WORKING PAPER

**ECONOMIA PUBBLICA
PUBLIC ECONOMICS**

Department of Economics and Law

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Working Paper No. 194
January 2021

Sapienza University of Rome
Via del Castro Laurenziano 9 – 00161 Roma

ISSN 1974-2940

SAPIENZA
UNIVERSITÀ DI ROMA

Beautiful inequality: Are beautiful people more willing to redistribute?*

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Abstract

As winners of the “genetic lottery”, beautiful people have several advantages over their life course: they earn more, find better jobs, and are happier than their peers. We investigate whether good-looking individuals are willing to share their fortune by supporting income redistribution. Using German data, we show that beauty is associated with lower support for redistribution. Furthermore, we show that attractive individuals are more likely to believe that income should be based solely on individual achievements. To check whether the set of questions used to measure taste for redistribution captures the underlying preferences, we then investigate a possible correlation between voting behavior and beauty. We show that beauty correlates with voting for the Free Democratic Party (FDP) thus suggesting that the correlation between beauty and preferences for redistribution is channeled through party affiliation. Our findings resist to a broad set of robustness checks. A plausible mechanism that drives our findings is the self-serving bias, that is to say: people tend to attribute success to their own merit and failure to external factors. Overall, our results suggest that benefiting from random luck, such as winning the “genetic lottery”, reduces taste for redistribution.

Keywords: Beauty, Self-Serving Bias, Preferences for Redistribution, Luck

JEL Codes: D63, D69, D72, Z1

*I am indebted to Fabio Sabatini and Tommaso Reggiani for their guidance. I am grateful to Ada Ferrer i Carbonell, Daniel Hamermesh, Michele Raitano and an anonymous referee for precious comments and suggestions. I thank participants to the PhD-Economic Virtual Seminar, the INEQ workshops at Sapienza University of Rome and to the GRAPE (Research Group on the Analysis of Economic Policies) discussion group at the National Research Council of Italy.

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In an anthropological respect, let me
reiterate, a human being is an
aesthetic creature before he is an
ethical one.

Joseph Brodsky

1 Introduction

The genetic lottery is a primary source of inequalities. In fact, the genetic endowment affects health, income and education outcomes even in pair of siblings (Fletcher and Lehrer, 2011; Kweon et al., 2020). One of the most evident results of the inequalities arising from the genetic lottery is beauty. So far, the economic literature has shown that attractiveness affects a vast number of outcomes. Good-looking individuals tend to be happier (Hamermesh and Abrevaya, 2013), earn higher wages (Mobius and Rosenblat, 2006; Bonilla et al., 2019), find better jobs (Harper, 2000), carry out better tasks on the workplace (Kapoor and Maegsan, 2019; Stinebrickner et al., 2019), charge higher prices (Jaeger et al., 2019) and achieve higher cognitive outcomes (Hamermesh et al., 2019). They are able to build better social networks (O'Connor and Gladstone, 2018), have higher access to credit (Ravina et al., 2008), are viewed as more trustworthy (Wilson and Eckel, 2006) and, if economists, they have higher chances to be elected as officer of the American Economic Association (Hamermesh, 2006).

Notwithstanding the clear advantages coming from beauty, no one has ever investigated whether having benefited from random luck makes good-looking individuals more favorable to redistribution. Answering this question might help to understand some crucial aspects of the individual support for redistribution. Standard economic reasoning would predict that as attractive individuals are better-off they should oppose redistribution (Meltzer and Richard, 1981). Nevertheless, the economic literature has also shown that people are less tolerant of inequality if it derives from random luck (see e.g. Almås et al., 2010; Fong, 2001). Once controlling for broad set of confounding factors, to be attractive is plausibly just a matter of luck. Hence, we try to answer the following research question: are beautiful people willing to share their fortune?

Using German survey data, we show that attractiveness negatively relates to support for redistribution and that attractive people are more likely to believe in meritocracy. We show that household income, education, and self-reported economic conditions partly mediate these associations. Our results are robust to several controls capturing the potentially confounding effect of personality traits, anthropometric measures and parental background and hold if we use alternative measures to proxy preferences for redistribution. Since attractiveness is assessed at the beginning of the interview by the interviewer, we control for interviewer fixed effects and we ensure that our results are not due to self-esteem -as measured through a self-assessment of attractiveness. Following Giuliano and Spilimbergo (2014), we check whether the set of questions used to measure taste

for redistribution captures the underlying preferences. Hence, we further investigate a possible correlation between voting behavior and beauty. We show that beauty correlates with voting for the Free Democratic Party (FDP), which historically advocates for a low level of taxation and a free-market economy (Franzmann and Kaiser, 2006). This result suggests that the correlation between beauty and preferences for redistribution is channeled through party affiliation.

A plausible mechanism that drives our findings is the self-serving bias, that is to say: people tend to attribute success to their own merit and failure to external factors. Deffains et al. (2016) show that preferences for redistribution are influenced by self-serving bias. The authors experimentally manipulate participants' success and failure by randomly assigning hard or easy tasks to the experiment participants. They find that people who succeed tend to attribute their success to their own merit and therefore are less willing to redistribute income. When failing, instead, people tend to attribute the failure to external factors and ask for redistribution. Similarly, it is sensible to believe that attractive people may underestimate the role that beauty plays in their life hence attributing success to their own merit alone. Neglecting the role of attractiveness in life might increase beautiful people's taste for inequality.

This interpretation is in line with the growing literature on lottery winning and preferences for redistribution. In a recent paper, Somville et al. (2020) show that an exogenous increase in wealth affects people beliefs about poverty. Exploiting the results of a lottery house in Ethiopia, the authors show that those who won the lottery increasingly believe that poverty is due to personality traits and not to luck. They also show that the winners are less supportive of property taxes. Doherty et al. (2006) show that winning a lottery makes people less willing to support estate taxes and marginally decreases support for government redistribution. Powdthavee and Oswald (2014) suggest that a lottery win affects people's political preferences by increasing the willingness to vote for parties that oppose redistributive policies. We add to these findings by showing that also personal characteristics, which exogenously improve socio-economic outcomes, shape preferences for redistribution.

In a paper close in spirit to ours, Berggren et al. (2017) show that better-looking politicians more frequently belong to right-wing parties and get more votes. The authors attribute this result to the higher earnings of attractive people, which make them less favorable to redistribution. We add to this interpretation by showing that beautiful people are less inclined to redistribute income, but earnings alone do not explain this effect.

Our paper bridges two strands of literature. First, we contribute to the study of individual preferences for redistribution. Understanding the drivers of individual support for redistribution is a central topic in economics since redistributive policies rely on it (see e.g. Alesina et al., 2004; Bussolo et al., 2019; Guiso et al., 2006; Sabatini et al., 2020). Beliefs about luck and merit are essential drivers of preferences for redistribution. A society demands less redistribution if people believe that economic success mainly depends on talent and effort and that everyone should enjoy the fruits of her work (Alesina and Angeletos, 2005; Alesina et al., 2001; Benabou and Tirole, 2006). Consistent

with this evidence, extensive literature suggests that people demand less redistribution if the source of inequalities is due to merit rather than luck (see e.g. Almås et al., 2020; Cappelen et al., 2007; Gualtieri et al., 2019).

We contribute to this literature by showing that, due to self-serving bias, attractiveness counter-intuitively influences beliefs in meritocracy and preferences for redistribution. Beauty is plausibly due to luck rather than hard work, but we find that good-looking individuals are more willing to believe in individual effort and are less likely to support government redistribution.

The second strand of literature assesses the multiple facets of the economic and social outcomes of beauty, such as wage premia (Doorley and Sierminska, 2015), life time earnings (Scholz and Sicinski, 2015), occupational prestige (Sala et al., 2013), risk taking (Dreber et al., 2013), trust (Andreoni and Petrie, 2008; Póvoa et al., 2020) and happiness (Hamermesh and Abrevaya, 2013).

We add to this literature by showing that attractiveness also affects political preferences.

