g. Pettigrew and Tropp, 2006). In line with this hypothesis, we conjecture that participants who are regularly in contact with immigrants show a higher propensity to transfer and lower discrimination against

immigrants. In order to test this, we distinguish by contact intensity (Daily/Several times a week vs. never) with immigrants in our analysis.[17] The results are depicted in Table 7. A Kruskal-Wallis-Test ($\chi^2(11) = 6.146, p = 0.8634$) indicates that there is no difference in the distribution across treatments.

In line with the contact hypothesis, we find that frequent contact with immigrants positively affects the propensity to transfer and reduces discrimination. In particular, participants with regular contact to immigrants significantly value voluntary work for both economic immigrants ($\hat{\beta}^E_{D2} = 1.845, p < 0.001$) and asylum-seekers ($\hat{\beta}^A_{D2} = 1.083, p = 0.010$). Regarding discrimination, we find baseline discrimination against economic immigrants ($\Delta\hat{\beta}^E_T = p = 0.012$) for participants with frequent contact, which disappears when information on desirable characteristics is provided. Participants with no contact to immigrants also show significant baseline discrimination for both immigrant groups ($\Delta\hat{\beta}^E_T = 0.938, p = 0.040$, $\Delta\hat{\beta}^A_T = 1.173, p = 0.008$). Interestingly, providing information on educational attainment reduces discrimination for both immigrant groups and, while information on voluntary work only reduces discrimination against asylum-seekers. For the remaining combinations discrimination remains significant ($\Delta\hat{\beta}^E_{D2} = 1.046, p = 0.005$; $\Delta\hat{\beta}^E_{D_1 \cap D_2} = 0.962, p = 0.034$; $\Delta\hat{\beta}^A_{D_1 \cap D_2} = 0.965, p = 0.039$).

Table 7: Heterogeneity results: Contact with migrants

Contact with migrants

Premia

	Daily/Several times a week				Never				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.194	0.132	0.567	Base	-0.312	0.246	0.366	Base	0.118	-0.115	0.201
		(.469)	(.594)	(.449)		(.409)	(.369)	(.454)		(.622)	(.7)	(.638)
E	1.147**	0.693	1.845***	1.344***	0.938**	-0.052	0.138	0.341	0.209	0.745	1.707**	1.003
	(.458)	(.457)	(.522)	(.444)	(.456)	(.492)	(.455)	(.456)	(.645)	(.671)	(.692)	(.636)
A	0.039	0.097	1.083***	0.257	1.173***	0.868*	0.916*	0.573	-1.134*	-0.771	0.167	-0.06
	(.409)	(.378)	(.417)	(.407)	(.445)	(.466)	(.485)	(.457)	(.605)	(.601)	(.64)	(.936)

Discrimination

	Daily/Several times a week				Never				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	1.147**	0.26	-0.567	0.37	0.938**	0.678	1.046***	0.962**	0.209	-0.418	-1.613**	-0.593
	(.458)	(.469)	(.645)	(.435)	(.456)	(.449)	(.369)	(.454)	(.645)	(.649)	(.744)	(.629)
A	0.039	-0.252	-0.912	0.349	1.173***	-0.007	0.503	0.965**	-1.134*	-0.245	-1.415*	-0.616
	(.409)	(.441)	(.598)	(.449)	(.445)	(.433)	(.416)	(.467)	(.605)	(.618)	(.729)	(.65)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\hat{\beta}_{D_1 \cap D_2}$ = Both desirable characteristics.
Control variables comprise income, age/gender, education, and region.
Contact is measured using the following question: " How often do you meet with migrants? This means personal meetings and conversations, not just greetings. (e.g. at work or in the neighbourhood)." Participants had the following options: (i) daily, (ii) several times a week, (iii) once a week, (iv), once a month, (v) Less than once a month, (vi) never
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

[17] We use the following survey item: How often do you meet with migrants? This means personal meetings and conversations, not just greetings. (e.g. at work or in the neighborhood). Participants had the following options: (i) daily, (ii) several times a week, (iii) once a week, (iv), once a month, (v) Less than once a month, (vi) never (see Appendix: Questionnaire-Part 2, Question 11).

Voluntary work To explain the substantial premiums for voluntary work, we explore whether engaging in voluntary work is perceived as an ingroup signal for others engaged in similar activities. To this end, we differentiate responses based on participants' own involvement in voluntary work. A Kruskal-Wallis Test ($\chi^2(11) = 13.553, p = 0.259$) reveals that there is no difference in the distribution across treatments. In general, we find that voluntary work is significantly rewarded by participants who perform voluntary work ($\hat{\beta}^G_{D2} = 0.905, p = 0.003; \hat{\beta}^E_{D2} = 1.12, p = 0.012; \hat{\beta}^A_{D2} = 0.898, p = 0.006$) and by participants who do not perform voluntary work ($\hat{\beta}^E_{D2} = 0.634, p = 0.034; \hat{\beta}^A_{D2} = 0.735, p = 0.019$). However, this only translates into a reduction of discrimination for participants not engaged in voluntary work for both immigrant groups and for economic immigrants in the case of participants who actively engage in voluntary work. Furthermore, participants actively engaging in voluntary work exhibit discrimination, particularly against economic immigrants with high educational attainment ($\Delta\hat{\beta}^E_{D1} = 1.346, p < 0.001$), as well as asylum seekers performing voluntary work ($\Delta\hat{\beta}^A_{D2} = 0.657, p = 0.037$). This might be due to a high premium for voluntary work in case of German recipients.

Table 8: Heterogeneity results: Voluntary work

Voluntary Work

Premia

	No voluntary work				Voluntary work				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.328	0.398	0.680**	Base	0.178	0.905***	0.247	Base	-0.506	-0.507	0.432
		(.298)	(.284)	(.313)		(.262)	(.303)	(.311)		(.396)	(.416)	(.442)
E	0.707**	0.372	0.634**	0.660**	0.805**	-0.362	1.120**	0.946**	-0.098	0.734	-0.486	-0.286
	(.286)	(.27)	(.299)	(.277)	(.38)	(.447)	(.447)	(.399)	(.476)	(.522)	(.538)	(.486)
A	0.404	0.285	0.735**	0.573*	0.650**	0.482	0.898***	0.471	-0.246	-0.197	-0.163	0.102
	(.311)	(.319)	(.314)	(.314)	(.315)	(.32)	(.325)	(.333)	(.444)	(.453)	(.451)	(.457)

Discrimination

	No voluntary work				Voluntary work				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.707**	0.008	0.471	0.727**	0.805**	1.346***	0.59	0.107	-0.098	-1.338***	-0.119	0.62
	(.286)	(.284)	(.298)	(.305)	(.38)	(.354)	(.382)	(.335)	(.476)	(.454)	(.485)	(.454)
A	0.404	-0.209	0.067	0.51	0.650**	0.346	0.657**	0.426	-0.246	-0.555	-0.59	0.084
	(.311)	(.307)	(.287)	(.318)	(.315)	(.271)	(.315)	(.331)	(.444)	(.409)	(.426)	(.459)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\hat{\beta}_{D_1 \cap D_2}$ = Both desirable characteristics.
Control variables comprise income, age/gender, education, and region.
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

5.3.2 Regional heterogeneity of immigrant shares

Studies show that the support for redistribution among natives is negatively correlated with the proportion of immigrants in their region (e.g. Dahlberg et al., 2012; Alesina et al., 1999), particularly among center or right-wing respondents (Alesina et al., 2019). To test whether regional immigrant shares affect the propensity of transfers and discrimination in our sample, we first analyse the effect of the actual regional share of immigrants and asylum-seekers in the year in which the experiment was conducted and then we use the growth rate of the respective shares between 2013

and 2018 to analyse long-term effects. To this end, we match census data on regional shares of immigrants and asylum-seekers provided by the Federal Statistical Office of Germany (Destatis, 2023)[18] with the postal code of our participants. In our analysis, we compare the lowest and the highest quartile of shares and growth rates.[19] The results are summarized in Table 9.

Regional share of immigrants and asylum-seekers Overall, we only find weak effects of the differences in regional immigration shares on the propensity to transfer. Regarding discrimination, however, participants living within regions with low immigrant shares ($< 9.2\%$) show more baseline discrimination against economic immigrants ($\Delta\hat{\beta}_T^E = 1.122, p = 0.013$). Additionally, they discriminate against economic immigrants with high education ($\Delta\hat{\beta}_{D1}^E = 1.051, p = 0.012$) and asylum-seekers performing voluntary work ($\Delta\hat{\beta}_{D2}^A = 0.864, p = 0.041$). A low share of asylum seekers within the region ($< 1.7\%$) corresponds to higher premia for voluntary work and both characteristics for economic immigrants ($\hat{\beta}_{D2}^E = 1.463, p = 0.008; \hat{\beta}_{D_1 \cap D_2}^E = 1.472, p = 0.004$). However, at baseline, participants from regions with a low share of asylum seekers exhibit discrimination against economic immigrants ($\Delta\hat{\beta}_T^E = 1.055, p = 0.024$), marginally against economic immigrants with higher education ($\Delta\hat{\beta}_{D1}^E = 0.841, p = 0.075$), and against asylum seekers performing voluntary work ($\Delta\hat{\beta}_{D2}^A = 0.949, p = 0.029$).

Table 9: Heterogeneity results: Regional Immigration and asylum shares and growth rates

Regional immigration share

Premia

	Low (< 9.2 percent)				High (> 18.4percent)				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.001	0.383	0.391	Base	-0.448	0.863*	0.871*	Base	0.448	-0.48	-0.481
		(.384)	(.382)	(.57)		(.444)	(.453)	(.484)		(.584)	(.593)	(.748)
E	1.122**	0.07	0.945*	1.156**	0.22	-0.14	0.546	0.68	0.902	0.21	0.399	0.476
	(.45)	(.481)	(.493)	(.457)	(.444)	(.466)	(.515)	(.477)	(.631)	(.671)	(.713)	(.66)
A	0.621	0.257	0.139	0.215	0.119	0.388	0.849*	0.627	0.501	-0.131	-0.71	-0.197
	(.451)	(.464)	(.485)	(.507)	(.461)	(.503)	(.47)	(.465)	(.645)	(.685)	(.678)	(1.115)

Discrimination

	Low (< 9.2 percent)				High (> 18.4 percent)				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	1.122**	1.051**	0.559	0.357	0.22	-0.089	0.536	0.411	0.902	1.140*	0.023	-0.055
	(.45)	(.417)	(.427)	(.574)	(.444)	(.464)	(.523)	(.517)	(.631)	(.624)	(.678)	(.772)
A	0.621	0.363	0.864**	0.796	0.119	-0.717	0.133	0.364	0.501	1.080*	0.732	0.433
	(.451)	(.396)	(.422)	(.614)	(.461)	(.49)	(.465)	(.492)	(.645)	(.629)	(.63)	(.788)

Regional asylum share

[18] In particular, we use the statistics on foreigners ("Ausländerstatistik"), on the complete population ("Bevölkerungsstand Statistik"), and persons seeking protection ("Statistik über Schutzsuchende").

