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**On the relevance of income and behavioral factors for
absolute and relative donations: A framed field experiment**

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Very preliminary version

Abstract

Based on data from a computer-based survey among more than 500 German respondents, this paper empirically examines the effect of actual equivalent income and estimated income position as well as behavioral factors on absolute and relative donations. Donations were measured in an incentivized framed field experiment, i.e. the respondents could spend money for three prominent environmental and social organizations. The perceived relative income refers to the estimated percentage of German households with a lower equivalent income compared to the own equivalent income. Furthermore, the behavioral factors are based on experimentally validated survey questions. Our preliminary econometric analysis with Tobit models shows that both actual equivalent income and estimated income position have significantly positive effects on absolute donations, whereby the effect of actual equivalent income is more dominant. This suggests that income perceptions play a minor role for donations compared to actual income. Surprisingly and in contrast to previous studies, income has a solid significantly negative effect on relative donations for all income groups. In addition, negative reciprocity has a significantly negative effect on both absolute and relative donations, which underlines the relevance at least of this behavioral factor. The estimation results also reveal that life satisfaction is significantly positively related with absolute donations. This suggests that positive feelings play an important role for donation activities.

Keywords: Environmental and social donations, behavioral factors, actual equivalent income, estimated income position, Tobit models, framed field experiment

JEL: C93, D31, D64, H24, H40

1. Introduction

Voluntary contributions to public goods are of major interest for public policy purposes. Among the different types of voluntary contributions of public goods, charitable giving has been the focus of a wide strand of research. In the U.S., for example, charitable giving is documented due to the tax allowance regulations affecting donations. Additionally, a series of studies has focused on the motives behind contributions (e.g. Andreoni, 1990; Fehr & Schmidt 1999; Konow, 2010), factors affecting the amount contributed (e.g. Andreoni et al., 2016; Dvorak & Toubman, 2013) and type of contributions (e.g. Bauer et al., 2013; Jones, 2006). Income has been considered as the major factor affecting charitable behavior. Against this background, the literature provides a series of studies on the effect of income on absolute amount donated, and proportions of donations relative to income (hereafter relative donations). While intuition and practice suggests that as income increases individuals should (in absolute terms) donate more, little consensus is reached on the size of this effect (e.g. Randolph, 1995; Bakija et al., 2011). Concerning relative donations, Schervish & Havens (1995) find that the distribution of preferences for donations is convex, with lowest-, and highest-income earners donating a larger proportion of their income to charity, compared to middle-earners. A similar pattern, albeit less accentuated, is evidenced by McClelland & Brooks (2004) in their study based on the 1997 Consumer Expenditure Survey data.

Nevertheless, evidence of the importance of social comparison on the individuals' behavior may question the exclusive effect absolute income on donations. In this regard, the first studies on social comparison have focused on the impact it has on subjective well-being (e.g. Luttmer, 2005; Carbonell, 2005; Brown et al., 2008) where for example, Brown et al. (2008) provide evidence of the importance that the ordinal rank of an individual's wage within a comparison group has on well-being. In public economics, social comparison is used as a potential explanation of the Easterlin paradox, which describes how happiness among individuals of developed countries remains unchanged despite the real income growth. The explanation lies in the gap between individual's actual income and income of reference group of choice (e.g. Easterlin, 2001; Clark et al., 2008).

Against this background, a large body of empirical studies has shown that subjects are sensitive to their relative income position compared to others and that this affects (consciously and/or unconsciously) their decisions on spending (e.g. Carbonell, 2005; Beshears et al., 2015). Broberg (2014) designs a split-sample experiment with 2000 Swedish participants and shows that the willingness-to-pay (WTP) for forest preservation varies with relative income, where respondents

with a hypothetical lower relative income state on average a lower increase in WTP compared to their counterparts with unchanged relative income. Beshears et al. (2015) conduct a field experiment on peer information on voluntary retirement saving decisions, and finds oppositional reaction to peers information.

A recent strand of research investigating the behavioral effects of individual estimated income position along the income distribution shows that individuals often fail to infer the correct income distribution for the entire population and by such fail to correctly assess their real position in the distribution. The reasons that lead to such imprecise assessment include, restricted information because it is difficult or costly to be obtained, failure to consider all available information, and/or limited cognitive abilities (e.g. Benoît & Dubra 2011; Cruces et al., 2013). As an example, Ravallion & Lokshin (2002) use the Russian Longitudinal Monitoring Survey and show that the assessment of economic welfare in Russia deviates much from the real measure and that most of those who feel poor are not classified as such and vice versa.