The rest of the paper proceeds as follows: the next section illustrates the data and the empirical strategy. Section three presents our analysis of the relationship between beauty and preferences for redistribution. In section four, we briefly summarize and discuss our results. Section five concludes.

2 Data and empirical strategy

2.1 Data and main variables

To investigate the relationship between beauty and support for redistribution, we use the German General Social Survey (ALLBUS), a biennial survey representative of the German population. On each wave, a random sample is randomly extracted from the population. Therefore, the cross-sectional nature of the data does not allow us to carry out a panel analysis (Terwey, 2000). From 2008 onward, the ALLBUS survey includes a question on the attractiveness of the interviewed individuals. Hence, we use the cumulative data from 2008 to 2018 (GESIS Leibniz Institut, 2020). For international comparative analysis, the ALLBUS contains questions also asked in the International Social Survey Program (ISSP). Unfortunately, only part of the sample is interviewed on the ISSP module, however these modules are essential for our robustness checks. Specifically, for our robustness checks we will use the ISSP module about leisure and sports of 2008, as it gives access to anthropometric measures, and the ISSP module of 2018 on social networks and social resources.

2.1.1 Preference for redistribution and beliefs about meritocracy

In the survey, individuals are asked to declare how much they agree or disagree about a series of statements. Answers are on a 1-5 or on a 1-4 scale ranging from “agree completely” to “disagree completely”. In order to measure preferences for redistribution,

we use answers to the following statement: “Income and wealth should be redistributed towards ordinary people”. This statement is present in 2008 and 2018 waves.

We also use answers to the following statement: “Income should not be based solely on individual achievement. Instead, everybody should have what they and their family need for a decent life”. This measure is present in the surveys of 2010 and 2014.

Our first measure is very similar to the one in Alesina et al. (2018a). They use data from the European Social Survey where individuals are asked to agree or disagree to the following statement: “The government should take measures to reduce differences in income levels”. These kinds of questions are often used to measure redistributive preferences. For example, Alesina and La Ferrara (2005) use data from the General Social Survey where individuals are asked to agree or disagree on whether “the government should reduce income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor”. Similar questions have been used in other studies on preferences for redistribution such as Gualtieri et al. (2019), Roth and Wohlfart (2018) and Guiso et al. (2006).

With answers to our second measure instead, we can measure beliefs in the role of individual effort. As mentioned in the introduction, the literature shows a well established nexus between beliefs about meritocracy and preferences for redistribution; the more the people believe in individual effort the less they support redistribution. Again, this measure is a good approximation of the one used in literature. For instance, Giuliano and Spilimbergo (2014) use answers to a question asking whether the economic success depends on luck or on individual effort and so do Corneo and Grüner (2002) or Alesina et al. (2018b).

To facilitate the interpretation of results, we re-code the original variable into a dichotomous one that takes value equal to one if the respondent agrees completely or tends to agree with the statement and zero otherwise. Our results are not sensitive to the re-coding of the variable and estimates with the original variable are presented in the appendix (Table A1 and A2).

2.1.2 Attractiveness

The interviews in our sample are all conducted face-to-face. At the beginning and at the end of the questionnaire, interviewers must rate the respondents’ attractiveness without being noticed. The assessment of beauty ranges on a scale from 1 to 11, with 11 meaning the highest level of attractiveness.

In the ALLBUSS survey, the interviewers conduct from a minimum of 1 to a maximum of 134 interviews in one year. Thus, some interviewers might rate more than one person up to a maximum of 134 people. On average an interviewer conducts 29 interviews per year. Additional statistics about the interviewers such as age, education and years within the survey institute can be found in table 1. However, to get rid of all the possible biases arising from the interviewers’ characteristics we control for the interviewer fixed effects in all our regressions.

The assessment of respondents’ beauty makes this data set particularly suitable for

studying the outcomes of beauty¹. We rely on the score at the beginning of the questionnaire since the score at the end of the interview may be influenced by additional factors as Biddle and Hamermesh (1998) point out.

2.1.3 Control Variables

Our measure of beauty might easily suffer from overestimation or underestimation, given the nature of the beauty ranking. For this reason, we include in our regression a broad set of controls. Firstly, we do control for the interviewer fixed effects to get rid of any bias specific to the interviewer. Additionally, we include a set of dummy variables measuring the health status of the respondent. The variable is on a 1-5 scale, where 1 is “very good” and 5 “very bad”.

We also include other indicators concerning the respondent’s subjective condition such as a dummy variable taking a value equal to one if the respondent considers his/her own financial situation “very good” or “good” and zero otherwise², and a variable measuring the individuals’ self-placement on a social scale. This last variable takes on answers to the following question: “In our society there are groups which tend to be towards the top and groups which tend to be towards the bottom. Below is a scale that runs from top to bottom. Thinking of yourself, where would you put yourself on this scale?” Answers to this question are on a 1-10 scale, where 1 means the bottom and 10 the top. Both the indicators of subjective conditions are useful to control for the fact that, in addition to be richer (due to their advantages), attractive people might feel better off and this might induce them to be less favorable to redistribution. In particular, beliefs on perceived social position are key drivers of preferences for redistribution (see e.g. Benabou and Ok, 2001).

We include the usual socio-demographic controls such as age, gender, education, marital status, employment status, household income and a set of dummies measuring regional and year fixed effects to control for the usual factors affecting preferences for redistribution (Alesina and Giuliano, 2011). Moreover, we include a set of dummies measuring the education of respondents’ parents to control for the family background. We also control for political preferences using respondents’ self-assessment of their orientation on a left-right scale where 1 corresponds to far-left and 10 to far-right. Last, we include a set of dummies to control for religious affiliation.

In our robustness checks we employ several additional controls such as the personality traits, the body mass index and self-esteem -as measured through self-assessment of own attractiveness- to further test the validity of our results. We describe these variables in section 3 when discussing our robustness checks. The descriptive statistics of our sample are displayed in Table 1.

[Table 1 here]

¹This data set has been used to show the effect of beauty on several outcomes (see e.g. Doorley and Sierminska, 2015; Oreffice and Quintana-Domeque, 2016; Hamermesh and Abrevaya, 2013).

²The original variable is on a 1-5 scale where 1 corresponds to very good and 5 to very bad.

2.2 Empirical strategy

To assess the probability of supporting redistribution based on an increase of individuals' attractiveness, we estimate the following probit model:

$$P(R_i = 1|Z_i) = \alpha_{1r} + \alpha_{2r}Attractive_i + \alpha_{4r}C_i + \alpha_{5r}D_i + \gamma_i \quad (1)$$

Where R_i is the probability of supporting redistribution, $Attractive_i$ is the variable measuring beauty, C_i is the set of control variables for individual characteristics, and D_i is a set of dummies that capture the district, year and interviewer fixed effects.

When it comes to estimate beauty, it is important to consider the kind of measurement errors that might emerge. Hamermesh and Abrevaya (2013) provide a careful examination of the usual measurement errors that researchers encounter when estimating beauty and synthesize three main type of measurement errors: 1) The beauty rating is affected by the low number of raters. This is considered as a *classical measurement error in the beauty rating* and estimates including this error correspond to the classical case of the errors-in-variables. Hence, this type of measurement error provides a lower-bound estimation. 2) The beauty measure and the outcome measure are observed at different times. This type of measurement error is considered as an *attenuation of the accuracy of the beauty rating*. Since the canons of beauty change over time, the higher the time distance between the assessment of beauty and the outcome of interest, the higher the measurement error. In this case the resulting parameter estimation would be too low. 3) The beauty rating is affected by the prior interaction between the rater and the subject. This type of measurement error is considered a *bias in the beauty rating* and it arises when the judgement's rating might be influenced by self-confidence or other characteristics of the rated individual through the interaction preceding the assessment. This kind of bias might produce either higher or lower estimates depending on the ratio between the classical measurement error and the *bias in the beauty rating*.