[19] A Kruskal-Wallis-Test confirms an even distribution across treatments (Asylum share $\chi^2(11) = 5.584, p = 0.9$, Growth immigration share $\chi^2(11) = 12.093, p = 0.357$, Growth Asylum share $\chi^2(11) = 12.571, p = 0.322$), except for the share of immigrants within a region ($\chi^2(11) = 17.757, p = 0.088$)

Premia

	Low (< 1.7 percent)				High (> 2.8 percent)				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	0.075	0.727*	0.844*	Base	0.088	0.781*	0.498	Base	-0.013	-0.054	0.346
		(.416)	(.392)	(.491)		(.38)	(.4)	(.369)		(.564)	(.56)	(.615)
E	1.055**	0.289	1.463***	1.472***	-0.117	-0.402	0.289	-0.351	1.173*	0.691	1.174	1.823***
	(.468)	(.519)	(.554)	(.514)	(.445)	(.487)	(.476)	(.473)	(.401)	(.714)	(.731)	(.7)
A	0.462	0.286	0.241	0.59	0.062	0.464	0.485	0.363	0.401	-0.178	-0.244	0.818
	(.441)	(.452)	(.477)	(.479)	(.433)	(.452)	(.458)	(.462)	(.619)	(.641)	(.66)	(1.066)

Discrimination

	Low (< 1.7 percent)				High (> 2.8 percent)				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	1.055**	0.841*	0.32	0.427	-0.117	0.372	0.375	0.732*	1.173*	0.469	-0.055	-0.305
	(.468)	(.472)	(.491)	(.536)	(.445)	(.425)	(.435)	(.401)	(.647)	(.638)	(.657)	(.671)
A	0.462	0.252	0.949**	0.716	0.062	-0.315	0.357	0.197	0.401	0.566	0.591	0.519
	(.441)	(.427)	(.435)	(.525)	(.433)	(.402)	(.429)	(.405)	(.619)	(.587)	(.611)	(.663)

Regional immigration share growth rate

Premia

	Low (< 22.4 percent)				High (> 37.8 percent)				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.61	0.411	0.376	Base	-0.002	0.278	0.343	Base	-0.608	0.133	0.033
		(.433)	(.384)	(.385)		(.377)	(.44)	(.492)		(.574)	(.585)	(.625)
E	0.625*	-0.003	0.317	0.578	0.995**	-0.15	0.942*	0.654	-0.371	0.146	-0.625	-0.076
	(.378)	(.435)	(.458)	(.439)	(.43)	(.453)	(.494)	(.449)	(.573)	(.629)	(.674)	(.627)
A	0.599	0.178	1.170***	0.526	0.528	0.428	0.189	0.143	0.071	-0.25	0.981	0.909
	(.412)	(.521)	(.449)	(.447)	(.484)	(.501)	(.495)	(.546)	(.636)	(.722)	(.668)	(1.047)

Discrimination

	Low (< 22.4 percent)				High (> 37.8 percent)				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.625*	0.018	0.718	0.422	0.995**	1.143***	0.331	0.684	-0.371	-1.125*	0.387	-0.261
	(.378)	(.483)	(.463)	(.444)	(.43)	(.404)	(.503)	(.51)	(.573)	(.631)	(.687)	(.677)
A	0.599	-0.189	-0.16	0.449	0.528	0.098	0.617	0.728	0.071	-0.287	-0.777	-0.279
	(.412)	(.537)	(.425)	(.423)	(.484)	(.401)	(.454)	(.554)	(.636)	(.671)	(.624)	(.696)

Regional asylum share growth rate

Premia

	Low (< 59.3 percent)				High (> 71.3 percent)				Difference			
	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$	$\hat{\beta}_T$	$\hat{\beta}_{D1}$	$\hat{\beta}_{D2}$	$\hat{\beta}_{D_1 \cap D_2}$
G	Base	-0.609	0.710*	0.715	Base	-0.127	0.344	0.305	Base	-0.482	0.366	0.41
		(.442)	(.408)	(.459)		(.363)	(.35)	(.415)		(.571)	(.539)	(.62)
E	0.51	0.076	0.665	0.900*	0.893**	-0.22	0.594	1.132**	-0.383	0.296	0.071	-0.232
	(.423)	(.439)	(.445)	(.459)	(.441)	(.495)	(.501)	(.483)	(.611)	(.661)	(.668)	(.667)
A	0.243	0.218	0.643	0.397	1.101**	0.774*	0.921**	1.180**	-0.858	-0.556	-0.277	-0.385
	(.416)	(.422)	(.486)	(.411)	(.435)	(.443)	(.461)	(.525)	(.604)	(.614)	(.671)	(.98)

Discrimination

	Low (< 59.3 percent)				High (> 71.3 percent)				Difference			
	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$	$\Delta\hat{\beta}_T$	$\Delta\hat{\beta}_{D_1}$	$\Delta\hat{\beta}_{D_2}$	$\Delta\hat{\beta}_{D_1 \cap D_2}$
E	0.51	-0.174	0.555	0.324	0.893**	0.987**	0.643	0.066	-0.383	-1.161*	-0.088	0.259
	(.423)	(.458)	(.43)	(.494)	(.441)	(.426)	(.421)	(.457)	(.611)	(.625)	(.602)	(.673)
A	0.243	-0.584	0.309	0.561	1.101**	0.2	0.524	0.226	-0.858	-0.784	-0.215	0.334
	(.416)	(.449)	(.481)	(.456)	(.435)	(.372)	(.381)	(.508)	(.604)	(.584)	(.615)	(.682)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work,$\hat{\beta}_{D_1 \cap D_2}$ = Both desirable characteristics.
Control variables comprise income, age, gender, education, and region.
Calculations for immigration and asylum shares are based on census data on regional shares of immigrants and asylum-seekers provided by the Federal Statistical Office of Germany (Destatis, 2023) (Statistics on foreigners ("Ausländerstatistik"), complete population ("Bevölkerungsstand Statistik"), and persons seeking protection ("Statistik über Schutzsuchende")).
Differences are tested using Lincom tests. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

Growth rates regional immigration and asylum-seeker share Low regional immigration growth rates ($< 22.4\%$) result in a positive premium for voluntary work in case of asylum-seekers ($\hat{\beta}^A_{D2} = 1.170, p = 0.009$). High regional asylum-seeker growth rates ($> 71.3\%$) result in a positive premium for asylum seeker having high educational attainment ($\hat{\beta}^A_{D1} = 0.774, p = 0.081$), performing voluntary work ($\hat{\beta}^A_{D2} = 0.921, p = 0.046$), and for immigrants having both desirable characteristics ($\hat{\beta}^E_{D_1 \cap D_2} = 1.132, p = 0.019, \hat{\beta}^A_{D_1 \cap D_2} = 1.180, p = 0.025$). More interestingly, participants living in regions with high regional immigration growth rates show significant baseline discrimination against economic immigrants ($\Delta\hat{\beta}^E_T = 0.995, p = 0.021$) which and increases when economic immigrants have high educational attainment ($\Delta\hat{\beta}^E_{D1} = 1.143, p = 0.005$). Similarly, high regional asylum-seeker growth rates lead to significant baseline discrimination against both immigrant groups($\Delta\hat{\beta}^E_T = 0.893, p = 0.043$, $\Delta\hat{\beta}^A_T = 1.101, p = 0.011$), and increases for economic immigrants with high educational attainment ($\Delta\hat{\beta}^E_{D1} = 0.987, p = 0.021$).

5.4 Efficiency concerns

The main analysis was conducted with the first redistribution decision only, corresponding to a one-to-one transfer. In this section, we examine whether the results are robust to the inclusion of all decisions with varying efficiency factors and whether efficiency concerns have an impact on transfers. Table 17 column (2) presents the results for our main regression including all three decisions controlling for efficiency factors. Overall, we find that an increased efficiency ($\delta = 2$), i.e., all transfers are doubled, significantly reduces transfers across all treatments, while a reduction in efficiency ($\delta = 0.5$) does not affect transfers significantly. Generally, our results are robust to changes in efficiency of transfers. There are no substantially changes in effect sizes or changes in the direction of effects, neither in the main regression nor in the estimation of our utility parameters. Regarding the significance levels, we find some variations. In particular, we find significantly smaller transfers to asylum-seekers compared to economic immigrants when no desirable characteristic is present ($\hat{\beta}^E_T < \hat{\beta}^A_T$). High educational attainment has a marginally significant negative effect on transfers to German recipients, whereas the effect is significantly larger and positive for asylum-seekers ($\hat{\beta}^G_{D_1} < 0 < \hat{\beta}^A_{D_1}$). Asylum-seekers still receive significantly less when holding both desirable characteristics. This holds also in comparison with German recipients and economic immigrants holding both desirable characteristics.

Table 10: Estimation of utility functions parameters with efficiency parameters

	β_T	β_{D_1}	β_{D_2}	$\beta_{D_1 \cup D_2}$	$\beta_{D_1 vs. \beta_{D_2}}$
German (G)	BASE	-0.212*	0.526***	-.02	-0.738***
		(.126)	(.126)	(.183)	(.13)
Economic immigrant (E)	-0.827***	.138	0.851***	-.21	-0.713***
	(.131)	(.138)	(.146)	(.195)	(.145)
Asylum-seeker (A)	-0.548***	0.379***	0.794***	-0.702***	-0.415***
	(.132)	(.136)	(.135)	(.187)	(.13)
Economic immigrant vs. Asylum-seeker	-0.278**	-.241	.057	0.492*	
	(.14)	(.194)	(.198)	(.27)	
German vs. Economic immigrant		-0.350*	-0.325*	.189	
		(.187)	(.193)	(.267)	
German vs. Asylum-seeker		-0.591***	-.268	0.682***	
		(.186)	(.185)	(.262)	

Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work, $\beta_{D_1 \cap D_2}$ = Both desirable characteristics. Control variables are the efficiency parameter, age, gender, income, education and region. See Table 17 in the Appendix for the underlying regression. The results of Lincom tests on equality of coefficients are reported at the bottom of the table. $*$ for $p < 0.10$, $**$ for $p < 0.05$,$***$ for $p < 0.01$.

Table 11 shows our results for discrimination using all decisions and controlling for efficiency parameters. Again, we find no changes in effect sizes and direction of effects. However, in contrast to our main results, we find significant discrimination economic immigrants irrespective of their characteristics and significant discrimination for asylum-seekers when holding no desirable characteristic, when they perform voluntary work, or hold both desirable characteristics. Only for high educational attainment, discrimination is reduced and remains statistically insignificant for asylum-seekers.