Cruces et al. (2013) in their seminal work try to assess for the first time the effect of individual perception on relative income on preferences for redistribution based on a survey with 1100 representative households in Greater Buenos Aires in Argentina. The results of the experiment show that the majority of respondents underestimate their relative income position in the income distribution of the population. Additionally, those who overestimated their relative income and were informed of their true ranking demanded higher levels of redistribution, while no effect is found for those underestimating their relative income position. Engelhardt & Wagener (2016) conducted a similar survey with a representative sample of 1,100 German households that included two randomized treatments but find no effect on information disclosure of true ranking on preferences for redistribution. Additionally, Karadja et al. (2017) in their survey experiment for Sweden show that informing subjects of their true ranking affects preferences for redistribution, but only for those who underestimate their relative income and are conservative politically oriented. Against this background, our first research question investigates the relevance of estimated income position versus absolute income on donations, and consistency of the shape of the relation between income and donations.

Additionally, other determinants such as education, marital status, gender, religious affiliation, and attitudes to risk have shown to be relevant for charitable giving (e.g. Andreoni & Vesterlund, 2001; Wiepking & Maas, 2009; Forbes & Zampelli, 2013; Mastromatteo & Russo, 2017). De Oliveira et al. (2011) run an artefactual field experiment where participants have the possibility to earn money

and then donate to multiple charitable organizations. By examining the relationship between giving among different organizations, the authors show evidence of a “*giving type*”, where individuals giving to one organization have a higher propensity to donate to another organization than non-donors. The study associates this behavior to a unique factor called “generosity index”, which is not correlated to economic or demographic characteristics, and which researchers associate to unobservable characteristics. In addition, Brock et al. (2013) in their laboratory experiment show that risk has an adverse effect on dictator’s transfers.

Against this background, and considering a series of previous studies revealing the importance of risk preferences on behavior and outcomes such as buying stocks, housing ownership, as well as the relevance of time preferences for lifetime outcomes such as income or unemployment (e.g. Golsteyn et al., 2014) or even for cognitive ability (e.g. Dohmen et al., 2010) our second research question considers the inclusion of behavioral factors in our analysis and investigates the possible relation with charitable giving. Among our factors of interest we included risk attitudes, time preferences, social preferences measured by an incentivized artefactual field experiment, patience, as well as negative, and positive reciprocity. Additionally, we consider relevant information on self-assessment for health status and overall life satisfaction.

Our preliminary econometric analysis with Tobit models shows that both actual equivalent income and estimated income position have significantly positive effects on absolute donations, whereby the effect of actual equivalent income is more dominant. This suggests that relative income perceptions play a minor role for donations compared to actual income. Surprisingly and in contrast to previous studies, income has a solid significantly negative effect on relative donations for all income groups. In addition, negative reciprocity has a significantly negative effect on both absolute and relative donations, which underlines the relevance at least of this behavioral factor. The estimation results also reveal that life satisfaction is significantly positively related with absolute donations. This suggests that positive feelings play an important role for donation activities.

The remainder of the paper is organized as follows: Section 2 presents the data and the variables in our econometric analysis and Section 3 discusses the descriptive statistics and the preliminary estimation results.

2. Data and Variables

The data for our empirical analysis were collected from a computer-based online-survey carried out by the German market research company SUZ (Sozialwissenschaftliches Umfragezentrum

GmbH) between October 2016 and January 2017. Overall, 674 respondents participated in the survey that comprised one large discrete choice experiment referring to attitudes toward the German energy transition and its single policy measures. As a result, the target population of the survey included all German households with a landline and internet connection who were at least 18 years old and were sufficiently informed about the energy consumption in their households. Our research question is based on an incentivized framed field experiment that specifically investigates preferences for contributions to public goods with a focus on environmental and social charitable organizations. Furthermore, the questionnaire collects information on environmental preferences, political identification and behavioral factors besides the usual socio-demographic and socio-economic characteristics. While the initial sample included cross-sectional data for 674 German respondents, we had to drop those respondents that failed to correctly answer a control task and restrict the full sample to 522 respondents. Additionally, since the survey included among others a randomized experiment (related to the discrete choice experiment) treating half of the respondents with some information, we restrict our main sample pool to 265 respondents (hereafter, estimation sample) and use the full sample of 522 respondents as a robustness check for our econometric analysis.

2.1 Dependent Variables

Our main dependent variable “*absolute donations*” is constructed based on an incentivized framed field experiment. Participants are informed that 20 randomly selected subjects will earn 100 Euros that they can allocate between themselves and three prominent social and environmental non-governmental and non-profit organizations, namely Deutsche Welthungerhilfe, WWF, and/or atmosfair. For each of the organizations a short description of the projects and aim is provided. The variable aggregates the donations to the three charitable organizations for each respondent and is restricted to the values zero to 100 Euros. Furthermore, for our analysis we use “*relative donations*”, which is constructed by dividing absolute donations with absolute equivalent income and multiplying the result with 100 for each respondent respectively.