Hamermesh and Abrevaya (2013) argue that the measure of beauty in the ALLBUSS survey suffers only from the first measurement error. Luckily, we should be able to get rid of this bias through the inclusion of the interviewer fixed effects. However, we cannot fully neglect the third measurement error. In our survey, the interviewers have to rate participants at the beginning of the interview without being noticed. Nevertheless, we cannot exclude that the interaction needed to set the interviews has an influence on the beauty rate. Since the interviews are conducted face-to-face, the interviewers and the interviewees have to interact to set the interviews and a kinder or an outgoing interviewee might get a higher rate with respect to a shy one. We try to control for this possible bias in our robustness checks with the inclusion of the Big Five personality traits among our controls.

In addition to estimating how beauty relates to preferences for redistribution, we want to understand to what extent this relationship is mediated by other possible observable outcomes of beauty such as household income or subjective financial conditions. To this purpose, we estimate another probit model that includes the mediators as following:

$$P(R_i = 1|Z_i) = \alpha_{1f} + \alpha_{2f}Attractive_i + \alpha_{3f}M_i + \alpha_{4f}C_i + \alpha_{5f}D_i + \gamma_i \quad (2)$$

Where M_i is a set of covariates that correlate with beauty. In the model displayed in equation (1), the coefficient α_{2r} might be capturing the effect of beauty plus other effects that correlate with beauty. The simplest example is the beauty premium. The literature has shown that beautiful people earn more (Bonilla et al., 2019; Mobius and Rosenblat, 2006) and the coefficient α_{2r} might be capturing both the direct effect (if any) that beauty has on preferences for redistribution and the indirect effect -i.e. beauty as a proxy for higher income- that beauty has on preferences for redistribution.

In a linear setting, to get an estimate of the indirect effect it is necessary to measure the difference between the coefficients of the restricted and the full model, i.e. $\alpha_{indirect}$ would be:

$$\alpha_{indirect} = \alpha_{2r} - \alpha_{2f} \quad (3)$$

Nonetheless, since our model is not linear, the simple difference between the coefficients would return biased estimates. In nonlinear binary probability models, the coefficients' estimates depend on a scale parameter, which is a function of the error's standard deviations, i.e. the coefficients and error variance are jointly identified (see e.g. Breen et al., 2013). For this reason, we adopt the calculation proposed by Kohler et al. (2011) that allows us to take into account the specificity of nonlinear models.

3 Results

In this section, we illustrate how beauty relates to preferences for redistribution and beliefs that economic achievements should solely depend on individual efforts. We then analyze the extent to which this relationship is mediated by other factors such as household income or the self-perceived financial situation. Finally, we test the robustness of our results to different specifications.

3.1 Beauty and preferences for redistribution

The results of table 2 suggest that beauty does relate to preferences for redistribution: an increase in the attractiveness score is associated with a decrease in support for redistribution. The model in the first column of table 2 includes a set of basic controls³ and the interviewer, year and regional fixed effects. We then start to run other models adding further controls such as household income (column two), parental background (column three), political orientation and religious denomination (column four) and subjective financial well-being and self-position in the social ladder (column five). As we

³Namely, health status, employment status, age, education and gender.

add the controls our results remain significant at 1 per cent level ($p < 0.01$). Table 3 displays the results concerning our additional dependent variable that proxies beliefs in the role of individual effort. In accordance to what we see in table 2, an increase in attractiveness is negatively associated with the willingness of providing a decent income for all -rather than relying on individual effort. Again, our results are highly significant ($p < 0.01$) in all the model specifications.

[Table 2 and 3 here]

To better gauge the magnitude of our results we plot the predicted probabilities of our dependent variables for each level of attractiveness (from 1 to 11). The predicted probabilities of figure 1 and 2 refer to the model in column five of table 2 and 3 that is the model where we include the highest number of controls. Figure 1 shows that the predicted probability of supporting redistribution for an unattractive individual (rate=1) is .80 and decreases to .63 for an attractive individual (rate=11), meaning that attractive individuals are 21 per cent less willing to support redistribution. Figure 2 shows that the predicted probability of supporting a base income rather than relying on individual effort is .70 for an unattractive subject (rate=1) and .41 for an attractive one (rate=11). In other words, attractive individuals are 41 per cent more willing to believe that income should depend on individual efforts alone.

[Figure 1 and 2 here]

3.2 Mediation Analysis

The previous analysis suggests that beauty relates to preferences for redistribution and beliefs about the role of individual efforts. This relation is probably mediated by some confounding factors. An obvious mediator is income. Attractive individuals earn higher incomes and income is negatively related with preferences for redistribution (Alesina and Giuliano, 2011). When we do not control for income, our measure of beauty might capture the relationship between higher income and preferences for redistribution in addition to the association between beauty and redistributive preferences.

Hence, we now try to understand the direct effect that attractiveness has on preferences for redistribution and the effect that beauty has through a set of mediators, i.e. the indirect effect. We assess the effect of four mediators: household income, education, financial subjective well-being and subjective social position. The reason to include household income among the mediators comes from the extensive economic literature studying the beauty premium in the labor market (see e.g. Bonilla et al., 2019). Some recent studies also suggest that beauty relates to educational attainments (Hamermesh et al., 2019), that is why we include education among our mediators. Last, we include the subjective self-evaluations because beauty might easily affect perceived social position or financial well-being given the fact that attractive people have higher access to the credit (Ravina et al., 2008) and have higher self-confidence (Mobius and Rosenblat, 2006). The analysis of these four mediators helps us also to understand whether the relation between support for redistribution and beauty is mainly mediated by the fact

that good-looking individuals feel rich (measured through subjective statements) or by the fact that they are rich (measured through household income).

The results in table 4 show the coefficients of our regressions. However, what is more compelling to our purpose are the results of tables 5 and 6⁴. Table 5 reports the relative weights of financial well-being, social position, education and household income in explaining the relationship between beauty and support for redistribution. These four mediators explain almost 43 per cent of the relation between attractiveness and redistributive preferences. Most of the indirect effect is explained by the subjective social position (37.13 per cent) and household income (32.35 per cent). Subjective financial well-being explains 24 per cent of the indirect effect, while education only 6 per cent. Table 6 shows that only a quarter of the relation between attractiveness and beliefs in meritocracy is explained by our mediators (24.24 per cent). In this case, the subjective social position explains almost half of the indirect effect (42.52 per cent), household income and subjective financial position have similar contributions (around 28 per cent) to the indirect effect, while education explains a small fraction of the indirect effect (2 per cent).

Overall, this analysis suggests that household income and subjective social position are the biggest mediators when our variable of interest is support for redistribution and that social position plays a major role in the relationship between beauty and beliefs in meritocracy. Strictly speaking, attractive people are less supportive of redistribution also because they feel better-off and not only because they have higher earning possibilities.

[Tables 4, 5 and 6 here]

3.3 Robustness Checks

In this section, we present several robustness checks of our results. To this purpose, we use both our full data set and some specific waves of our data set. In all our basic estimations we control for a set of basic controls, household income, parental background and the year, regional and interviewer fixed effects. We carefully discuss all the additional measures and the data used for each of our robustness check.

3.3.1 Gender Split

An obvious concern of our results is the role played by gender differences. When it comes to preferences for redistribution, the literature has shown differences driven by gender; although recent research suggests that this difference might be explained by overconfidence (see e.g. Buser et al., 2020). In table 7, we split our analysis to check whether gender drives our results. Interestingly, the results of our regressions are very similar in terms of significance and magnitude for both male and females. Attractiveness negatively relates to support for redistribution and support for a decent income for all

⁴To run the mediation analysis we repeat the model of column five in tables 2 and 3, but this time we calculate the contributions of the mediators.

both for males and females. Hence, we can conclude that the relationship between attractiveness and redistributive preferences holds both for males and females.

[Table 7 here]

3.3.2 Germans only

We now try to focus our attention on Germans only, i.e. we drop from our sample all the individuals that have declared to be immigrants. This check has a twofold motivation: 1) As Oreffice and Quintana-Domeque (2016) point out, migrants might relate differently to our measure of attractiveness; 2) migrants and locals preferences for redistribution usually differ. In fact, migrants preferences for redistribution are determined by their country of origin Luttmer and Singhal (2011).