Table 11: Estimation of discrimination towards Economic Migrants and Asylum Seekers with respect to German Citizens with efficiency paramters

	Discrimination			
	$\beta_T^G - \beta_T^k$	$\beta_{D_1}^G - \beta_{D_1}^k$	$\beta_{D_2}^G - \beta_{D_2}^k$	$\beta_{D_1 \cap D_2}^G - \beta_{D_1 \cap D_2}^k$
Economic immigrant (E)	0.827***	0.477***	0.501***	0.341***
	(.131)	(.133)	(.141)	(.13)
Asylum seeker (A)	0.548***	-.043	0.280**	0.371***
	(.132)	(.13)	(.13)	(.132)

5.5 Potential motives

5.5.1 Attitudes towards voluntary work and education

Participants in our experiment particularly value voluntary work compared to high educational attainment. These revealed preferences are confirmed by our survey questions regarding the subjective evaluation of voluntary work and high educational attainment. On a five-point Likert-Scale ranging from strongly disagree (1) to strongly agree (5), participants stated their attitudes towards persons performing voluntary work and to persons with high educational attainment. The results of

these stated attitudes are presented in Table 12. In general, people agree that

Table 12: Attitudes towards performing voluntary work and high education

	Voluntary work	Education	Differenz	P-value
A person who does voluntary work can be trusted in principle./ A person with a high level of education can generally be trusted.	3.19	2.45	0.73	< 0.001
A person who does voluntary work is an asset to society./ A person with a high level of education is an enrichment for society.	4.27	3.61	0.66	< 0.001
I find a person who does voluntary work more likable than one who is uninvolved./ A person with a high education level is more likable than a person with a low level of education.	2.98	2.69	0.29	< 0.001
The state benefits from people who do voluntary work/with a high level of education.	4.51	3.96	0.56	< 0.001
A person who does voluntary work/with a high level of education deserves to be supported.	3.82	2.92	0.9	< 0.001
A person who does voluntary work/with a high level of education is less motivated in his or her working life.	1.92	2.15	-0.23	< 0.001

people who perform voluntary work can generally be trusted, are more of an asset to society, and deserve more to be supported than people with higher education. Additionally, participants think that the state benefits more from people performing voluntary work than from people with high educational attainment. Comparing people performing voluntary work with people performing no voluntary work, our participants are indifferent (state in the mean: 3=Undecided) who is more likable. They disagree in general that a person who does voluntary work is less motivated in his or her working life. The same holds for people with high education, although the level of disagreement is a little bit lower.

We investigate whether positive/negative attitudes toward voluntary work and education also translate into different redistributive preferences in our experiment. We create an index out of the 9 questions related to voluntary work, and 7 questions related to education and separate them at the median. [20] Figure 8 and Figure 9 in the

[20]Besides the six questions stated in Table 12 we also asked the following for voluntary work: A person who does voluntary work only wants to present himself*; A person who does voluntary work is admirable; From a person who does voluntary work, I rather expect him/her to help me if I need

Appendix depict our results for the premia. We find that attitudes toward voluntary work matter for decisions in our experiment while attitudes toward education do not. Participants who have positive attitudes toward voluntary work have a positive premia for voluntary work across all three recipient groups compared to individuals with more negative views on voluntary work. The difference is significant for German recipients ($p = 0.005$) and Economic migrants ($p = 0.026$). Individuals who have positive attitudes toward education do not have a significant positive premia for education for any recipient groups and there are no significant differences between participants having positive or negative attitudes toward education.
In the last step, we investigate whether there are general subgroup differences in the attitudes toward education or voluntary work. Table 18 gives our results by gender, age, income, education, voting, and performing voluntary work. We find no gender effects and differences by income. However, younger participants have more positive attitudes toward education than older (> 59 years) participants, while the latter have more positive attitudes toward voluntary work. Highly educated participants have more positive attitudes toward education than lower-educated participants. Overall, left/middle-wing voters have more positive views on voluntary work and education than right-wing voters, and individuals who perform voluntary work themselves have more positive vies on voluntary work and also on education than individuals who do not perform voluntary work.

5.5.2 Subjective evaluation of neediness

In our experimental data, we find that *allocators* transfer more and discriminate less against asylum-seekers compared to economic migrants. We interpreted this result as a sensitivity to neediness with asylum-seekers having arguably gone through greater hardship than economic immigrants. This interpretation is supported by our survey questions on deserving of financial support. In particular, we asked our participants to state their opinion on a five-point Likert-Scale ranging from strongly disagree (1) to strongly agree (5) whether refugees who have been granted asylum, asylum-seekers, and economic immigrants should be financially supported for subsistence and for integration. We find a clear and expected hierarchy in the subjective evaluation of entitlement, i.e., participants regard refugees who have been granted asylum as more deserving than asylum-seekers, and asylum-seekers as more deserving than economic immigrants. Additionally, financial support for integration receives more support across all groups of immigrants. The survey items correlate with the behavior in our experimental setting. Discrimination by subjective evaluation of neediness is depicted in Figure 10 for Asylum seeker and Figure 11. Generally, people disliking support for refugees, asylum seekers, and economic migrants also discriminate more at baseline, and when migrants perform voluntary work or hold both desirable characteristics.

help. And for education: A person with a high level of education is often more arrogant than a person with a low level of education.*; * were reversely recoded.

Table 13: Survey results: Perception of deserving support by migrant groups

	Refugees	Asylum seekers	Economic migrants	P-value
... should receive financial support from the German state to secure their livelihood.	3.35	2.85	2.17	< 0.001
... should receive financial support for integration .	3.89	3.28	2.54	< 0.001

Note: Refugees: People who have been granted asylum in Germany, Asylum seekers: Asylum seekers who have not yet been granted asylum in Germany; Economic migrants: Migrants who came to Germany for economic reasons and have no right to asylum; P-value: T-Tests between all group pairs

5.5.3 Perception of immigrant groups

Since our categories of the residency status -asylum-seeker, economic immigrant- leaves space for interpretation, we asked our participants to state on a five-point Likert-Scale ranging from strongly disagree (1) to strongly agree (5) which group they associate with the respective residency status. Specifically, we ask whether participants believe that asylum-seekers are mainly persons who are politically persecuted and therefore entitled to asylum or whether they come to Germany just for economic reasons. Further, we asked whether participants believe that economic immigrants are mainly European or non-European citizens. Overall, we find that our participants believe that asylum-seekers have come to Germany mostly for economic reasons and that economic immigrants are mostly non-European citizens. Again, the survey items correlate with the behavior in our experimental setting. Discrimination by the perception of immigrant groups is depicted in Figure 10 for Asylum seeker and Figure 11. Generally, people who do not think that people who apply for asylum in Germany are mainly politically persecuted people who have a right to asylum, but who think these are mainly people who come to Germany for economic reasons and have no right to asylum discriminate more across all treatments. The same holds true for individuals who think that immigrants who come to Germany for economic reasons are mainly citizens of non-European countries.

Table 14: Survey results: Assumptions about migrants

	All
People who apply for asylum in Germany are mainly politically persecuted people who have a right to asylum.	2.96
People who apply for asylum in Germany are mainly people who come to Germany for economic reasons and have no right to asylum.	3.22
Migrants who come to Germany for economic reasons are mainly citizens of other European countries.	2.78
Migrants who come to Germany for economic reasons are mainly citizens of non- European countries.	3.48

6 Conclusion

In this study, we experimentally investigate preferences for redistribution of German citizens and show that information about the recipient's characteristics mitigates the propensity to redistribute and discrimination against foreigners. In a large-scale experiment, we systematically vary the (i) residency status (German citizen, asylum seeker, economic immigrant), (ii) educational attainment (no degree, University degree), and (iii) engagement in voluntary work of a recipient in a third-person redistribution game. The game was implemented as a vignette study in which a German citizen from the general population decided how much to redistribute from a median German to a recipient whose characteristics varied on the three dimensions. Our design enables us to shed further light on redistribution in the context of ethnic diversity by particularly investigating the propensity to reward desirable characteristics, i.e., high education and engagement in voluntary work, as proxies for labor market potential and contribution to society.

The insights from our study are fourfold. First, we find significant baseline discrimination, i.e., allocators transfer significantly more to German citizens than to asylum seekers and economic immigrants when no desirable characteristics are present. This result confirms findings of prior literature highlighting ingroup favoritism or group loyalty effects and discrimination (e.g., Balliet et al., 2014; Romano et al., 2017, 2021). In particular, we find that transfers are lower for economic immigrants than for asylum seekers across all treatments, supporting the idea that asylum seekers are perceived as more deserving of a transfer because of their greater need (Konow, 2003; Traub et al., 2023).

Second, the propensity to redistribute varies significantly across experimental conditions. Specifically, we observe significant premia for holding desirable characteristics. While having a university degree does not affect redistribution on average, engagement in voluntary work is rewarded with a significant positive transfer premium. This effect persists across all recipient groups. However, holding both desirable characteristics does not lead to an extra premium and even significantly reduces the transfer premiums to asylum seekers. It might be that recipients with both desirable

characteristics are considered less deserving since they have more earning potential. Third, we observe qualitatively larger premia for foreigner holding desirable characteristics compared to German citizens holding the same characteristics. The difference is only marginally significant for asylum seekers holding a university degree. Remarkably, we find that discrimination is reduced to zero for asylum seekers holding one of the desirable characteristics. Surprisingly, having both desirable characteristics does not reduce discrimination. In contrast, discrimination against economic immigrants persists even when holding one or both desirable characteristics. This could also be explained by concerns about the potentially higher needs of asylum seekers.
Fourth, we find significant heterogeneity with respect to individual-specific characteristics of the allocators, leading to different levels of discrimination and premia for holding desirable characteristics. We find that providing the allocators with the information that the recipient performs voluntary work generally leads to a higher propensity to reward for all groups (Germans, asylum seekers, economic migrants), however, the strength of the effects depends on the allocator's characteristics. The propensity to reward education is in most cases insignificant and can be even negative for e.g. workers working in unskilled jobs. Although voluntary work often brings about a significant positive transfer premium, the information does also leads to larger discrimination as participants often reward German recipients similar or even more than foreign recipients. This holds especially for right-wing voters. Discrimination can most often only be reduced by providing information about higher education, particularly in the case of asylum seekers. This result holds even for right-wing voters and participants with negative attitudes toward immigration.
Our findings have important political implications. As redistribution preferences seem to react strongly to the information on the recipients' engagement in voluntary work, highlighting that people contribute to society could lead to a larger support for redistribution in general. Additionally, since attitudes towards immigrants react to information provided and are therefore not purely taste-based, communication of information and characteristics of immigrants is crucial for their acceptance.

Assuming that immigrants generally want to contribute to their host society and that there is a general willingness to support them, immigrants should be given the opportunity to contribute to society early after their arrival. The willingness to contribute could be convincingly signaled through voluntary work. Therefore, fostering and communicating such voluntary activities seems to be an effective policy measure to increase immigrants' acceptance. Additionally, voluntary activities might be organized at much lower costs than "upskilling". Hence, acceptance of immigrants seems malleable to an activity that is rather easy to implement. Further, the importance of social engagement supports the idea of Adida et al. (2014), who find that attitudes towards immigrants are sensitive to the immigrant's degree of integration into the community.

Overall, our study contributes to a deeper understanding of the multifaceted nature of attitudes towards immigrants and redistribution. It provides valuable insights into the interplay of perceptions, preferences, and economic factors in shaping these attitudes, especially highlighting the importance of social engagement. As societies continue to grapple with the challenges and opportunities presented by immigration, understanding these dynamics can inform more effective policies and

interventions aimed at promoting inclusivity and reducing discrimination.