2.2 Explanatory Variables

Income

The first research question of our paper refers to the importance of absolute income versus perceived relative income on preferences for voluntary contributions to charitable organizations.

Absolute income here is defined by the variable “*absolute equivalent income*” and is given in 1000 Euros. The variable is calculated considering net household income and the specific weight of household members and is divided with 1000. The specific weights for household’s head, any other adult in household, and children of 14 years or younger are one, 0.5, and 0.3 respectively. In the econometric analysis we use the squared (“*squared absolute equivalent income*”) and logarithmized (“*log absolute equivalent income*”) forms of the variable.

In line with Cruces et al. (2013) and Engelhardt & Wagener (2016), we ask respondents to estimate the percentage of German households with a lower net equivalent income than own net equivalent income. From this question we construct the variable “*perceived relative income*”, which is measured in percentages and is limited to values varying between zero and one.

Behavioral factors

In line with Fehr et al. (2003) we elicit the propensity to trust based on the following three statements: “In general people can be trusted”, “Nowadays you cannot rely on anyone”, and “When dealing with strangers, it is better to be careful before trusting them”. Respondents are asked how strongly they agree with these statements on a five-stage scale, i.e. “totally disagree”, “rather disagree”, “undecided”, “rather agree”, and “totally agree”, for which we assign increasing integers from one to five for the first positively worded statement and decreasing integers from five to one for the two negatively worded statements. The variable “*trust*” is designed by adding up the values of the three items and thus varies between three and 15. For the econometric analysis we assume the variable to be continuous.

In line with Fischbacher et al. (2015), social preferences are measured by an incentivized artefactual field experiment in the form of a generosity game when generosity is costless. Respondents are informed that 20 randomly chosen subjects will win 50 Euros and will choose how much (between ten and 90 Euros) can some additional 20 randomly chose respondents win (see Table 1). The corresponding variable used in the econometric analysis is “*social preferences*” and takes values between ten and 90.

Our variable for risk preferences is based on a survey question from the German Socio-Economic Panel (SOEP) that has been already applied in several previous studies (e.g. Jaeger et al., 2010; Dohmen et al., 2011; Dohmen et al., 2012, Fischbacher et al., 2015). The participants are therefore asked on their perception of general willingness to take risks on a five-stage scale with the response categories “not at all willing to take risks”, “rather not willing to take risks”, “undecided”, “rather

willing to take risks”, and “very willing to take risks”. On the basis of this ordinal variable, we construct the dummy variable “*risk taking preferences*” that takes the value one if the respondent indicated one of the latter two categories. The variable for patience is again based on a survey question from the German Socio-Economic Panel (SOEP). Respondents are therefore asked how patient would they estimate themselves on a five-stage scale with the response categories “very impatient”, “rather impatient”, “undecided”, “rather patient”, and “very patient”. On the basis of this ordinal variable, we obtain the dummy variable “*patience*” that takes the value one if the respondent indicates one of the latter two categories.

The variables for positive and negative reciprocity are constructed considering Perugini et al. (2003). Positive reciprocity is obtained from the following three statements: “When someone does me a favor I am ready to return it”, “I go out of my way to help somebody who has been kind to me before”, and “I’m ready to undergo personal costs, to help someone who helped me before”. Meanwhile, negative reciprocity is obtained from the following three statements: “If someone treats me very unjustly, I will avenge myself at the first occasion at any cost”, “If someone puts me in a difficult position, I will do the same to him”, and “If someone insults me, I will behave offensive to him”. The respondents are asked how strongly they agree with these statements on a five-stage scale with response categories, “totally disagree”, “rather disagree”, “undecided”, “rather agree”, and “totally agree”, for which we assign increasing integers from one to five for both the positive and negative reciprocity items. The variables “*positive reciprocity*” and “*negative reciprocity*” are constructed by aggregating the values of the three respective items and thus vary between three and 15. For the econometric analysis we assume the variables to be continuous.

Individual values and control variables

Previous empirical studies (e.g. Dvorak & Toubman, 2013; Forbes & Zampelli, 2013) suggest that environmental awareness, socio-demographic and socio-economic factors are important aspects in explaining attitudes toward contributions for charity. Hence, we include these factors, as control variables in our econometric analysis.