The results in table 8 show that when we drop the migrants, still we see that attractiveness negatively relates with support for redistribution and support for a basic income. Both the correlations are highly significant ($p < 0.01$). This evidence let us conclude that our results cannot be driven by the inclusion (exclusion) of migrants in our sample.

[Table 8 here]

3.3.3 Anthropometric measures

In the ALLBUSS 2008, we have access to some anthropometric measures that are useful for our analysis⁵. We use the body-mass index (BMI) to: 1) get an alternative measure of beauty and 2) understand whether our measure of attractiveness highly depends on anthropometric characteristics.

The results in table 9 show 3 models. In the first model (first column), we follow Hamermesh and Abrevaya (2013) and use BMI as proxy of beauty. As attractiveness, the BMI is related with preferences for redistribution: the higher the BMI the higher the probability of supporting redistribution. In the second model, we include both the BMI and attractiveness as independent variables. Interestingly, the BMI is not significant any more, while attractiveness is ($p < 0.05$). This might suggests that anthropometric measures do not play an autonomous role in addition to attractiveness. It seems that the attractiveness score is not heavily affected by anthropometric measures, i.e. the score of beauty might have been based mainly on facial attractiveness. To better understand whether the attractiveness rate depends on the BMI or not, we run a third model dropping all the individuals that are considered overweight ($BMI > 30$) or underweight ($BMI < 18.5$). As we can see in column 3 of table 9, still attractiveness is significant ($p < 0.05$) and it negatively relates with support for redistribution.

[Table 9 here]

⁵Unfortunately, some of these information are available only for a subset of individuals who have been surveyed on the ISSP module on sport and leisure.

3.3.4 Big Five personality traits

As explained in the section addressing the empirical strategy (section 2.2), our beauty rate might be influenced by measurement errors. According to Hamermesh and Abrevaya (2013) the only measurement error that affects our score of beauty is due to the low number of raters. So far, we did not consider a possible bias of the beauty rate due to the interaction between raters and rated individuals. The rate of beauty is the first thing that the interviewers have to do when the interview starts and the communication done during the interview cannot affect the beauty rating. However, we suspect that the interaction needed to set the interview might also influence the raters' judgments. Since the survey is conducted face-to-face, the interviewee and the interviewers have to interact to set the interview (e.g. they introduce each other). Easily, the personality traits of the interviewee might affect the beauty ranking. An outgoing individual might get a higher ranking with respect to a shy one, irrespective of the physical appearance.

Luckily, the ALLBUS 2008 includes a set of questions to measure the Big Five personality traits, namely extraversion, neuroticism, conscientiousness, openness and agreeableness. People are asked each of the Big Five twice, once in positive terms and once in negative terms (Rammstedt, 2007). For example, to measure openness the survey asks to the respondents whether he/she has active imagination and whether he/she has few artistic interests. Both questions aim to measure the openness trait, but once the question is posed in positive terms and once in negative terms. Respondents may answer on a 1-5 scale with 1 meaning "applies completely" and 5 "does not apply at all". We re-code the answers in negative terms and sum the scores so that the final variable is measured on a 2-10 scale with higher values corresponding to higher intensity of the personality trait.

We first check whether our measure of attractiveness is influenced by the Big Five personality traits. If so, we regress demand for redistribution on attractiveness and the Big Five personality traits. The model in column one of table 10 shows that the Big Five personality traits do influence the attractiveness score. In particular, higher extraversion and openness lead to a higher score in attractiveness even when controlling for broad set of controls. Consequently, our beauty score suffers from both type 1 and type 3 measurement errors illustrated in the previous section. To check whether this bias is driving our results we run a regression of preferences for redistribution on attractiveness and we also control for the Big Five personality traits. Albeit they might have an influence on the beauty score, our main results are not affected by the inclusion of the personality traits as controls. In fact, the results in table 10 show that also when controlling for the Big-Five personality traits attractiveness relates to preferences for redistribution ($p < 0.01$).

[Table 10 here]

3.3.5 Self-esteem and financial prospects

A possible driver of our results might be overconfidence. The literature shows that attractiveness relates with over-confidence (Mobius and Rosenblat, 2006) and that higher

confidence leads to lower support for redistribution (Buser et al., 2020). Unfortunately, we do not have a proper measure of self-confidence. To try to proxy self-confidence we include a set of dummies measuring the respondent financial situation in one year. The original question takes on values from 1 (considerably better) to 5 (considerably worse). We include a dummy for each possible answer our benchmark being “considerably better”. Moreover, in the ALLBUS 2008 respondents are asked to rate their own attractiveness. This variable is measured with the same scale of the one built with the interviewer assessment, but in this case the respondent has to rank his/her own attractiveness.

The results displayed in table 11 show that neither the inclusion of self-esteem nor the inclusion of financial prospects alters our main results.

Albeit we provide only proxies to measure self-confidence, our results seem to suggest that self-confidence cannot fully explain the relationship between beauty and preferences for redistribution.

[Table 11 here]

3.3.6 Alternative dependent variables

We further check our results by using alternative dependent variables to proxy support for redistribution and beliefs that economic achievements should depend solely on individual efforts.

First, we use answers to the following statements included either in ALLBUSS 2010, in ALLBUSS 2014 or in both surveys:

- What one gets in life depends not so much on one’s own efforts, but on the economic situation, the situation on the employment market, wage agreements, and the social benefits provided by the state.
- The state has to make sure that everyone has a job and that prices remain stable, even if the freedom of entrepreneurs has to be curtailed because of this.
- The state must ensure that people can live on a decent income, even in illness, hardship, unemployment and old age.

We also take the advantage of the ISSP module on social networks and social resources collected in 2018, where respondents are asked:

- Differences in income in Germany are too large.
- For a society to be fair, differences in people’s standard of living should be small.
- It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.

In all cases, respondents might agree or disagree with the statements on a 1-5 (in 2018) or on a 1-4 (in 2010 and 2014) scale.

We also use answers to the following question asked in ALLBUSS 2010: If the government had the choice between reducing taxes or spending more on social programs, what do you think it should do? Possible answers are “reduce taxes” and “more social service”.

Most of these questions are good proxies of the measures used in the literature on preferences for redistribution (see e.g. Alesina and La Ferrara, 2005; Fong, 2001; Guiso et al., 2006; Mijs, 2019).

Results are reported in tables 12 and 13. We use an ordered probit model for all the estimations, except for the one with a dichotomous outcome where we use a probit model⁶. All the estimations have the expected sign: attractiveness negatively relates with willingness for redistribution and support for the state intervention in the economy. The probit model is the only one where this association is not statistically significant. Two of the three variables of the ISSP module are weakly significant ($p < 0.10$), while in the remaining 4 models we find a statistically significant correlation ($p < 0.05$; $p < 0.01$).

Overall, our results seem not to be affected by the use of alternative dependent variables.

[Table 12 and 13 here]

3.4 Beauty and party affiliation

As in Giuliano and Spilimbergo (2014), to ensure that our measures of taste for redistribution match the underlying preference, we regress voting behavior on attractiveness. If our measures match the underlying preferences, we should observe that attractiveness relates with voting for parties which are less supportive of redistribution.

The ALLBUS survey asks individuals which party they voted in the last German Federal Elections. The information on voting behavior is present in all the ALLBUS waves with the exception of 2012. We focus our attention on the four major parties during the time span 2008-2018, i.e. the Christian Democratic Union of Germany and the Christian Social Union in Bavaria (CDU-CSU), the Social Democratic Party (SPD), the Free Democratic Party (FDP) and The Greens. Hence, we build a dummy variable that equals one if the respondent has selected one of these parties and zero otherwise.

The results in table 14 suggest that attractiveness is positively related with voting for FDP ($p < 0.05$). We do not find other statistically significant associations. Interestingly, our results match the ones on attractiveness and redistributive preferences. In fact, the FDP is a liberal center-right party proposing a market-oriented economy. It opposes the state intervention in the economy and advocates for a radical tax reduction (Franzmann and Kaiser, 2006).