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7 Appendix A

7.1 Descriptive Statistics

Table 15 shows the basic descriptive statistics of our data set and the summary statistics across treatment groups. Our sample is nearly gender-balanced (49 percent men) with a mean age of 48.94 years. 16 percent of respondents live in the eastern parts of Germany, 42 percent in the north-western parts of Germany and 42 percent in the south-western parts of Germany. Regarding income, the sample distribution is skewed towards high income with 18 percent having low income (< 1300), 19 percent low medium income (1301-2000 Euros), 33 percent medium income (2001-3200 Euros) and 30 percent have a high income (> 3200). 32 percent in our sample have low education (no education, secondary modern school qualification, secondary school certificate), 15 percent have vocational training (dual vocational education and training, professional qualification), 29 percent have high education (general higher education entrance qualification, university of applied sciences entrance qualification, master) and 24 percent very high education (University degree, doctoral degree). 58 percent in our sample are either employed subject to social insurance contributions or self-employed. The majority in our sample indicate that their political orientation is in the middle of the political spectrum, while 28 percent describe themselves as left-wing and 14 percent as right-wing. A Kruskal-Wallis Analysis of Variance was conducted to assess whether there are differences between treatment groups with regard to the descriptive variables discussed above. The treatment groups do not differ with regard to age, gender, region, income, education, or employment, but differ across political orientations. Nevertheless, it is important to control for these background variables when comparing treatment groups.

	All	1	2	3	4	5	6	7	8	9	10	11	12
Demographics													
Age	48.94	50.03	47.39	48.74	47.15	49.26	49.59	48.81	48.15	50.41	48.45	48.10	51.23
Male	0.49	0.49	0.48	0.52	0.49	0.49	0.47	0.54	0.45	0.47	0.49	0.53	0.51
Region													
East	0.16	0.19	0.12	0.18	0.15	0.13	0.14	0.13	0.19	0.15	0.15	0.17	0.22
North-West	0.42	0.37	0.43	0.33	0.43	0.50	0.39	0.46	0.41	0.45	0.46	0.36	0.43
South-West	0.42	0.44	0.45	0.50	0.42	0.38	0.47	0.41	0.39	0.40	0.40	0.46	0.35
Income													
Low	0.18	0.19	0.14	0.15	0.18	0.18	0.21	0.19	0.19	0.21	0.16	0.16	0.22
Low medium	0.19	0.24	0.24	0.21	0.18	0.17	0.18	0.18	0.18	0.15	0.14	0.17	0.19
Medium	0.33	0.29	0.33	0.37	0.29	0.38	0.32	0.35	0.31	0.35	0.38	0.36	0.29
High	0.30	0.28	0.29	0.27	0.35	0.27	0.30	0.28	0.32	0.29	0.31	0.31	0.30
Education													
Low	0.32	0.34	0.27	0.30	0.23	0.33	0.31	0.33	0.32	0.29	0.29	0.38	0.40
Vocational	0.15	0.15	0.17	0.16	0.14	0.20	0.15	0.14	0.12	0.19	0.16	0.13	0.13
High	0.29	0.31	0.29	0.33	0.31	0.21	0.26	0.34	0.28	0.29	0.30	0.27	0.27
Very high	0.24	0.20	0.27	0.20	0.31	0.27	0.28	0.19	0.28	0.24	0.24	0.22	0.21
Employment													
Employed	0.58	0.55	0.60	0.60	0.64	0.50	0.58	0.52	0.61	0.57	0.58	0.63	0.57
Political orientation													
Left	0.28	0.31	0.25	0.38	0.32	0.24	0.28	0.25	0.35	0.31	0.23	0.23	0.26
Middle	0.57	0.54	0.55	0.54	0.59	0.67	0.55	0.58	0.56	0.53	0.60	0.60	0.58
Right	0.14	0.15	0.19	0.09	0.10	0.09	0.18	0.16	0.09	0.15	0.17	0.17	0.16

Note: Low education: no education, secondary modern school qualification, secondary school certificate; Vocational: dual vocational education and training, professional qualification; High education: general higher education entrance qualification, university of applied sciences entrance qualification, master; Very high education: University degree, doctoral degree; Low income: $\leq$ 1300 Euros; Low-medium income: 1301-2000 Euros; Medium income: 001-3200 Euros; High income: $>$ 3200 Euro.

Table 15: Summary statistics

7.2 Regression results - Discrimination

Table 16: Estimation of discrimination towards Economic Migrants and Asylum Seekers with respect to German Citizens

	Discrimination			
	$\beta_T^G - \beta_T^k$	$\beta_{D_1}^G - \beta_{D_1}^k$	$\beta_{D_2}^G - \beta_{D_2}^k$	$\beta_{D_1 \cap D_2}^G - \beta_{D_1 \cap D_2}^k$
Economic immigrant (EM)	0.777***	0.436*	0.532**	0.485**
	(.222)	(.223)	(.236)	(.226)
Asylum seeker (AS)	0.502**	-.038	.28	0.471**
	(.225)	(.218)	(.216)	(.23)

Note: Tobit-Regression. Dependent variable is the amount redistributed. T = No desirable characteristics, D_1 = High education, D_2 = Engaging in voluntary work, $\beta_{D_1 \cap D_2}$ = Both desirable characteristics. Control variables comprise income, age, gender, education, and region. Standard errors are clustered at the individual level. *p<0.1; **p<0.05; ***p<0.01.

Table 17: Estimation of main regression: Amount redistrubuted

	(1)	(2)
Treatments		
German		
- no education, no voluntary work	Base	Base
- no education, voluntary work	0.562 ***	0.526***
- high education, no voluntary work	-0.196	-0.212*
- high education, voluntary work	0.475**	0.293**
Asylum seeker		
- no education, no voluntary work	-0.502**	-0.548***
- no education, voluntary work	0.282	0.246*
- high education, no voluntary work	-0.158	-0.17
- high education, voluntary work	0.003	-0.0785
Economic migrants		
- no education, no voluntary work	-0.777***	-0.827***
- no education, voluntary work	0.03	0.024
- high education, no voluntary work	-0.632***	-0.689***
- high education, voluntary work	-0.011	-0.048
Control variables		
Male	-0.393***	-0.384***
Age	-0.001	-0.001
. *Income*		
- Low income	Base	Base
- Low medium income	-0.380**	-0.321***
- Medium income	-0.345***	-0.317***
- High income	-0.350**	-0.385***
Education		
- Low education	Base	Base
- Vocational education	-0.236*	-0.226***
- High education	0.135	.199***
- Very high education	0.006	.017
Region		
- North/West	Base	Base
- East	0.026	-0.0002
- South/West	-0.035	-0.043
Efficiency		
- Case=0.5		0.095
- Case=2		-0.323 ***
Constant	2.622***	2.632***
var(e.playersend)	3.601	3.757
Obs.	1,807	5,421
Pseudo R2	0.016	0.0169
$Prob > F$	0.000	0.000

Note: Tobit-regression. Dependent variable is the amount redistributed.

7.3 Further Figures

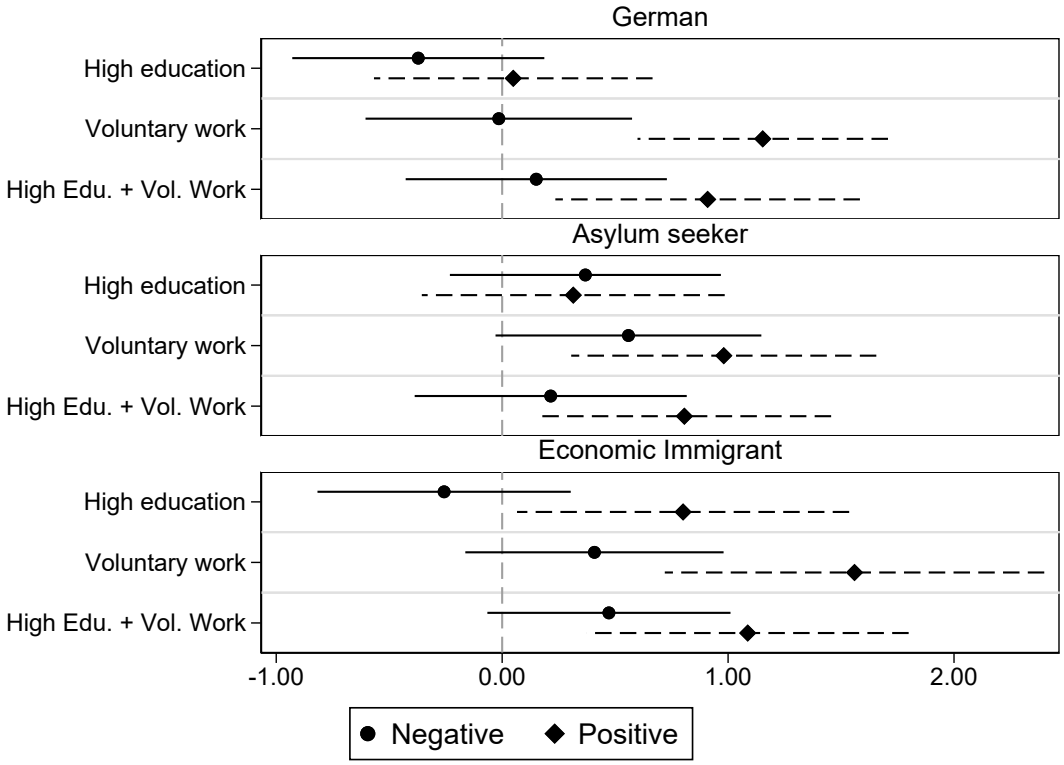

Figure 8: Premia results by attitudes towards performing voluntary work
Notes: Tobit-Regression. Dependent variable is the amount redistributed. Questions were answered on a 5-point Likert scale; Points indicate negative attitudes and diamonds positive attitudes toward voluntary work; Whiskers indicate the 95 percent confidence intervals