Our indicator for environmental preferences is based on the New Ecological Paradigm (NEP) scale according to Dunlap et al. (2000). The NEP scale is a standard instrument in the social and behavioral sciences and is increasingly common in the economic literature (e.g. Kotchen & Moore, 2007; Delmas & Lessem, 2014; Fischbacher et al., 2015; Ziegler, 2017). Our indicator is based on the following six statements: “Humans have the right to modify the natural environment to suit

their needs”, “Humans are severely abusing the planet”, “Plants and animals have the same right to exist as humans”, “Nature is strong enough to cope with the impacts of modern industrial nations”, “Humans were meant to rule over the rest of nature”, and “The balance of nature is very delicate and easily upset”. The respondents were asked how strongly they agree with these statements on a five-stage scale with response categories, “totally disagree”, “rather disagree”, “undecided”, “rather agree”, and “totally agree”, for which we assign increasing integers from one to five for the three environmentally positively worded statements and decreasing integers from five to one for the three environmentally negatively worded statements. The variable “*NEP*” is designed by adding up the values of the six items and thus varies between six and 30.

As for political identification we consider the four following statements: “I identify myself with conservatively oriented politics”, “I identify myself with liberally oriented politics”, “I identify myself with socially oriented politics”, and “I identify myself with ecologically oriented politics”. Again, respondents are asked to assess how strongly they agree with each of the statements on a five-stage scale with the five ordered response categories “totally disagree”, “rather disagree”, “undecided”, “rather agree”, and “totally agree”. For each of the statements we design the dummy variables “*conservative identification*”, “*liberal identifications*”, “*social identification*”, and “*ecological identifications*”, where each takes the value one if the respondent indicates one of the latter two categories, respectively.

Our variable for religious affiliation is based on a question were participants are asked to identify their religious affiliation between “catholic”, “protestant”, “islam”, “other religion”, and “no religious affiliation”. Each of the alternatives is constructed as a dummy variable that takes the value one if the respondents identifies as belonging to one of the specific choices. For our econometric analysis we consider only the dummy variable “*no religious affiliation*”.

Some of the socio-demographic variables included in the analysis are: “age” measured in years, the dummy “*female*” that takes the value one if the respondent is a woman, the dummy “*university educations*” takes the value one if the respondent has at least a university degree, and the dummy variable “*Eastern Germany*” that takes the value one if the respondent is a resident of a new federal state (former GDR).

In order to design our variable for life satisfaction respondents were asked to estimate their overall life satisfaction on a five-stage scale with the five ordered response categories “very unsatisfied”, “rather satisfied”, “undecided”, “rather satisfied”, and “very satisfied”. The variable “*life satisfaction*” is designed as a dummy variable that takes the value one if indicating one of the latter

two categories. Additionally, respondents are asked to describe their current state of health again on a five-stage scale with the five ordered response categories “very bad”, “rather bad”, “neither good, nor bad”, “rather good”, and “very good”. The variable “*health*” is designed as a dummy variable that takes the value one if the respondent indicates one of the two latter categories. In both above statements a sixth alternative “don’t know/no answer” was added in order to avoid central tendency bias.

“Treatment” is a dummy variable used only in the econometric analysis of the full sample, and takes the value one if respondent is treated in the randomized experiment related to the discrete choice experiment, and zero if otherwise.

3. Empirical Analysis

3.1 Descriptive Statistics

Table 2 reports descriptive statistics for the dependent and explanatory variables used in the econometric analysis for both, the estimation and full samples. In our sample respondents donate on average 74.74 Euros of their possible win to the three charitable organizations, with almost half of them expressing a preference to donate the full win and 87% of them donating more than 50 Euros. The preferences to donate two third of the possible win may be a result of the hypothetical circumstances of the experiment or of the low probability of winning 100 Euros (only 3% of the respondents). The average net equivalent income of our restricted sample amounts to 2318 Euros, and about half of the respondents rank themselves between the 30th and 60th percentile of the income distribution. In this regard, our data show that respondents with similar net equivalent income make different assessments of their ranking along the distribution. This discrepancy of perception of income and actual income is in line with previous empirical evidence and validates our research question on the possible relevance of the estimated income position on donations beyond absolute income.

As for social preferences, on average subjects express preferences to allocate 69.164 Euros to other respondents. Furthermore, Table 3 shows that respondents mostly opt for the allocation of either 50 and 90 Euros similarly with only a little share of them (less than 7%) allocating another amount. High social preferences indicate a generous and altruistic subject pool, which seems to explain the high level of donations to the environmental charitable organizations.

In general, our respondents declare weak (strong) preferences to reciprocate negative (positive) experiences, more than half of them consider themselves very patient, and only a small share are

willing to take risks. On average our respondents display high environmental preferences (NEP 25.15). As for political preferences, our sample has a high share of respondents with social and ecological political beliefs with only a small share claiming to be conservative. Concerning religious affiliation, the majority of respondents (approx. 43%) report no religious affiliation. Furthermore, our sample is characterized by an under-representation of female (only 37.7%) and respondents residing in Eastern Germany (14.7%), and an over-representation of respondents with at least university education. More than one third of the respondents claim to be satisfied with their life and to enjoy a good state of health.