Our results suggest that preferences for redistribution are channeled through party affiliation. Moreover, our findings are in line with studies showing a relationship between

⁶Due to a small number of observation in some regions, we had to exclude the regional fixed effects to ease the computation of the marginal effects. However, this exclusion does not affect our results. We report the coefficients of the ordered probit models both with and without regional fixed effects in table A3. The results are identical.

beauty or height and conservative voting (Arunachalam and Watson, 2018; Peterson and Palmer, 2017).

[Table 14 here]

4 Discussion

The empirical analysis shows that attractiveness negatively relates to support for redistribution and that attractive individuals are more willing to believe that income achievements should depend on individual efforts alone. These results are corroborated by the analysis on voting preferences. In fact, we show that attractive people are more willing to vote for the Free Democratic Party (FDP), which is a party that proposes a market-oriented economy and it is against government intervention in the economy and taxation (Heinemann and Janeba, 2011).

Berggren et al. (2017) argue that attractive people develop more conservative preferences because, on average, they earn more. However, if good-looking people desire less redistribution just because they earn more, controlling for income should make the effect of beauty disappear. When we include household income in our regressions, the effect of beauty on preferences for redistribution still holds, suggesting that the beauty premium associated with higher earnings can only partially explain our results.

Most likely, our results are driven by the self-serving bias, i.e. people tend to attribute success to their own actions and failure to external factors. Attractiveness improves a huge number of socio-economic outcomes. For example, for any given level of income, beautiful people are viewed as more trustworthy (Wilson and Eckel, 2006) and are more likely to occupy positions of advantage in social networks (O'Connor and Gladstone, 2018). However, good-looking subjects might hardly recognize that part of their success depends on beauty. Deffains et al. (2016) suggest that self-serving bias plays a crucial role in determining preferences for redistribution. The authors show with an experiment that, when failing, people demand redistribution and vice-versa.

Interestingly, the self-serving bias usually arises also when people win lotteries. Doherty et al. (2006) show that winning a lottery makes people less supportive of redistribution, while Somville et al. (2020) show that winners of a housing lottery increasingly believe in meritocracy. If we think of beauty as a manifestation of luck, our results provide support to these findings. In fact, once we control for several factors that might affect our measure of attractiveness such as age, health status, body-mass index, parental background, psychological traits and district of residence, it is plausible that our measure captures the advantages that beauty gives to good-looking people and these advantages are mostly due to the “genetic lottery”.

Our results bridge the cross-disciplinary literature on beauty with economic studies on preferences for redistribution. Most of the literature on preferences for redistribution shows that to believe that luck -rather than merit- determines socio-economic success, leads people to demand more redistribution (Alesina and Angeletos, 2005; Fong, 2001; Piketty, 1995). A recent contribution by Frank (2016) suggests that experienced luck and

beliefs about luck and merit influence each other in a counter-intuitive way. Building on psychological literature, the author argues that people tend to underestimate the role that luck plays in life, attributing most of their success to merit. Our results contribute to this literature by showing that beliefs in individual efforts and support for redistribution might be counter-intuitively affected by personal characteristics that do not depend on individual efforts such as beauty.

A question for further research that naturally comes out of our results is: would attractive people be willing to redistribute more if informed about the advantages they have thanks to beauty? In other words, what happens if people are informed about the role that luck played in determining their success? Would they oppose redistribution?

Thoenig et al. (2020) try to shed light on these issues through an experiment where people are first asked to accomplish a real-effort task. Participants are then asked to choose a level of redistribution. Success and failures to the task are randomly assigned, i.e. to success or to fail the real-effort task does not depend on individual effort. Due to self-serving bias however, those who have success are less willing to redistribute. Informing the subjects about the random allocation of success and failure before the real-effort task is taken makes people more willing to redistribute. The same does not happen for those who are informed after the real-effort task is taken. Hence, the effect of the self-serving bias is only partly mitigated by full information. Most likely, in real life situations it is even more difficult to “debias” redistributive preferences and in the specific case of attractiveness it might be controversial to mitigate a self-serving bias.

Finally, our findings can also contribute to the literature on optimal taxation. Research suggests that redistributive policies in a society depend on the individual support for redistribution (see e.g. Alesina et al., 2004; Guiso et al., 2006) and preferences for redistribution might also be useful to understand which is the best taxation design to apply (Weinzierl, 2017). For example, Mankiw and Weinzierl (2010) use an utilitarian framework to show that taller individuals benefiting from the height premium should redistribute part of their income to shorter ones. The authors’ aim is to raise the issue of whether such policies are feasible or acceptable or not. The evidence of the socio-economic advantages of beauty should lead to a similar conclusion. To tax beauty is obviously controversial and extremely complicated though. Our results suggest that convincing good-looking individuals to pay a “beauty tax” would be hard.

5 Conclusion

Our work provides evidence of a relationship between beauty and preferences for redistribution. We show that an increase in attractiveness is negatively associated with support for redistribution and with beliefs that the economic situation should not be based solely on individual achievement. This relationship is partly mediated by household income, education, subjective financial conditions and subjective social status.

Robustness checks allow us to ascertain that our results seem not to be driven by gender differences, anthropometric characteristics, personality traits or self-confidence. We find that our results are robust also to alternative specifications of the dependent

variables. Last, we find a statistically significant correlation between beauty and voting for the FDP suggesting that preferences for redistribution are channeled through party affiliation. In fact, the FDP is a liberal party that proposes a business-friendly regulation of the economy and opposes taxation.

While extensive research shows that beauty affects several outcomes such as earnings, employment and happiness (see e.g. Hamermesh, 2011; Hamermesh and Abrevaya, 2013), less is known about how beauty might shape people’s preferences. To our knowledge, this is the first attempt to understand the effect of beauty on support for redistribution.

Our results also contribute to the debate on preferences for redistribution. The economic literature focuses its attention on how the beliefs about the role of luck and merit in life shape people’s preferences for redistribution (Alesina and Angeletos, 2005; Piketty, 1995). Less is known about the relation between experienced luck and support for redistribution. We add to this literature by suggesting that beliefs about meritocracy are counter-intuitively influenced by factors that are mostly due to luck, such as beauty. The self-serving bias helps to understand our results. People attribute success to their own merit even if it is a result of luck. This mechanism makes lucky (attractive) people increasingly believe that income should be solely based on individual efforts .

An interesting question for further research is how and if preferences for redistribution would be affected when the self-serving bias is mitigated. In other words, what happen when individuals are informed by the role that luck plays in their life? Does it affect preferences for redistribution? Answering this question beyond the precision of a controlled environment remains both a challenge and an interesting open question for further research because the mechanism with which people think about taxation and form their preferences for redistribution crucially affects policy outcomes (Alesina et al., 2001; Piketty, 1995; Stantcheva, 2020; Weinzierl, 2017).