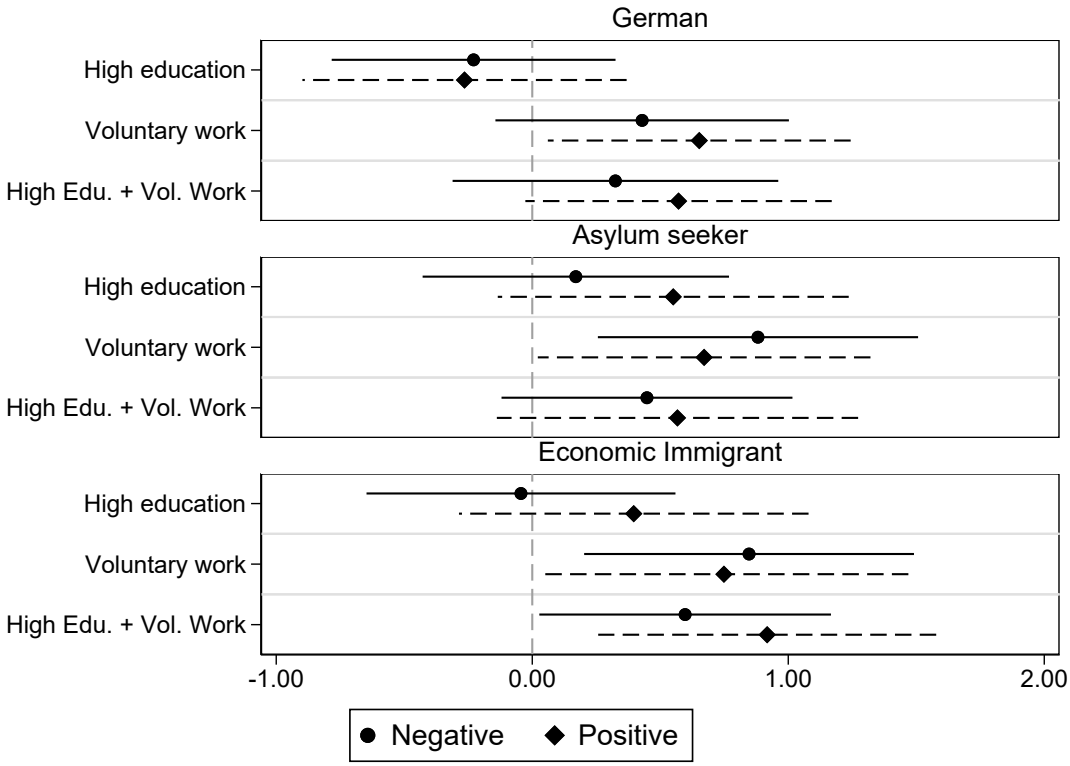

Figure 9: Premia results by attitudes towards education

Notes: Tobit-Regression. Dependent variable is the amount redistributed. Questions were answered on a 5-point Likert scale; Points indicate negative attitudes and diamonds positive attitudes toward voluntary work; Whiskers indicate the 95 percent confidence intervals

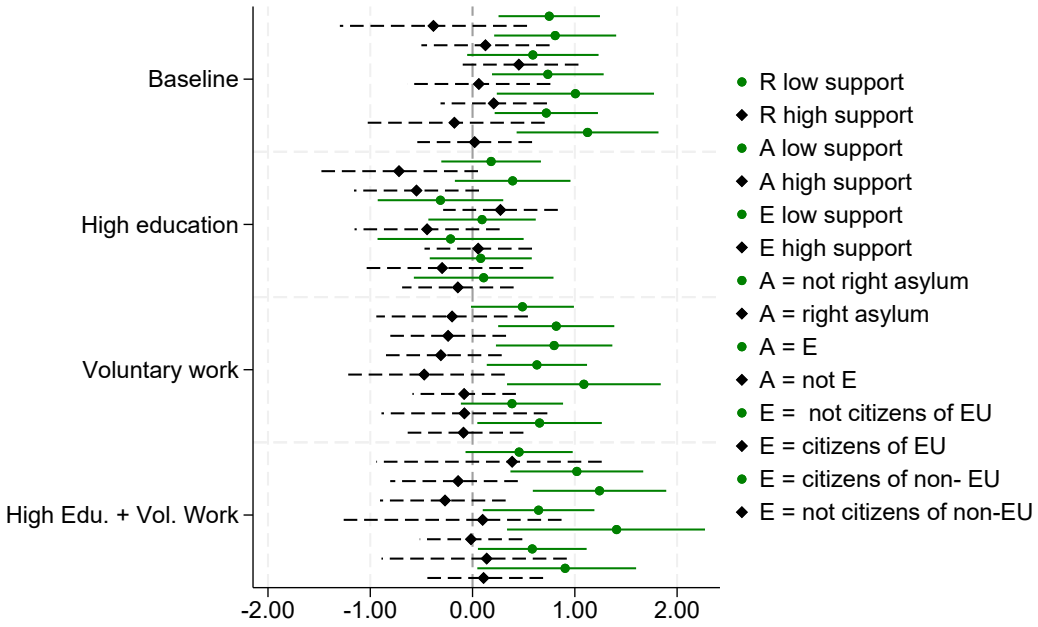

Figure 10: Discrimination against asylum seekers by subjective perception and neediness of migrants groups

Notes: Tobit-Regression. Dependent variable is the amount redistributed. R = Refugees, A = Asylum seekers, E = Economic immigrants; R low/high support based on survey question: "Refugees should receive financial support from the German state"; A low/high support based on survey question: "Asylum seekers should receive financial support from the German state"; E high/low support based on survey question:" Economic immigrants should receive financial support from the German state"; A= (not) right to asylum based on survey question: "People who apply for asylum in Germany are mainly politically persecuted people who have a right to asylum."; A = (not) E based on survey question: "People who apply for asylum in Germany are mainly people who come to Germany for economic reasons and have no right to asylum."; E = (not) citizens of EU based on survey question: "Migrants who come to Germany for economic reasons are mainly citizens of other European countries."; E = (not) citizen of non-EU based on survey question: "Migrants who come to Germany for economic reasons are mainly citizens of non- European countries."; Questions were answered on a 5-point Likert scale; Whiskers indicate the 95 percent confidence intervals

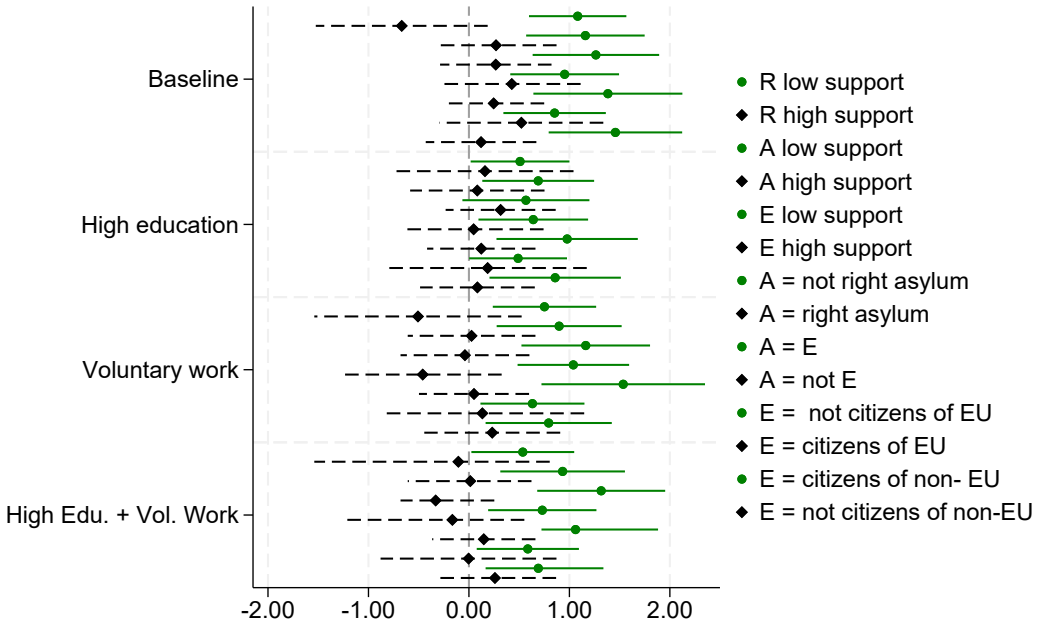

Figure 11: Discrimination against economic migrants by subjective perception and neediness of migrants groups

Notes: Tobit-Regression. Dependent variable is the amount redistributed. R = Refugees, A = Asylum seekers, E = Economic immigrants; R low/high support based on survey question: "Refugees should receive financial support from the German state"; A low/high support based on survey question: "Asylum seekers should receive financial support from the German state"; E high/low support based on survey question:" Economic immigrants should receive financial support from the German state"; A= (not) right to asylum based on survey question: "People who apply for asylum in Germany are mainly politically persecuted people who have a right to asylum."; A = (not) E based on survey question: "People who apply for asylum in Germany are mainly people who come to Germany for economic reasons and have no right to asylum."; E = (not) citizens of EU based on survey question: "Migrants who come to Germany for economic reasons are mainly citizens of other European countries."; E = (not) citizen of non-EU based on survey question: "Migrants who come to Germany for economic reasons are mainly citizens of non- European countries."; Questions were answered on a 5-point Likert scale; Whiskers indicate the 95 percent confidence intervals

7.4 Further Tables

7.5 Derivation of the optimal rule

To derive the optimal rule of redistribution we maximize the utility function:

$$U_{P3}(y_{P_1}, y_{P_2}) = \left(\alpha y_{P_1}^{\rho} + (\beta_T^k + \beta_{D_1}^k + \beta_{D_2}^k + \beta_{D_1 \cap D_2}^k) y_{P_2}^{\rho}\right)^{1/\rho} \quad k = \{G; E; A\}\,,$$

subject to the budget constraint:

$$y_{P_1} + y_{P_2}\frac{1}{\delta} = Y.$$

Hence, the Lagrangian is given by:

$$\mathcal{L} = \left(\alpha y_{P_1}^{\rho} + (\beta_T^k + \beta_{D_1}^k + \beta_{D_2}^k + \beta_{D_1 \cap D_2}^k) y_{P_2}^{\rho}\right)^{1/\rho} - \lambda(y_{P_1} + y_{P_2}\frac{1}{\delta} - Y)$$

Table 18: Attitudes towards voluntary work and education: Heterogeneity across subgroups

Gender				
	Men	Women	Diff	P-value
Voluntary work	3.742	3.733	0.009	0.710
Education	3.191	3.203	-0.012	0.582
Age				
	18-40 years	$>$ 59 years	Diff	P-value
Voluntary work	3.703	3.776	-0.073	0.012
Education	3.255	3.148	0.107	$<$ 0.001
Income				
	Low ($<$ 1300)	High ($>$ 3200)	Diff	P-value
Voluntary work	3.732	3.74	-0.008	0.819
Education	3.190	3.221	-0.031	0.324
Education				
	Low	Very high	Diff	P-value
Voluntary work	3.76	3.747	0.0136	0.656
Education	3.101	3.340	-0.239	$<$ 0.001
Voting				
	Left/Middle	Right	Diff	P-value
Voluntary work	3.778	3.497	0.281	$<$ 0.001
Education	3.213	3.098	0.115	$<$ 0.001
Voluntary work				
	No	Yes	Diff	P-value
Voluntary work	3.655	3.876	-0.221	$<$ 0.001
Education	3.166	3.248	-0.082	$<$ 0.001

yielding the following first order conditions:

$$\frac{1}{\rho}\left(\alpha y_{P_1}^{\rho}+(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho}\right)^{(1/\rho)-1}\rho\alpha y_{P_1}^{\rho-1}=\lambda 1$$

$$\frac{1}{\rho}\left(\alpha y_{P_1}^{\rho}+(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho}\right)^{(1/\rho)-1}\rho(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho-1}=\lambda\frac{1}{\delta}$$

$$y_{P_1}+y_{P_2}\frac{1}{\delta}=Y\ .$$

From the first two derivations, we can calculate the following marginal rate of substitution:

$$\frac{\frac{1}{\rho}\left(\alpha y_{P_1}^{\rho}+(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho}\right)^{(1/\rho)-1}\rho\alpha y_{P_1}^{\rho-1}}{\frac{1}{\rho}\left(\alpha y_{P_1}^{\rho}+(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho}\right)^{(1/\rho)-1}\rho(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho-1}}=\frac{1}{\frac{1}{\delta}}$$

$$\frac{\rho\alpha y_{P_1}^{\rho-1}}{\rho(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho-1}}=\frac{1}{\frac{1}{\delta}}$$

$$\alpha y_{P_1}^{\rho-1}=\delta(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)y_{P_2}^{\rho-1}$$

$$y_{P_1}=y_{P_2}\left(\frac{\delta(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}$$