3.2 Preliminary Econometric Results

Our two dependent variables “absolute donations” and “relative donations” are restricted respectively between zero and 100, and zero and 45. Against this background, and in line with previous literature on donations (e.g. Kingma, 1989; McClelland & Brooks, 2004; Bönke et al 2013), the Tobit model is used for our econometric analysis. All estimations were conducted with the statistical package STATA. In all cases (Table 4 to Table 7) we report estimated average marginal effects (in case of continuous variables) and estimated discrete effects (in case of dummy variables) on the basis of Maximum Likelihood estimations of the Tobit model for the determinants of absolute and relative donations in the estimation and full samples. The structure of the tables reporting estimation results is the same, where for each table, the first two columns refer to the models that include only “*log absolute equivalent income*” or “*estimated income position*” as income variables. The third column refers to the model that includes “*log absolute equivalent income*” and “*estimated income position*” and the fourth column refers the model that includes “*absolute equivalent income*” and its quadratic version “*squared absolute equivalent income*”.

Table 4 and 5 report the estimation results for the determinants of absolute donations for the estimation, and full samples respectively. The estimation results in the upper part of Table 4 show that when regressed separately, absolute equivalent income and estimated income position have a significantly positive effect on absolute donations at a 1% significance level. When regressed together (column three) estimated income position loses significance over absolute equivalent income, with the latter preserving its significantly positive effect. In the fourth model we see that absolute and squared equivalent income show respectively, a significantly positive, and negative effect on absolute donations at a 1%, and 5% significance level. One main result is the robust

significantly positive effect of absolute equivalent income on absolute donations across all models. Furthermore, the results for the full sample confirm the robustness of the observed effects.

When checking for the effect or relation of the behavioral factors in the estimation sample, across all four models social preferences have a significantly positive effect on absolute donations at a 5% significance level, which is not robust due to the lack of significance in the full sample. Negative reciprocity, on the other hand, seems to have a strong significantly negative relation (slightly weaker in second model of Table 4) with absolute donations. Further, life satisfaction displays a stable and highly significant relation with absolute donations in the restricted sample across all four models. Apparently, being overall satisfied with own life may incite thinking about others, and lead to an increase of efforts to help such as in the form of voluntary contributions to charitable organizations.

When controlling for the two variables in the full sample, we confirm the robustness of these results for the negative reciprocity and life satisfaction. Additionally, for the restricted sample we find a significantly positive effect of age on absolute donations, but which is not robust across both samples.

Table 6 and 7 report the estimation results for the determinants of relative donations for the restricted, and full samples respectively. The upper parts of both tables show that absolute equivalent income have a significantly negative effect on relative donations, and that this result is robust across all models and samples. No evidence of a convex relation between absolute equivalent income and relative donations is found since the level of income at the cutoff point is not observable in our sample. Differently from the case of absolute donations, there is no other robust effects or relations across models and samples for the determinants of relative donations. In the restricted sample, social preferences, conservative political identification, female, university education and life satisfaction display weak positive or negative significance, but these results are not robust across models and samples. On the other hand, in the full sample negative reciprocity displays a significantly negative relation with relative donations across all four models and ecological political orientation displays a significantly positive effect on relative donations. Age and life satisfaction have a weak effect/relation on/with relative donations in some models (second and third column) but the findings are in general not robust

As a summary, our preliminary results find evidence of a significantly positive (negative) effect of absolute equivalent income on absolute donations (relative donations), and that this effect is robust across both samples and model specifications. Among the behavioral factors, negative reciprocity

is the only variable displaying a significant (negative) relation with absolute donations across both samples and model specifications. Life satisfaction, on the other hand, has a significantly positive relation only with absolute donations (for both samples), but no evidence of robustness of results across both samples is found for relative donations.

Across both samples, other variables such as conservative and political identification, social preferences, female, age, university education, but also life satisfaction (for relative donations), show no robust effects/relations, which may be accounted to the randomized experimental approach implemented in the survey. Even though the experiment was related to the discrete choice experiment in the survey, and we find no treatment effect for the full sample (see variable “*treatment*” in Table 5 and Table 7), we cannot rule out a possible effect on the preferences for environmental donations which would explain for the differences between the samples.