References

- Alesina, A. and Angeletos, G.-M. (2005). Fairness and redistribution. *American Economic Review*, 95(4):960–980.
- Alesina, A. and Giuliano, P. (2011). Preferences for redistribution. In *Handbook of Social Economics*, volume 1, pages 93–131. Elsevier.
- Alesina, A., Glaeser, E., and Glaeser, E. L. (2004). *Fighting poverty in the US and Europe: A world of difference*. Oxford University Press.
- Alesina, A. and La Ferrara, E. (2005). Preferences for redistribution in the land of opportunities. *Journal of Public Economics*, 89(5-6):897–931.
- Alesina, A., Miano, A., and Stantcheva, S. (2018a). Immigration and redistribution. Technical report, National Bureau of Economic Research.
- Alesina, A., Sacerdote, B., and Glaeser, E. (2001). Why doesn’t the United States have a European-style welfare state? *Brookings Papers on Economic Activity*, (2):187–277.
- Alesina, A., Stantcheva, S., and Teso, E. (2018b). Intergenerational mobility and preferences for redistribution. *American Economic Review*, 108(2):521–54.
- Almås, I., Cappelen, A. W., Sørensen, E. Ø., and Tungodden, B. (2010). Fairness and the development of inequality acceptance. *Science*, 328(5982):1176–1178.
- Almås, I., Cappelen, A. W., and Tungodden, B. (2020). Cutthroat capitalism versus cuddly socialism: Are americans more meritocratic and efficiency-seeking than scandinavians? *Journal of Political Economy*, 128(5):000–000.
- Andreoni, J. and Petrie, R. (2008). Beauty, gender and stereotypes: Evidence from laboratory experiments. *Journal of Economic Psychology*, 29(1):73–93.
- Arunachalam, R. and Watson, S. (2018). Height, income and voting. *British Journal of Political Science*, 48(4):1027–1051.
- Benabou, R. and Ok, E. A. (2001). Social mobility and the demand for redistribution: the poum hypothesis. *The Quarterly Journal of Economics*, 116(2):447–487.
- Benabou, R. and Tirole, J. (2006). Belief in a just world and redistributive politics. *The Quarterly Journal of Economics*, 121(2):699–746.
- Berggren, N., Jordahl, H., and Poutvaara, P. (2017). The right look: Conservative politicians look better and voters reward it. *Journal of Public Economics*, 146:79–86.
- Biddle, J. E. and Hamermesh, D. S. (1998). Beauty, productivity, and discrimination: Lawyers’ looks and lucre. *Journal of Labor Economics*, 16(1):172–201.

- Bonilla, R., Kiraly, F., and Wildman, J. (2019). Beauty premium and marriage premium in search equilibrium: Theory and empirical test. *International Economic Review*, 60(2):851–877.
- Breen, R., Karlson, K. B., and Holm, A. (2013). Total, direct, and indirect effects in logit and probit models. *Sociological Methods & Research*, 42(2):164–191.
- Buser, T., Grimalda, G., Putterman, L., and van der Weele, J. (2020). Overconfidence and gender gaps in redistributive preferences: Cross-country experimental evidence. *Journal of Economic Behavior & Organization*, 178:267–286.
- Bussolo, M., Ferrer-i Carbonell, A., Giolbas, A., and Torre, I. (2019). *I Perceive Therefore I Demand: The Formation of Inequality Perceptions and Demand for Redistribution*. The World Bank.
- Cappelen, A. W., Hole, A. D., Sørensen, E. Ø., and Tungodden, B. (2007). The pluralism of fairness ideals: An experimental approach. *American Economic Review*, 97(3):818–827.
- Corneo, G. and Grüner, H. P. (2002). Individual preferences for political redistribution. *Journal of public Economics*, 83(1):83–107.
- Deffains, B., Espinosa, R., and Thöni, C. (2016). Political self-serving bias and redistribution. *Journal of Public Economics*, 134:67–74.
- Doherty, D., Gerber, A. S., and Green, D. P. (2006). Personal income and attitudes toward redistribution: A study of lottery winners. *Political Psychology*, 27(3):441–458.
- Doorley, K. and Sierminska, E. (2015). Myth or fact? The beauty premium across the wage distribution in germany. *Economics Letters*, 129:29–34.
- Dreber, A., Gerdes, C., and Gränsmark, P. (2013). Beauty queens and battling knights: Risk taking and attractiveness in chess. *Journal of Economic Behavior & Organization*, 90:1–18.
- Fletcher, J. M. and Lehrer, S. F. (2011). Genetic lotteries within families. *Journal of health economics*, 30(4):647–659.
- Fong, C. (2001). Social preferences, self-interest, and the demand for redistribution. *Journal of Public Economics*, 82(2):225–246.
- Frank, R. H. (2016). *Success and luck: Good fortune and the myth of meritocracy*. Princeton University Press.
- Franzmann, S. and Kaiser, A. (2006). Locating political parties in policy space: A reanalysis of party manifesto data. *Party politics*, 12(2):163–188.

- GESIS Leibniz Institut, f. S. (2020). German General Social Survey (ALLBUS) - Cumulation 1980-2018. GESIS Data Archive, Cologne. ZA5276 Data file Version 1.0.0, <https://doi.org/10.4232/1.13483>.
- Giuliano, P. and Spilimbergo, A. (2014). Growing up in a recession. *Review of Economic Studies*, 81(2):787–817.
- Gualtieri, G., Nicolini, M., and Sabatini, F. (2019). Repeated shocks and preferences for redistribution. *Journal of Economic Behavior & Organization*, 167:53–71.
- Guiso, L., Sapienza, P., and Zingales, L. (2006). Does culture affect economic outcomes? *Journal of Economic Perspectives*, 20(2):23–48.
- Hamermesh, D. S. (2006). Changing looks and changing “discrimination”: The beauty of economists. *Economics Letters*, 93(3):405–412.
- Hamermesh, D. S. (2011). *Beauty pays: Why attractive people are more successful*. Princeton University Press.
- Hamermesh, D. S. and Abrevaya, J. (2013). Beauty is the promise of happiness? *European Economic Review*, 64:351–368.
- Hamermesh, D. S., Gordon, R. A., and Crosnoe, R. (2019). O youth and beauty: Children’s looks and children’s cognitive development. Technical report, National Bureau of Economic Research.
- Harper, B. (2000). Beauty, stature and the labour market: A british cohort study. *Oxford Bulletin of Economics and Statistics*, 62:771–800.
- Heinemann, F. and Janeba, E. (2011). Viewing tax policy through party-colored glasses: What german politicians believe. *German Economic Review*, 12(3):286–311.
- Jaeger, B., Slegers, W. W., Evans, A. M., Stel, M., and van Beest, I. (2019). The effects of facial attractiveness and trustworthiness in online peer-to-peer markets. *Journal of Economic Psychology*, 75:102125.
- Kapoor, S. and Maegsan, A. (2019). Having it easy: Discrimination and specialization in the workplace. *Journal of Economic Behavior and Organization*, 166:153–173.
- Kohler, U., Karlson, K. B., and Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *The Stata Journal*, 11(3):420–438.
- Kweon, H., Martschenko, D. O., Harden, K. P., DiPrete, T. A., Koellinger, P. D., et al. (2020). Genetic fortune: Winning or losing education, income, and health. Technical report, Tinbergen Institute.
- Luttmer, E. F. and Singhal, M. (2011). Culture, context, and the taste for redistribution. *American Economic Journal: Economic Policy*, 3(1):157–79.

- Mankiw, N. G. and Weinzierl, M. (2010). The optimal taxation of height: A case study of utilitarian income redistribution. *American Economic Journal: Economic Policy*, 2(1):155–76.
- Meltzer, A. H. and Richard, S. F. (1981). A rational theory of the size of government. *Journal of political Economy*, 89(5):914–927.
- Mijs, J. J. (2019). The paradox of inequality: income inequality and belief in meritocracy go hand in hand. *Socio-Economic Review*, page 39.
- Mobius, M. M. and Rosenblat, T. S. (2006). Why beauty matters. *American Economic Review*, 96(1):222–235.
- O’Connor, K. M. and Gladstone, E. (2018). Beauty and social capital: Being attractive shapes social networks. *Social Networks*, 52:42–47.
- Oreffice, S. and Quintana-Domeque, C. (2016). Beauty, body size and wages: evidence from a unique data set. *Economics & Human Biology*, 22:24–34.
- Peterson, R. D. and Palmer, C. L. (2017). Effects of physical attractiveness on political beliefs. *Politics and the Life Sciences*, 36(2):3–16.
- Piketty, T. (1995). Social mobility and redistributive politics. *The Quarterly Journal of Economics*, 110(3):551–584.
- Póvoa, A. C. S., Pech, W., Viacava, J. J. C., and Schwartz, M. T. (2020). Is the beauty premium accessible to all? An experimental analysis. *Journal of Economic Psychology*, page 102252.
- Powdthavee, N. and Oswald, A. J. (2014). Does money make people right-wing and inequalitarian? a longitudinal study of lottery winners.
- Rammstedt, B. (2007). The 10-item Big Five inventory. *European Journal of Psychological Assessment*, 23(3):193–201.
- Ravina, E. et al. (2008). Love & loans: The effect of beauty and personal characteristics in credit markets. *Journal of Finance*.
- Roth, C. and Wohlfart, J. (2018). Experienced inequality and preferences for redistribution. *Journal of Public Economics*, 167:251–262.
- Sabatini, F., Ventura, M., Yamamura, E., and Zamparelli, L. (2020). Fairness and the unselfish demand for redistribution by taxpayers and welfare recipients. *Southern Economic Journal*, 86(3):971–988.
- Sala, E., Terraneo, M., Lucchini, M., and Knies, G. (2013). Exploring the impact of male and female facial attractiveness on occupational prestige. *Research in Social Stratification and Mobility*, 31:69–81.