Putting the latter equation into the budget constraint yields the following equation:

$$y_{P_2}\left(\frac{\delta(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}+y_{P_2}\frac{1}{\delta}=Y$$

$$y_{P_2}=\frac{Y}{\left(\left(\frac{\delta(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}+\frac{1}{\delta}\right)}$$

Substituting $y_{P_2}=t\delta$ to derive the unique optimal rule for transfers instead of income for P_2 , yields:

$$t\delta=\frac{Y}{\left(\left(\frac{\delta(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}+\frac{1}{\delta}\right)}$$

$$t=\frac{Y}{\delta\left(\delta\frac{(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}+1}$$

$$t=\frac{Y}{\delta^{\frac{\rho-1}{\rho-1}}\delta^{\frac{1}{\rho-1}}\left(\frac{(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}+1}$$

$$t^*=\frac{Y}{\delta^{\frac{\rho}{\rho-1}}\left(\frac{(\beta_T^k+\beta_{D_1}^k+\beta_{D_2}^k+\beta_{D_1\cap D_2}^k)}{\alpha}\right)^{\frac{1}{\rho-1}}+1}$$

7.6 Derivation of the econometric model specification

Our identification of the utility function parameters rests on the fact that we can unambiguously associate one parameter of the utility function to each treatment. We set $T^G_{\oslash}$ as our omitted category, whose estimation is then subsumed into the constant. We take a linear form for the function $t^* = f\left(\underset{\sim}{\beta}^i_j\right)$. It is then straightforward to derive the following relationships:

$$b^G_{D_z} = \beta^G_T + \beta^G_{D_z} - c = \beta^G_{D_z}, z = \{1, 2\}$$

The last simplification rests on: $\beta^G_T = c$. This is certainly the case when X_i is omitted in (4), and is the case up to an additional constant when X_i is not omitted. It also holds that:

$$b^G_{D_3} = \beta^G_T + \beta^G_{D_1} + \beta^G_{D_2} + \beta^G_{D_1 \cup D_2} - c = \beta^G_{D_1} + \beta^G_{D_2} + \beta^i_{D_1 \cup D_2}$$

It then follows:

$$\beta^G_{D_1 \cup D_2} = b^G_{D_3} - b^G_{D_1} - b^G_{D_2}$$

Similar relationships hold for a foreigner P_2 :

$$b^F_{D_\oslash} = \beta^F_T - c = \beta^F_T - \beta^G_T$$

Hence:

$$\beta^F_T - \beta^G_T = b^F_{D_\oslash}$$

It is not possible to identify β^F_T if not in relation to β^G_T. Moreover:

$$b^F_{D_z} = \beta^F_T + \beta^F_{D_z} - c, z = \{1, 2\}$$

which yields:

$$\beta^F_{D_z} = b^F_{D_z} - b^F_{D_\oslash}$$

Finally:

$$b^F_{D_3} = \beta^F_T + \beta^F_{D_1} + \beta^F_{D_2} + \beta^F_{D_1 \cup D_2} - c$$

This yields:

$$\beta^F_{D_1 \cup D_2} = b^F_{D_3} - b^F_{D_1} - b^F_{D_2} + b^F_T$$

We will refer to $\beta^k_{D_z}$ as the *premium* for a desirable characteristic (expressed with respect to a person of the same migratory status holding no desirable characteristic), to remark that, if positive, it causes an increase in transfer with respect to baseline.

7.7 Screens in the Experiment

The instructions of the third-party redistribution game (translated from German) were presented online to the panel members of consumer field research using Otree on the server platform Heroku. First the participants received general information about the procedure and the preservation of anonymity, followed by a short demographic questionnaire (see Appendix 7.8). Afterwards they received the instruction on the third-party redistribution game and could familiarize themselves with the entry

of their decision in a test decision. Subsequently, information about Person 1 and Person 2 were presented in form of a vignette and they received the information about the efficiency factor. After the denation decision the answered another extensive questionnaire (see Appendix 7.8).

{**Screen 1**}

Welcome to this study

This study is jointly conducted by the Helmut-Schmidt-University Hamburg, the Christian-Albrechts-University Kiel and the Friedrich-Alexander-University Erlangen-Nürnberg.

This study consists of three parts. The first part consists of a short questionnaire. In the second part we kindly ask you to take several decisions. The third part again consists of a questionnaire. The total duration of the study will be about 20 to 30 minutes.

You can earn €5 in this study by completing all tasks. During the study you will get further information, how you will receive the money. Please read all instructions carefully!

Your identity and the identity of others who participate in the study as well as your responses will be treated anonymously. We are required by law to guarantee your anonymity.

{**Screen 2**}

Part 1 of the study - Questionnaire

{**Screen 3**}

[Questionnaire - Part 1 (see Appendix 7.8)]

{**Screen 4**}

Part 2 of the study - Decisions

{**Screen 5**}

Instructions

In this second part of the study your task is to take four decisions. Afterwards follows part three containing a second questionnaire.

Your decisions affect the payoff of two other persons. In the course of the study they will be called Person 1 and Person 2.

Person 1 and Person 2 are real persons and exist in reality. In each round you receive information about Person 1 and Person 2. This information is the same for each

decision, but regard different people with the same characteristics.

All information you receive about these persons is true. Both persons do not participate in this study, but participate in another study.

At the end of the study one of your four decisions will be selected randomly and paid out accordingly.

{**Screen 6**}

Test decision

Before you take your four decisions, we want to explain the decision process in the following test decision.

{**Screen 7**}

Test decision

This is a test decision. On this page you have the possibility to get used to the entry of your decisions. The decision you make on this page is not relevant for the pay out of Person 1 and Person 2.

At the bottom of this screen you can see an example for a decision. You can decide how much money you want to transfer from Person 1 to Person 2.

Your task is it to decide, whether you want to transfer an amount between 0€and 5€from Person 1 to Person 2. Please keep in mind, that this decision will not alter your payment for the participation in this study.

Each row in the table corresponds to a split of the 5€between Person 1 and Person 2.

If you choose the first row, Person 1 keeps 5€and Person 2 has 0€.

If you choose the second row, Person 1 keeps 4€and Person 2 has 1€.

If you choose the third row, Person 1 keeps 3€and Person 2 has 2€.

If you choose the forth row, Person 1 keeps 2€and Person 2 has 3€.

If you choose the fifth row, Person 1 keeps 1€and Person 2 has 4€.

If you choose the sixth row, Person 1 keeps 0€and Person 2 has 5€.

You can make your decision by clicking with your mouse in each row on "Choice". If you have made your decision, please click on "Next". Afterwards you will see a window in which you will be asked to confirm your decision. If you want to change your decision, please click on "Back". If you are satisfied with your decision, please click on "Confirm". Please take your time and use this page to get familiar with the entry system.

If you are sure that you are familiar with the task, please continue with the study.

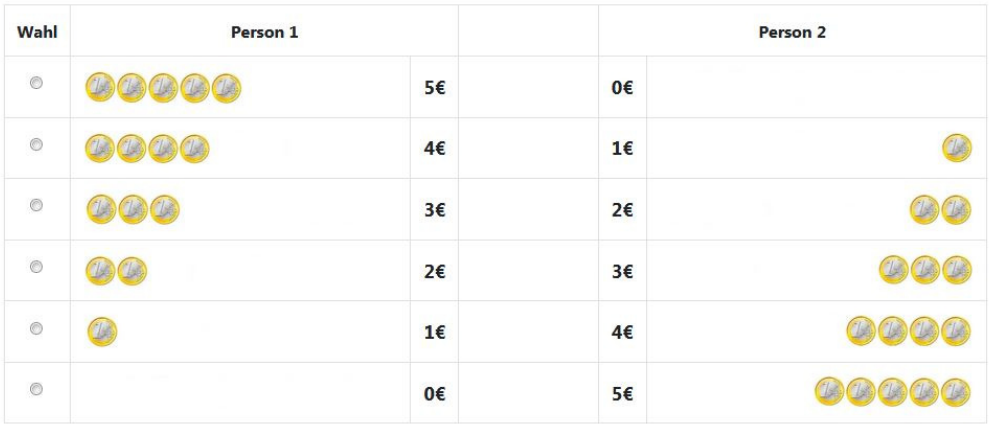

Figure 12: In the test decision the participants could familiarize themselves to the entry system. The test decision was the same as the first decision (with $\delta = 1$)

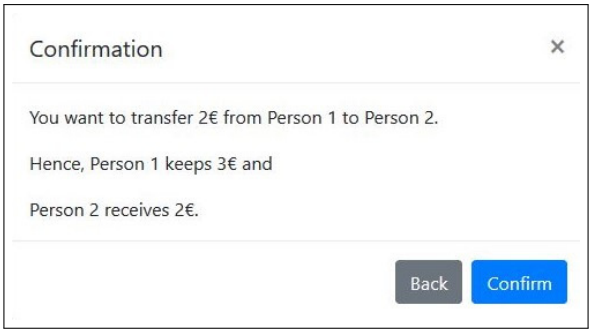

Figure 13: After each decision a Pop-up appeared in which the allocation decision and its consequences were summarized. The participants had the possibility to confirm to continue the study or revise their decision.

{Screen 8}

Part 2 of the Study - First Decision

{**Screen 9**}

First decision

Before you take your decision, you receive the following information about Person 1 and Person 2.

Figure 14: Vignette containing the characteristic of Person 1 and Person 2. Person 1 has the same characteristics across all treatments, while Person 2 changed according to the characteristics on the group(Asylum seeker, German citizen or economic migrant), education (no vocational training or University degree) and voluntary work (performing voluntary work and not performing voluntary work). The vignette was shown prior to all of the three decisions.