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Tables

Table 1: Choice table in the social preferences experiment (i.e. generosity game)

Amount for you	50 Euro	50 Euro	50 Euro	50 Euro	50 Euro	50 Euro	50 Euro	50 Euro	50 Euro
Amount for another randomly selected person	90 Euro	80 Euro	70 Euro	60 Euro	50 Euro	40 Euro	30 Euro	20 Euro	10 Euro
Decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 2: Descriptive statistics of dependent and explanatory variables in the econometric analysis

Variables	Restricted sample			Full sample		
	Number of observations	Mean	Standard deviation	Number of observations	Mean	Standard deviation
Absolute donations	265	74.740	30.24	522	74.429	31.40
Absolute equivalent income	262	2.318	1.19	518	2.347	1.28
Estimated income position	265	0.483	0.21	522	0.484	0.21
Relative donations	262	3.954	3.38	518	4.013	3.54
Social preferences	263	69.164	20.12	518	69.112	21.20
Risk taking preferences	265	0.287	0.45	522	0.299	0.46
Patience	265	0.574	0.50	522	0.538	0.50
Trust	265	9.657	2.19	522	9.711	2.08
Positive reciprocity	265	12.702	1.76	522	12.588	1.66
Negative reciprocity	265	6.204	2.31	522	6.397	2.29
NEP	265	25.151	3.49	522	24.831	3.67
Conservative identification	265	0.192	0.39	522	0.239	0.43
Liberal identification	265	0.389	0.49	522	0.391	0.49
Social identification	265	0.789	0.41	522	0.778	0.42
Ecological identification	265	0.751	0.43	522	0.716	0.45
No religious affiliation	265	0.438	0.50	522	0.437	0.50
Female	265	0.377	0.49	522	0.351	0.48
Age	265	53.385	13.42	522	53.705	13.16
Eastern Germany	265	0.147	0.36	522	0.148	0.35
University education	265	0.532	0.50	522	0.511	0.50
Life satisfaction	264	0.727	0.45	518	0.751	0.43
Health	264	0.761	0.43	519	0.740	0.44

Table 3: Frequencies of payment amounts (in Euro) for other participants in the social preferences experiment (i.e. generosity game)

Payments	90	80	70	60	50
Frequencies restricted sample	121 (46.01%)	4 (1.52%)	7 (2.66%)	3 (1.14%)	124 (47.15%)
Frequencies full sample	239 (46.14%)	8 (1.54%)	12 (2.32%)	5 (0.97%)	246 (47.49%)
Payments	40	30	20	10	Total
Frequencies restricted sample	1 (0.38%)	1 (0.38%)	2 (0.76%)	0 (0.00%)	263 (100%)
Frequencies full sample	2 (0.39%)	2 (0.39%)	3 (0.58%)	1 (0.19%)	518 (100%)

Table 4: Estimates (robust z-statistics) of average marginal and discrete effects in Tobit models, dependent variable: absolute donations, restricted sample, number of observations: 258 (261 second model)

Explanatory variables				
Log absolute equivalent income	14.613*** (3.91)	--	11.610** (2.55)	--
Estimated income position	--	32.125*** (3.41)	12.765 (1.10)	--
Absolute equivalent income	--	--	--	16.870*** (3.40)
Squared absolute equivalent income	--	--	--	-1.712** (-2.22)
Social preferences	0.219** (2.38)	0.204** (2.20)	0.211** (2.30)	0.213** (2.29)
Risk taking preferences	-6.103 (-1.45)	-4.515 (-1.05)	-5.602 (-1.30)	-5.324 (-1.29)
Patience	-2.919 (-0.83)	-1.582 (-0.44)	-2.562 (-0.73)	-2.515 (-0.72)
Trust	0.429 (0.43)	0.586 (0.59)	0.385 (0.38)	0.467 (0.47)
Positive reciprocity	1.32 (1.19)	1.633 (1.38)	1.315 (1.18)	1.370 (1.24)
Negative reciprocity	-2.066*** (-2.80)	-1.864** (-2.46)	-2.049*** (-2.78)	-2.039*** (-2.75)
NEP	-0.166 (-0.29)	-0.360 (-0.64)	-0.180 (-0.32)	-0.191 (-0.34)
Conservative identification	-4.924 (-1.04)	-5.085 (-1.03)	-5.409 (-1.13)	-5.314 (-1.12)
Liberal identification	0.537 (0.14)	1.201 (0.31)	0.478 (0.12)	0.701 (0.18)
Social identification	-3.531 (-0.81)	-3.454 (-0.77)	-3.360 (-0.77)	-3.105 (-0.71)
Ecological identification	0.514 (0.11)	0.442 (0.10)	0.563 (0.13)	0.482 (0.11)
No religious affiliation	6.346* (1.73)	5.071 (1.35)	5.999 (1.64)	6.131* (1.68)
Female	5.163 (1.34)	5.688 (1.47)	5.623 (1.47)	4.849 (1.26)
Age	0.289** (2.26)	0.365*** (2.91)	0.308** (2.36)	0.292** (2.30)
Eastern Germany	-2.341 (-0.46)	-1.306 (-0.26)	-1.616 (-0.33)	-1.981 (-0.40)
University education	-1.457 (-0.42)	0.391 (0.11)	-1.667 (-0.48)	-1.524 (-0.44)
Life satisfaction	12.535*** (2.89)	12.024*** (2.80)	12.381*** (2.86)	11.559*** (2.72)
Health	3.90 (0.93)	3.540 (0.83)	3.967 (0.94)	3.299 (0.81)