- Scholz, J. K. and Sicinski, K. (2015). Facial attractiveness and lifetime earnings: Evidence from a cohort study. *Review of Economics and Statistics*, 97(1):14–28.
- Somville, V., Andersen, A., Franklin, S., Getahun, T., Kotsadam, A., and Villanger, E. (2020). Does wealth reduce support for redistribution? evidence from an ethiopian housing lottery. *NHH Dept. of Economics Discussion Paper*, (18).
- Stantcheva, S. (2020). Understanding tax policy: How do people reason? Technical report, National Bureau of Economic Research.
- Stinebrickner, R., Stinebrickner, T., and Sullivan, P. (2019). Beauty, job tasks, and wages: A new conclusion about employer taste-based discrimination. *Review of Economics and Statistics*, 101(4):602–615.
- Terwey, M. (2000). Allbus: a german general social survey. *Schmollers Jahrbuch*, 120(151):158.
- Thoeni, C., Deffains, B., Espinosa, R., et al. (2020). Debiasing preferences over redistribution: An experiment. Technical report, Université de Lausanne, Faculté des HEC, Département d’économie.
- Weinzierl, M. (2017). Popular acceptance of inequality due to innate brute luck and support for classical benefit-based taxation. *Journal of Public Economics*, 155:54–63.
- Wilson, R. K. and Eckel, C. C. (2006). Judging a book by its cover: Beauty and expectations in the trust game. *Political Research Quarterly*, 59(2):189–202.

Tables and Figures

Table 1: Summary statistics

Variable	Mean	Std. Dev.	N	Year
<i>Preferences for Redistribution (main)</i>				
Income Redistribution (original)	2.21	1.178	6817	2008, 2018
Income Redistribution (recoded)	0.67	0.469	6817	2008, 2018
Decent Income (original)	2.40	0.93	6191	2010, 2014
Decent Income (recoded)	0.52	0.5	6191	2010, 2014
<i>Preferences for Redistribution (alternatives)</i>				
Effort vs State Economy	2.39	0.807	6187	2010, 2014
State Provide Jobs	2.16	0.868	3408	2014
Secure Income in Hardship	1.69	0.754	6239	2010, 2014
Spend More	0.51	0.5	2641	2010
Differences Too Large	1.87	0.855	1669	2018
Fair Soc. if Small Differences	2.40	1.035	1652	2018
Gov. Responsibility	2.29	1.089	1643	2018
<i>Attractiveness</i>				
Attractiveness	7.63	1.918	20214	2008-2018
Attractiveness self-assessment	6.90	1.939	3377	2008
<i>Anthropometric measures</i>				
Height	171.17	9.083	1673	2008
Weight	75.68	15.346	1594	2008
Body-mass index	25.72	4.48	1592	2008
<i>Personality Traits</i>				
Extraversion	6.57	1.84	3321	2008
Neuroticism	6.95	1.766	3325	2008
Conscientiousness	8.25	1.428	3329	2008
Openness	6.94	1.782	3275	2008
Agreeableness	6.48	1.551	3310	2008
<i>Socio-Demographics</i>				
Household income (log)	7.72	0.655	17412	2008-2018
Age	50	17.681	20174	2008-2018
Female	0.5	0.5	20214	2008-2018
Degree	0.15	0.361	20028	2008-2018
Married	0.56	0.497	20193	2008-2018
Employed Full-time	0.44	0.496	20206	2008-2018
<i>Parental Background</i>				
Father Intermediate Education	0.17	0.374	17962	2008-2018
Mother Intermediate Education	0.22	0.413	18745	2008-2018
<i>Subjective Statements</i>				
Very good or good financial situation	0.60	0.489	20188	2008-2018
Social Position	6.16	1.583	19447	2008-2018
Good health	0.40	0.49	18481	2008-2018
<i>Religion and Political Orientation</i>				
Political self-placement	5.03	1.692	18955	2008-2018
No Religious denomination	0.37	0.482	20140	2008-2018
Catholic	0.27	0.444	20140	2008-2018
Protestants (EKD)	0.30	0.456	20140	2008-2018
<i>Past Voting</i>				
CDU-CSU	0.36	0.48	11571	2008, 2012-2018
SPD	0.27	0.446	11571	2008, 2012-2018
FDP	0.08	0.272	11571	2008, 2012-2018
Greens	0.13	0.334	11571	2008, 2012-2018
<i>Interviewer Information</i>				
Interviewer Female	0.45	0.50	20214	2008-2018
Interviewer Age	61	10	20214	2008-2018
Interviewer Tertiary Degree	0.28	0.447	20214	2008-2018
Number of Interviews	29	18	20214	2008-2018
Years with the int. Institute	11	9.681	20180	2008-2018

Table 2: Main Results (1)

	(1)	(2)	(3)	(4)	(5)
	Redistribute Income	Redistribute Income	Redistribute Income	Redistribute Income	Redistribute Income
Attractiveness	-0.028*** (0.004)	-0.021*** (0.005)	-0.021*** (0.005)	-0.021*** (0.006)	-0.017*** (0.006)
Observations	6,608	5,647	4,969	4,662	4,520
Pseudo R-squared	0.103	0.116	0.126	0.146	0.157
Basic Controls	Yes	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Household Income		Yes	Yes	Yes	Yes
Parental Background			Yes	Yes	Yes
Religion and Political Orientation				Yes	Yes
Subjective Financial Position					Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3: Main Results (2)

	(1)	(2)	(3)	(4)	(5)
	Decent Income	Decent Income	Decent Income	Decent Income	Decent Income
Attractiveness	-0.045*** (0.006)	-0.039*** (0.007)	-0.037*** (0.007)	-0.038*** (0.007)	-0.032*** (0.008)
Observations	4,295	3,640	3,196	3,050	2,975
Pseudo R-squared	0.105	0.123	0.128	0.138	0.142
Basic Controls	Yes	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Household Income		Yes	Yes	Yes	Yes
Parental Background			Yes	Yes	Yes
Religion and Political Orientation				Yes	Yes
Subjective Financial Position					Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Figure 1: Redistribute Income

Notes: The Figure displays the predicted probabilities of the model displayed in column five of table 2. The grey area corresponds to the confidence intervals.

Figure 2: Decent Income

Notes: The Figure displays the predicted probabilities of the model displayed in column five of table 3. The grey area corresponds to the confidence intervals.

Table 4: Mediation Analysis

	(1) Redistribute Income	(2) Decent Income
Reduced Model	-0.090*** (0.017)	-0.106*** (0.019)
Full Model	-0.051*** (0.017)	-0.080*** (0.020)
Difference	-0.039*** (0.005)	-0.026*** (0.005)
Observations	4505	2975
Confounding Ratio	1.75	1.33
Confounding Percentage	42.91	24.51

Notes: The table reports the coefficients of a probit equation. The mediators are household income, education, subjective financial situation and subjective social position. The confounding ratio indicates that the total effect in our first (second) model is 1.75 (1.33) times greater than the indirect effect. The confounding percentage indicates that 42.91 (24.51) percent of the total effect in our first (second) model is explained by the mediators. Standard errors are corrected for heteroskedasticity.