{Screen 10}

First decision

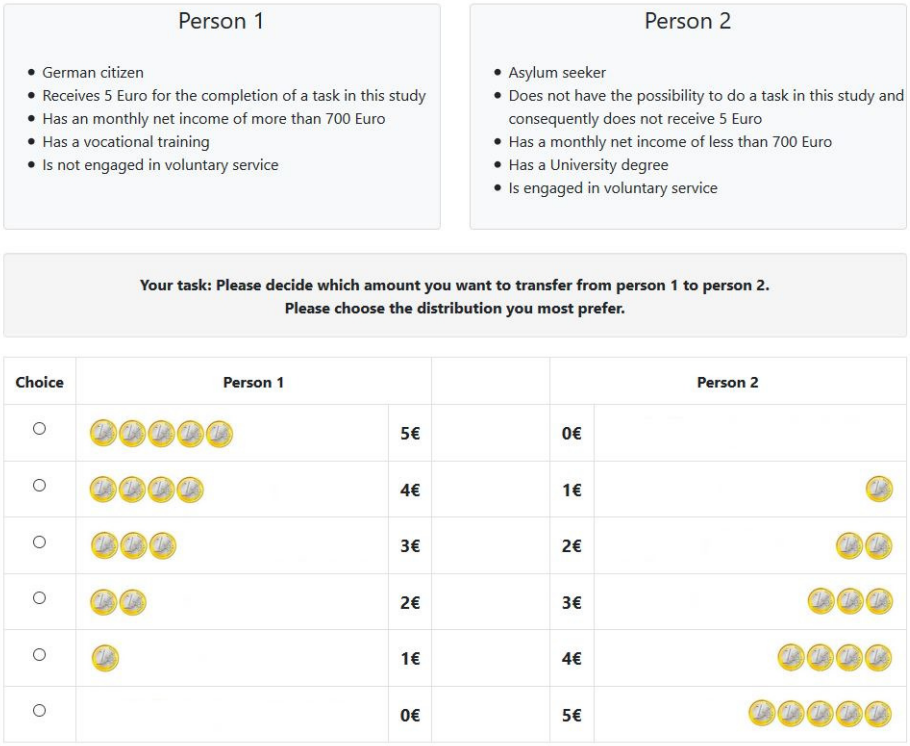

Figure 15: First decision screen (with $\delta = 1$).

[Figure 13 was shown here]

{Screen 11}

Part 2 of the Study - Second Decision

{Screen 12}

Second decision

Before you make your decision, you receive the following information on Person 1 and Person 2. Please bear in mind that these are different people than in Decision 1, even if they have the same characteristics.

[Figure 14 was shown here]

{Screen 13}

Second decision

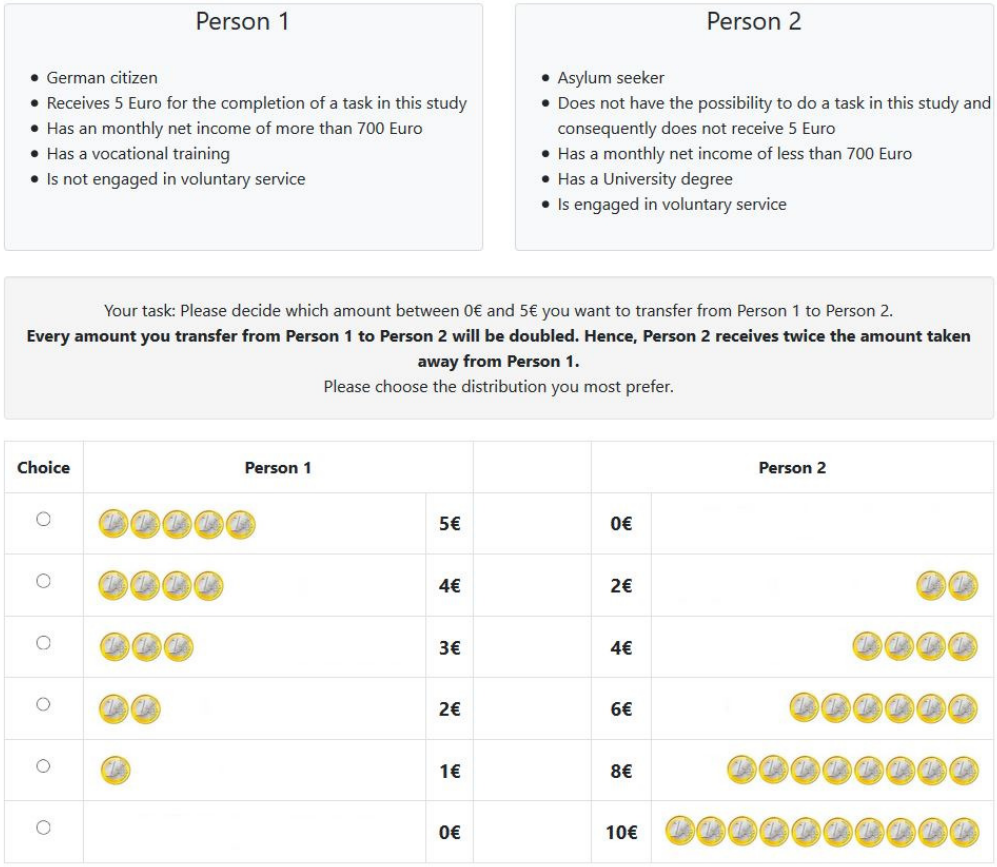

Figure 16: The second and third decision were randomized on the participant level. Hence, the second decision was either with $\delta = 2$ (see this figure) or with $\delta = \frac{1}{2}$ (see figure 18).

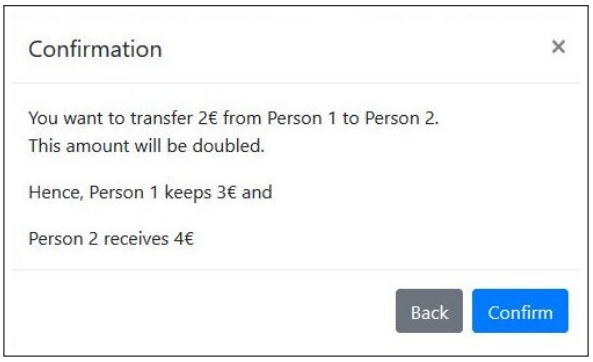

Figure 17: Pop-up Window of the second decision (with $\delta = 2$).

{Screen 14}

Part 2 of the Study - Third Decision

{Screen 15}

Third decision

Before you make your decision, you receive the following information on Person 1 and Person 2. Please bear in mind that these are different people than in Decision 1 and Decision 2, even if they have the same characteristics.

[Figure 14 was shown here]

{**Screen 16**}

Third decision

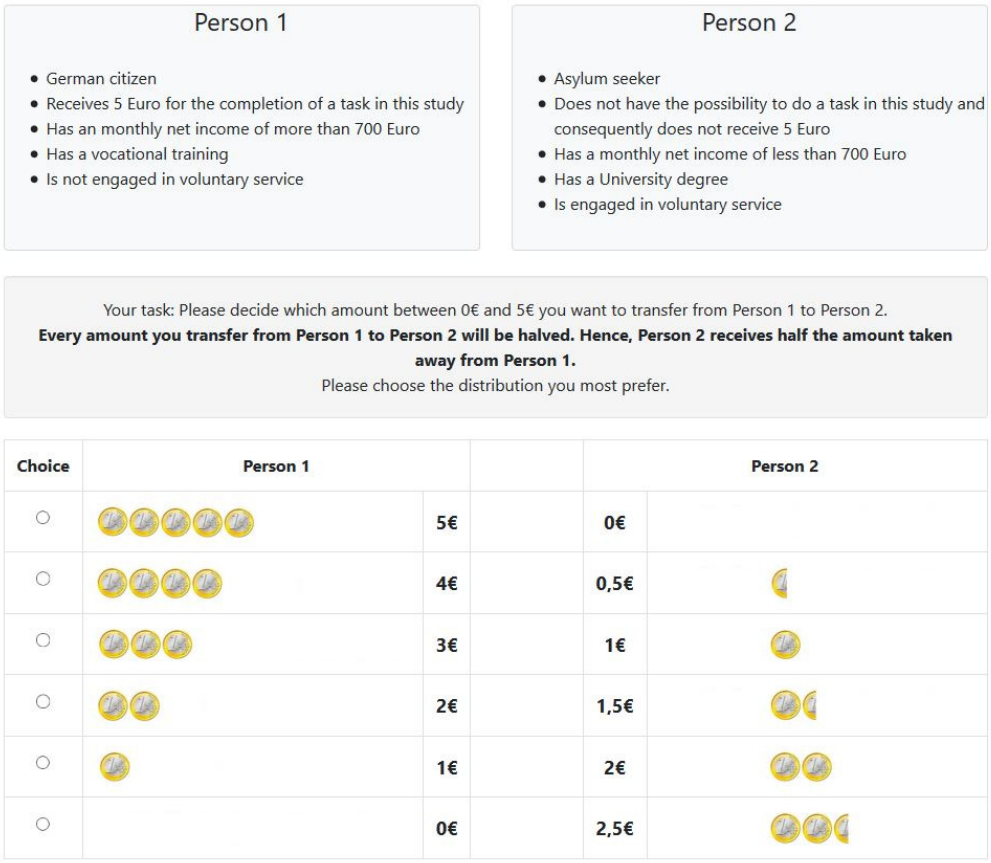

Figure 18: The second and third decision were randomized on the participant level. Hence, the second decision was either with $\delta = 2$ (see figure 16) or with $\delta = \frac{1}{2}$ (see this figure).

Figure 19: Pop-up window for the third decision (with$\delta = \frac{1}{2}$).

{**Screen 17**}

Part 2 of the Study - Fourth Decision

{**Screen 18**}

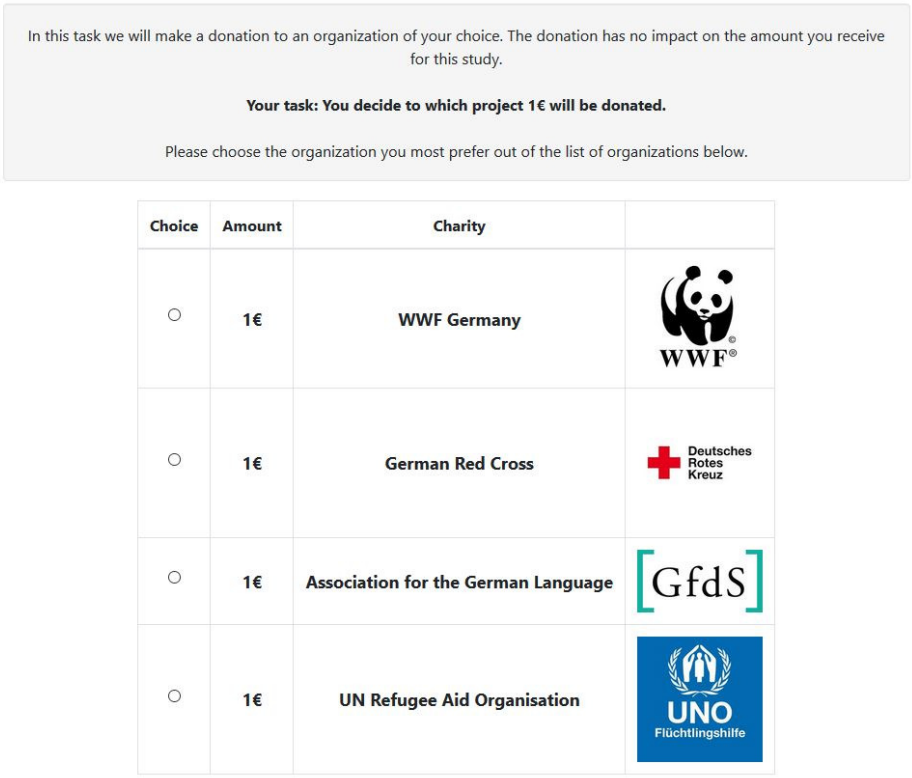

Figure 20: In the last decision the participants could decide to which charity organization 1€was donated. The charity organizations where presented in randomized order.