Note: * (**, ***) means that the appropriate effect is different from zero at the 10% (5%, 1%) significance level, respectively

Table 5: Estimates (robust z-statistics) of average marginal and discrete effects in Tobit models, dependent variable: absolute donations, full sample, number of observations: 508 (512 second model)

Explanatory variables				
Log absolute equivalent income	10.802*** (3.80)	--	7.620** (2.34)	--
Estimated income position	--	25.811*** (3.71)	13.617* (1.66)	--
Absolute equivalent income	--	--	--	9.192*** (2.96)
Squared absolute equivalent income	--	--	--	-0.639 (-1.47)
Social preferences	0.074 (1.05)	0.062 (0.89)	0.063 (0.91)	0.070 (1.00)
Risk taking preferences	-1.618 (-0.55)	-0.855 (-0.29)	-1.344 (-0.46)	-1.766 (-0.60)
Patience	-0.654 (-0.24)	-0.355 (-0.13)	-0.512 (-0.19)	-0.702 (-0.26)
Trust	0.814 (1.11)	0.885 (1.22)	0.811 (1.11)	0.864 (1.18)
Positive reciprocity	0.614 (0.68)	0.621 (0.67)	0.573 (0.63)	0.664 (0.73)
Negative reciprocity	-1.797*** (-3.12)	-1.751*** (-3.02)	-1.823*** (-3.17)	-1.752*** (-3.06)
NEP	0.302 (0.67)	0.277 (0.62)	0.315 (0.69)	0.333 (0.73)
Conservative identification	-0.109 (-0.03)	0.174 (0.05)	-0.365 (-0.10)	-0.615 (-0.18)
Liberal identification	-0.819 (-0.29)	-0.857 (-0.30)	-0.947 (-0.33)	-1.171 (-0.41)
Social identification	-2.730 (-0.81)	-2.340 (-0.69)	-2.620 (-0.78)	-2.971 (-0.88)
Ecological identification	6.218* (1.79)	5.695 (1.62)	5.889* (1.68)	6.074* (1.75)
No religious affiliation	-2.227 (-0.78)	-2.634 (-0.92)	-2.376 (-0.84)	-2.215 (-0.78)
Female	3.364 (1.15)	4.066 (1.40)	3.857 (1.33)	3.219 (1.11)
Age	0.083 (0.81)	0.131 (1.30)	0.097 (0.95)	0.089 (0.88)
Eastern Germany	2.847 (0.79)	3.615 (1.00)	3.609 (1.01)	3.179 (0.89)
University education	1.782 (0.64)	2.572 (0.94)	1.375 (0.49)	1.424 (0.51)
Life satisfaction	10.589*** (3.22)	10.789*** (3.27)	10.606*** (3.23)	10.526*** (3.22)
Health	5.499 (1.57)	5.755* (1.67)	5.663 (1.63)	5.817* (1.69)
Treatment	0.190 (0.07)	0.424 (0.16)	0.232 (0.09)	0.251 (0.09)

Note: * (**, ***) means that the appropriate effect is different from zero at the 10% (5%, 1%) significance level, respectively

Table 6: Estimates (robust z-statistics) of average marginal and discrete effects in Tobit models, dependent variable: relative donations, restricted sample, number of observations: 258