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Mediators Contribution (Redistribute Income)

	(1) Coefficient	(2) Standard Error	(3) Percentage indirect effect	(4) Percentage total effect
Financial Situation	-0.009	0.002	24.24	10.40
Social Position	-.014	0.004	37.13	15.93
Degree	-0.002	0.001	6.28	2.70
Household Income	-0.012	0.003	32.35	13.88
Total			100	42.91

Notes: The table reports the specific contribution of each mediators. 42.71 per cent of the total effect is explained by the mediators. Column 2 show the contribution on the indirect effect for each mediator.

Table 6: Mediators Contribution (Decent Income)

	(1) Coefficient	(2) Standard Error	(3) Percentage indirect effect	(4) Percentage total effect
Financial Situation	−0.007	0.003	27.89	6.83
Social Position	−.011	0.004	42.52	10.42
Degree	−0.001	0.001	2.00	0.49
Household Income	−0.007	0.003	27.58	6.76
Total			100	24.51

Notes: The table reports the specific contribution of each mediators. 24.51 per cent of the total effect is explained by the mediators. Column 2 show the contribution on the indirect effect for each mediator.

Table 7: Gender Split

	(1) Redistribute Income (Male)	(2) Decent Income (Male)	(3) Redistribute Income (Female)	(4) Decent Income (Female)
Attractiveness	-0.021** (0.008)	-0.033*** (0.011)	-0.018** (0.008)	-0.037*** (0.011)
Observations	2,402	1,476	2,332	1,467
Pseudo R-squared	0.147	0.150	0.150	0.173
Household Income	Yes	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 8: Germans Only

	(1) Redistribute Income	(2) Decent Income
Attractiveness	-0.024*** (0.006)	-0.042*** (0.008)
Observations	4,233	2,732
Pseudo R-squared	0.134	0.136
Household Income	Yes	Yes
Parental Background	Yes	Yes
Basic Controls	Yes	Yes
Interviewer FE	Yes	Yes
Year FE	Yes	Yes
Region FE	Yes	Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 9: Anthropometric Measures

	(1) Redistribute Income	(2) Redistribute Income	(3) Redistribute Income
Attractiveness		-0.027** (0.012)	-0.029** (0.013)
Body Mass Index	0.009** (0.004)	0.007 (0.004)	
Observations	1,029	1,029	853
Pseudo R-squared	0.183	0.187	0.195
Household Income	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 10: Big Five

	(1) Attractiveness	(2) Redistribute Income
Attractiveness		-0.025*** (0.008)
Extraversion	0.045** (0.020)	
Neuroticism	0.001 (0.020)	
Conscientiousness	-0.010 (0.025)	
Openness	0.129*** (0.019)	
Agreeableness	0.021 (0.022)	
Observations	2,297	2,176
(Pseudo) R-squared	0.517	0.167
Household Income	Yes	Yes
Parental Background	Yes	Yes
Big Five		Yes
Basic Controls	Yes	Yes
Interviewer FE	Yes	Yes
Region FE	Yes	Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 11: Self-Esteem

	(1) Redistribute Income	(2) Decent Income	(3) Redistribute Income
Attractiveness	-0.020*** (0.006)	-0.038*** (0.007)	-0.029*** (0.007)
Self-Rating			-0.003 (0.006)
Observations	4,920	3,155	2,307
Pseudo R-squared	0.130	0.131	0.163
Financial Prospects	Yes	Yes	
Household Income	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes
Year FE	Yes	Yes	
Region FE	Yes	Yes	Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 12: Alternative Dependent Variables (1)

	(1)	(2)	(3)	(4)
	Effort vs State Economy	State Provide Jobs	Secure Income in Hardship	Spend More
Ordered Probit				
Dep. Var. Attractiveness				
Completely Agree	-0.008*** (0.003)	-0.016** (0.007)	-0.022*** (0.007)	
Tend to Agree	-0.008*** (0.003)	-0.003** (0.001)	0.013*** (0.004)	
Tend to Disagree	0.012*** (0.005)	0.013** (0.005)	0.008*** (0.002)	
Completely Disagree	0.004*** (0.001)	0.006** (0.003)	0.001*** (0.001)	
Probit				
Attractiveness				-0.006 (0.008)
Observations	3370	1332	3386	1871
Pseudo R2	0.101	0.129	0.116	0.105
Household Income	Yes	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes
Year FE	Yes		Yes	

Notes: The table reports the average marginal effects of an ordered probit equation in the first three columns. The fourth column reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 13: Alternative Dependent Variables (2)

	(1)	(2)	(3)
	Differences Too Large	Fair Soc. if Small Differences	Gov. Responsibility
Dep. Var. Attractiveness			
Strongly Agree	-0.020* (0.011)	-0.0137** (0.007)	-0.014* (0.008)
Agree	0.010* (0.006)	-0.008** (0.004)	-0.003 (0.002)
Neither	0.007* (0.004)	0.009** (0.005)	0.007* (0.004)
Disagree	0.003* (0.002)	0.010** (0.005)	0.008* (0.004)
Strongly Disagree	0.001 (0.001)	0.002** (0.001)	0.002* (0.001)
Observations	1295	1286	1282
Pseudo R2	0.116	0.100	0.104
Household Income	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes
Region FE	Yes	Yes	Yes

Notes: The table reports the average marginal effects of an ordered probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 14: Voting Behavior

	(1) CDU-CSU	(2) SPD	(3) FDP	(4) The Greens
Attractiveness	-0.002 (0.004)	-0.001 (0.004)	0.006** (0.003)	0.002 (0.003)
Observations	8,221	8,151	6,597	7,402
Pseudo R2	0.085	0.086	0.091	0.136
Household Income	Yes	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Notes: The table reports the average marginal effects of a probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

6 Appendix

Table A1: Main results (1)

	(1)	(2)	(3)	(4)	(5)
	Redistribute Income	Redistribute Income	Redistribute Income	Redistribute Income	Redistribute Income
Attractiveness	0.063*** (0.010)	0.048*** (0.011)	0.048*** (0.012)	0.051*** (0.012)	0.040*** (0.013)
Observations	6,727	5,784	5,098	4,780	4,634
Pseudo R2	0.070	0.077	0.083	0.095	0.103
Basic Controls	Yes	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Household Income		Yes	Yes	Yes	Yes
Parental Background			Yes	Yes	Yes
Religion and Political Orientation				Yes	Yes
Subjective Financial Position					Yes

Notes: The table reports the coefficients of an ordered probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A2: Main results (2)

	(1)	(2)	(3)	(4)	(5)
	Decent Income	Decent Income	Decent Income	Decent Income	Decent Income
Attractiveness	0.111*** (0.012)	0.101*** (0.014)	0.106*** (0.015)	0.112*** (0.016)	0.098*** (0.016)
Observations	4,444	3,794	3,366	3,229	3,156
Pseudo R2	0.075	0.086	0.093	0.101	0.105
Basic Controls	Yes	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes
Household Income		Yes	Yes	Yes	Yes
Parental Background			Yes	Yes	Yes
Religion and Political Orientation				Yes	Yes
Subjective Financial Position					Yes

Notes: The table reports the the coefficients of an ordered probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A3: Alternative Measures (1)

	(1) Effort vs State Economy	(2) State Provide Jobs	(3) Secure Income in Hardship	(4) Effort vs State Economy	(5) State Provide Jobs	(6) Secure Income in Hardship
Attractiveness	0.041*** (0.015)	0.062** (0.025)	0.055*** (0.016)	0.041*** (0.015)	0.062** (0.026)	0.055*** (0.016)
Observations	3,370	1,332	3,386	3,370	1,332	3,386
Pseudo R2	0.101	0.129	0.116	0.102	0.132	0.117
Household Income	Yes	Yes	Yes	Yes	Yes	Yes
Parental Background	Yes	Yes	Yes	Yes	Yes	Yes
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Interviewer FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes		Yes	Yes		Yes
Region FE				Yes	Yes	Yes

Notes: The table reports the average the coefficients of an ordered probit equation. Basic controls are health status, employment status, age, education and gender. Standard errors are corrected for heteroskedasticity.
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

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