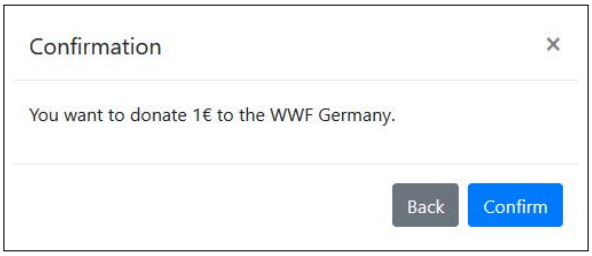

Figure 21: Pop-up window for the donation decision.

{**Screen 19 - 33**}

[Questionnaire - Part 2 (see Appendix 7.8)]

7.8 Questionnaire

Questionaire-Part 1

1. How old are you? _____

2. Please indicate your gender.

   ☐ Female

   ☐ Male

   ☐ Diverse

3. Please indicate your nationality.

☐ German nationality

☐ German and other nationality
What other nationality do you have? _____

☐ No German nationality

4. Were you born in Germany?

☐ Yes

☐ No

5. Whats is your highest educational level?

☐ No degree

☐ Secondary school

☐ Junior high school

☐ High School

☐ University degree

☐ Advanced technical college entrance qualification

☐ Other degree

☐ Doctorate (PhD)

☐ Dual vocational training

☐ Master degree (craftsman)

☐ Other professional degree

6. Please enter the postcode of your current place of residence. _____

Questionaire-Part 2

1. Was your mother born in Germany?

☐ Yes

☐ No

Please indicate in which country/region your mother was born. _____

☐ Don't know

2. Was your father born in Germany?

☐ Yes

☐ No

Please indicate in which country/region your father was born. _____

☐ Don't know

3. Were your grandparents born in Germany?

☐ Yes

☐ No

Please indicate in which country/region your grandparents were born. _____

☐ Don't know

☐ partially

Please indicate all countries/regions in which your grandparents were born, who were not born in Germany _____

☐ Don't know

4. What is your net monthly household income? This is the total income of all family members living in the household after deduction of taxes and duties per month.

☐ less than 900 Euros

☐ 900-1300 Euros

☐ 1301-1500 Euros

☐ 1501-2000 Euros

☐ 2001-2600 Euros

☐ 2601-3200 Euros

☐ 3201-4500 Euros

☐ 4501-6000 Euros

☐ more than 6001 Euro

5. What is your current employment situation? (If you have several jobs, please indicate only your main job)

☐ Employed (more than 450 Euros, social security contributions)

☐ Self-employed

☐ 450 Euros employment

☐ Working without registration

☐ Currently not employed and not job seeking

☐ Job-seeking, but currently unemployed

☐ Student

☐ Retiree

☐ Trainee or intern

☐ Other

6. In which professional position are you currently employed? If you have more than one professional activity, please answer the following questions only for your current main professional activity

Self-employed (including family members working for the self-employed)

☐ Self-employed farmer

☐ Freelance professional, Self-employed academic

☐ Other self-employed

☐ Family member working for self-employed relative

Blue-collar worker (also in agriculture)

☐ Unskilled worker

☐ Semi-skilled worker

☐ Trained worker or skilled worker

☐ Foreman/forewoman

☐ Master craftsperson

Civil servant (including judges and professional soldiers)

☐ Lower level

☐ Middle level

☐ Upper level

☐ Executive level

White-collar worker

☐ Industry or factory foreman / forewoman in a salaried position

☐ Salaried employee engaged in unskilled activities without completed training/ education

☐ Salaried employee engaged in unskilled activities with completed training/ education

☐ Salaried employee engaged in skilled activities (e.g., executive officer, book-keeper, technical draftsman)

☐ Salaried employee engaged in highly skilled activities or managerial function (e.g. scientist, engineer, department head)

☐ Salaried employee with extensive managerial duties (e.g., managing director, business manager, head of a large firm or concern)

7. Do you belong to a religious community? If so, which one?

☐ I do not belong to any religion.

☐ Protestant Church

☐ Catholic Church

☐ Christian-Orthodox Church

☐ Islam

☐ Judaism

☐ Other

8. How often do you engage in voluntary service to the community? (e.g. support of associations etc.)

☐ I do not engage in any voluntary community service.

☐ I do voluntary community service less than once a month.

☐ I do voluntary community service every month.

☐ I do voluntary community service every week.

9. Please indicate how strongly you agree with the respective statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
A person who does voluntary work can be trusted in principle.	☐	☐	☐	☐	☐
A person who does voluntary work only wants to present himself.	☐	☐	☐	☐	☐
A person who does voluntary work is an asset to society.	☐	☐	☐	☐	☐
A person who does voluntary work is admirable.	☐	☐	☐	☐	☐
From a person who does voluntary work, I rather expect him/her to help me if I need help.	☐	☐	☐	☐	☐
I find a person who does voluntary work more likeable than a person who is not involved.	☐	☐	☐	☐	☐
A person who does voluntary work deserves to be supported.	☐	☐	☐	☐	☐
The state benefits from people who do voluntary work.	☐	☐	☐	☐	☐

A person who does voluntary work is less motivated in his or her working life.	☐	☐	☐	☐	☐
Please mark 'Strong rejection' on the far right to prove that you are reading the text.	☐	☐	☐	☐	☐

10. Please indicate how strongly you agree with the respective statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
A person with a high level of education can generally be trusted.	☐	☐	☐	☐	☐
A person with a high level of education is often more arrogant than a person with a low level of education.	☐	☐	☐	☐	☐
A person with a high level of education is an enrichment for society.	☐	☐	☐	☐	☐
A person with a high level of education is more likeable than a person with a low level of education.	☐	☐	☐	☐	☐
A person with a high level of education deserves to be supported.	☐	☐	☐	☐	☐
The state benefits from people with a high level of education.	☐	☐	☐	☐	☐
A person with a high level of education is less motivated in working life.	☐	☐	☐	☐	☐

11. How often do you meet with migrants? This means personal meetings and conversations, not just greetings. (e.g. at work or in the neighbourhood)

☐ Daily

☐ Several times a week

☐ Once a week

☐ Once a month

☐ Less than once a month

☐ Never

12. Which of the following activities have you done in connection with the refugee issue and which do you (also) intend to do in the future?

☐ Support refugees with monetary or material donations

☐ Work on site with refugees (e.g. visits to authorities or language training)

☐ Participate in demonstrations or signature campaigns on refugee issues

☐ Nothing of the sort

13. How often do you have contact with migrants in your circle of friends and acquaintances, if there are migrants there?

☐ Very often

☐ Often

☐ Occasionally

☐ Seldom

☐ Never

14. What experience have you had with migrants in your circle of friends and acquaintances?

☐ Very positive

☐ Positive

☐ Neither nor

☐ Negative

☐ Very Negative

☐ None

15. Please indicate how strongly you agree with the respective statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Immigrants increase the crime rate.	☐	☐	☐	☐	☐
Immigrants are generally good for the German economy.	☐	☐	☐	☐	☐
Immigrants take jobs away from people born in Germany.	☐	☐	☐	☐	☐
Foreigners living in the Federal Republic of Germany should adapt their lifestyle to that of Germans.	☐	☐	☐	☐	☐
Germany is currently taking in too many migrants.	☐	☐	☐	☐	☐

16. How important are living conditions to you...

	Very important	Important	Undecided	Unimportant	Very unimportant
... of the people in your city	☐	☐	☐	☐	☐
... of the people in your country	☐	☐	☐	☐	☐
... of the people in Europe	☐	☐	☐	☐	☐
... of the people in the world	☐	☐	☐	☐	☐

17. How close are the following groups to you?

	Very close	close	Undecided	Distant	Very distant
People in your city	☐	☐	☐	☐	☐
Germans	☐	☐	☐	☐	☐
Europeans	☐	☐	☐	☐	☐
People everywhere in the world	☐	☐	☐	☐	☐

18. Germany's membership of the European Union is in your opinion...

☐ A good thing

☐ Neither good nor bad

☐ A bad thing

☐ Don't know

19. Do you see yourself as...

☐ exclusively German

☐ German and European

☐ European and German

☐ exclusively European

☐ Don't know

20. Did you vote in the last Bundestag election?

☐ Yes

☐ No

21. If the federal elections were next Sunday, which party would you vote for?

☐ CDU/CSU

☐ SPD

☐ Grüne

☐ Die Linke

☐ AfD

☐ FDP

☐ Other party

22. Many people use the terms 'left' and 'right' to denote different political attitudes. If you think of your own political views, where would you rate these views on this scale?

☐ Extremely left

☐ Left

☐ In the middle

☐ Right

☐ Extremely right

23. Please indicate on the following scale how strongly you agree with this statement

	Strongly agree				Strongly disagree
Compared to others, I have not achieved what I deserve in life. A person who does voluntary work can be trusted in principle.	☐	☐	☐	☐	☐

24. Please indicate how strongly you agree with the respective statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
People who have been granted asylum in Germany should receive financial support from the German state to secure their livelihood.	☐	☐	☐	☐	☐
People who have been granted asylum in Germany should receive financial support for integration.	☐	☐	☐	☐	☐
Asylum seekers who have not yet been granted asylum in Germany should receive financial support from the German state to secure their livelihood.	☐	☐	☐	☐	☐
Asylum seekers who have not yet been granted asylum in Germany should receive financial support for integration.	☐	☐	☐	☐	☐
Migrants who came to Germany for economic reasons and have no right to asylum should receive financial support from the German state to secure their livelihood.	☐	☐	☐	☐	☐
Migrants who have come to Germany for economic reasons and do not have the right to asylum should receive financial support for integration.	☐	☐	☐	☐	☐

25. Please indicate how strongly you agree with the respective statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
People who apply for asylum in Germany are mainly politically persecuted people who have a right to asylum.	☐	☐	☐	☐	☐
People who apply for asylum in Germany are mainly people who come to Germany for economic reasons and have no right to asylum.	☐	☐	☐	☐	☐
Migrants who come to Germany for economic reasons are mainly citizens of other European countries.	☐	☐	☐	☐	☐
Migrants who come to Germany for economic reasons are mainly citizens of non-European countries.	☐	☐	☐	☐	☐

26. Please indicate on the following scale how strongly you agree with this statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
The current political and social debate does appropriately adress the issue of the refugee crisis.	☐	☐	☐	☐	☐