Explanatory variables				
Log absolute equivalent income	-3.566*** (-4.23)	--	-4.010*** (-3.88)	--
Estimated income position	--	-3.975*** (-3.63)	1.797 (1.61)	--
Absolute equivalent income	--	--	--	-3.112*** (-3.70)
Squared absolute equivalent income	--	--	--	0.319*** (2.76)
Social preferences	0.013** (2.01)	0.009 (1.33)	0.012* (1.91)	0.012* (1.88)
Risk taking preferences	-0.053 (-0.19)	-0.101 (-0.30)	0.013 (0.05)	-0.129 (-0.42)
Patience	-0.475 (-1.57)	-0.710* (-1.81)	-0.419 (-1.46)	-0.571* (-1.67)
Trust	0.026 (0.36)	-0.009 (-0.12)	0.023 (0.32)	0.000 (0.01)
Positive reciprocity	0.049 (0.46)	-0.029 (-0.26)	0.049 (0.45)	0.009 (0.08)
Negative reciprocity	-0.054 (-0.76)	-0.099 (-1.27)	-0.050 (-0.69)	-0.074 (-1.10)
NEP	0.035 (0.89)	0.085 (1.48)	0.035 (0.90)	0.061 (1.20)
Conservative identification	-0.452 (-1.57)	-0.740** (-2.29)	-0.522* (-1.78)	-0.502* (-1.76)
Liberal identification	0.652 (1.30)	0.489 (0.85)	0.649 (1.31)	0.552 (1.16)
Social identification	-0.424 (-1.23)	-0.283 (-0.75)	-0.405 (-1.19)	-0.437 (-1.32)
Ecological identification	-0.009 (-0.03)	0.104 (0.28)	0.006 (0.02)	0.057 (0.17)
No religious affiliation	0.234 (0.87)	0.019 (0.06)	0.183 (0.65)	0.127 (0.40)
Female	0.519* (1.69)	0.353 (1.00)	0.581* (1.80)	0.557* (1.75)
Age	-0.006 (-0.45)	-0.032 (-1.46)	-0.003 (-0.24)	-0.012 (-0.71)
Eastern Germany	-0.340 (-0.93)	-0.234 (-0.59)	-0.252 (-0.71)	-0.261 (-0.75)
University education	-0.005 (-0.02)	-0.449* (-1.69)	-0.037 (-0.15)	-0.164 (-0.69)
Life satisfaction	0.726* (1.81)	0.543 (1.25)	0.703* (1.79)	0.820* (-1.83)
Health	0.049 (0.17)	-0.021 (-0.06)	0.047 (0.16)	0.078 (0.26)

Note: * (**, ***) means that the appropriate effect is different from zero at the 10% (5%, 1%) significance level, respectively

Table 7: Estimates (robust z-statistics) of average marginal and discrete effects in Tobit models, dependent variable: relative donations, full sample, number of observations: 508

Explanatory variables				
Log absolute equivalent income	-3.953 *** (-7.24)	--	-4.480*** (-6.13)	--
Estimated income position	--	-4.265*** (-4.89)	2.202* (1.89)	--
Absolute equivalent income	--	--	--	-3.194*** (-5.51)
Squared absolute equivalent income	--	--	--	0.294*** (3.84)
Social preferences	0.006 (1.05)	0.005 (0.71)	0.005 (0.84)	0.006 (0.87)
Risk taking preferences	0.163 (0.79)	0.023 (0.09)	0.214 (1.04)	0.112 (0.51)
Patience	0.048 (0.20)	-0.039 (-0.13)	0.083 (0.35)	0.073 (0.28)
Trust	-0.035 (-0.55)	-0.044 (-0.53)	-0.037 (-0.59)	-0.059 (-0.83)
Positive reciprocity	-0.008 (-0.10)	-0.052 (-0.68)	-0.015 (-0.19)	-0.049 (-0.61)
Negative reciprocity	-0.105** (-2.28)	-0.118** (-2.15)	-0.107** (-2.32)	-0.132*** (-2.83)
NEP	0.024 (0.78)	0.067* (1.79)	0.026 (0.83)	0.038 (1.12)
Conservative identification	0.053 (0.20)	-0.360 (-1.02)	-0.006 (-0.02)	0.113 (0.40)
Liberal identification	0.538* (1.90)	0.565 (1.57)	0.526* (1.91)	0.546 (1.77)
Social identification	-0.036 (-0.14)	-0.169 (-0.58)	-0.011 (-0.04)	0.098 (0.35)
Ecological identification	0.574** (2.36)	0.649** (2.34)	0.523** (2.16)	0.522** (2.12)
No religious affiliation	-0.244 (-1.16)	-0.370 (-1.38)	-0.275 (-1.27)	-0.269 (-1.18)
Female	0.183 (0.82)	-0.013 (-0.05)	0.258 (1.13)	0.231 (0.99)
Age	-0.010 (-0.91)	-0.034** (-2.13)	-0.008 (-0.69)	-0.017 (-1.27)
Eastern Germany	-0.262 (-0.87)	-0.039 (-0.12)	-0.146 (-0.50)	-0.198 (-0.65)
University education	0.381 (1.39)	-0.113 (-0.42)	0.309 (1.25)	0.260 (0.93)
Life satisfaction	0.479* (1.72)	0.226 (0.64)	0.482* (1.76)	0.445 (1.49)
Health	0.118 (0.43)	-0.077 (-0.22)	0.140 (0.53)	0.025 (0.09)
Treatment	0.194 (0.83)	0.183 (0.63)	0.199 (0.86)	0.127 (0.50)

Note: * (**, ***) means that the appropriate effect is different from zero at the 10% (5%, 1%) significance level, respectively