Justifying Income In-Equality (or not): Does Subjective Well-being matter?

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Abstract:
In the empirical literature, the relationship between income inequality and subjective well-being has been extensively studied. What is missing from the literature is an understanding as to how subjective well-being affects the justifiability of income inequality. This understanding, however, is highly relevant to policy decision-making. For example, egalitarian preferences or lack of it may have a significant impact on tax and redistribution policies. Using a survey dataset covering more than 330,000 observations for over 90 countries and spanning from 1981 to 2014 in six waves, we find that as subjective well-being increases, individuals are more likely to agree with the presence of income differences. This supports theoretical findings in the literature of belief in a just world, self-enhancement bias and the tunnel effect. Individuals might believe everyone gets what they deserve (belief in a just world), having perceptions of their state to be rosier than what it is (self-enhancement bias) and, thus, wanting such conditions to persist or tolerate inequality in the hope for advancement in the future (tunnel effect). Our benchmark results consist of probit fixed effect estimates. We take into account endogeneity concerns that may arise due to reverse causality, non-random sample selection or simultaneity bias by also considering instrumental-variable and inverse probability regressions adjustment models. Our main finding – higher levels of subjective well-being lead to less egalitarian attitudes – is robust to these approaches.

Keywords: *justifiability of income inequality; subjective wellbeing; individual level data; belief in just world; panel data; identification*

JEL Classification: O11; I130; Z10

1. Introduction

In the empirical literature, the relationship between income inequality and subjective well-being has been extensively studied. Some of these studies suggest that inequality may increase life satisfaction and happiness (e.g., Tomes, 1986; Hagerty 2000; Clark 2003; Alesina et.al., 2004), while others find that the opposite holds true (e.g., Schwarze and Härpfer, 2002; Graham and Pettinato, 2002; Fahey and Smyth, 2004; O'Connell, 2004; Graham and Felton, 2005; Verme, 2011)[1].

What is missing from the literature is an understanding as to how subjective well-being affects the justifiability of income inequality. This is an important research question as values held by individuals and how they perceive the world, e.g., with respect to income inequality, are likely to have strong economic, social and policy repercussions (Hochschild, 2001; Aalberg, 2003; Bénabou and Tirole, 2006). For instance, egalitarian (anti-egalitarian preferences) on individual and collective level may result in higher (lower) levels of taxation and redistribution (Bénabou and Tirole, 2006).

Consequently, in this research contribution, we ask whether individuals are more or less likely to justify the presence of income inequality when their subjective well-being rises. We develop two conflicting hypotheses regarding the relationship between subjective well-being and income inequality. For one, we argue that increases in subjective well-being result in less justification of income inequality (i.e., more egalitarian preferences), e.g., because high levels of individual life satisfaction allow for more compassionate ("moral") altruistic behavior. For another, it is also possible that higher levels of subjective well-being make it more attractive to rationalize income inequality (so that preferences become less egalitarian), e.g., because

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[1] [1] For a survey of the literature, see Ferrer-i-Carbonell and Ramos(2014).

individual life satisfaction amplifies personal beliefs in a just world that are consequently also translated to the social context. Individuals can also justify the presence of higher inequality due to self-enhancement bias portraying their conditions to be rosier than what it is and, thus, wanting the conditions to persist.

To the best of our knowledge, we are the first to explore the relationship between subjective well-being and preferences about the distribution of income (rather than objective measures of income inequality). We consider there different measures of subjective well-being – satisfaction with one's financial situation, satisfaction with one's job and life satisfaction – to analyze its impact on inequality preferences, using a survey dataset covering more than 330,000 observations for over 90 countries and spanning from 1981 to 2014 in six waves.

To preview our main results, using a probit fixed-effect model which takes into account time-invariant country characteristics as well as time-specific shocks as a baseline model, we find that as subjective well-being increases, individuals are more likely to agree with the presence of larger income differences. This finding holds true for all measures of well-being, with the magnitude of impact remaining relatively similar across various specifications. Accounting for potential endogeneity and sample selection concerns, we also employ instrumental-variable (IV) probit and inverse probability weights regression adjustment (IPWRA) approaches. Our results remain robust to applying these alternative econometric approaches.

The rest of this paper is organized as follows. In Section 2 we discuss in more detail the potential nexus between inequality, inequality aversion and life satisfaction, developing two testable hypotheses. The data used in the paper is described in Section 3. In Section 4, we present our empirical models. Benchmark results and robustness checks are presented in Sections 5 and 6, respectively. Section 7 concludes.

2. Theoretical Considerations

2.1. Inequality Dislike

In general, human beings tend to dislike inequality (e.g., Dawson et al., 2007; Ferrer-i-Carbonell and Ramos, 2014). For one, this argument is rooted in self-interest; for another, it is rooted in altruism, i.e., regard for others (e.g., Ferrer-i-Carbonell and Ramos, 2014).

First, the inequality of a country's income distribution may signal one's future position on the economic ladder, particularly with respect to the prospect of experiencing a negative income shock (e.g., due to unemployment or illness). In other words, the distribution of income can be regarded as a measure of future risk of socio-economic descent. Most human beings are risk-averse (e.g., Pratt, 1964; Arrow, 1965). Consequently, they will also be inequality-adverse because inequality is closely associated with risk (of losing one's economic position in the future)[2]. This in turn shapes their attitude towards inequality. Out of the interest of avoiding a future position lower on the economic ladder, self-interested and risk-averse individuals are expected to dislike inequality (e.g., Ferrer-i-Carbonell and Ramos, 2014).

Second, humans are social being, so that they do not only act out of self-interest but also out of regard for others (altruism). From an evolutionary perspective, this regard for others can be explained by the social nature of human beings whose survival strongly depends on cooperation (e.g., with respect to the dependence of children on their families especially during early childhood). The same evolutionary perspective also creates an intimate relationship between inequality and inequality dislike. There is evidence in favor of egalitarian preferences in humans because of persistent resource scarcity (which was the norm in human evolution)

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[2] By contrast, for a risk-loving individual inequality would signal future opportunities (of experiencing an improvement of one's economic position) rather than future risk.

creating selective pressure for behavior that promotes cooperation and reciprocity (e.g., Dawson et al., 2007). Consequently, as social beings, individuals are expected to respond negatively to inequality even when this inequality rather concerns other human beings.

2.2. Life Satisfaction and Inequality Aversion

How can individual life satisfaction or subject wellbeing affect inequality dislike? For one, it is possible that it further fuels inequality dislike. When personal conditions (as expressed in life satisfaction) are sound, individuals are likely to have more (mental and material) resources available to consider the well-being of others. For instance, this is in accordance with studies stating that individuals in wealthier countries might have more resources, time and moral obligations to reflect on issues of poverty and inequality (Inglehart, 1990; 1977; Beja, 2011; Rözer and Kraaykamp, 2012). As such increased regard for others implies – as discussed above – a stronger influence of egalitarian preferences, personally satisfied individuals may more strongly favor a more equal distribution of income that would primarily benefit other human beings.

For another, it is also possible that high levels of individual life satisfaction allow individuals to rationalize income inequality. Amongst others, the literature suggests that individuals are more likely to favor inequality due to the following effects.

(1) Belief in a Just World (BJW). BJW is the "nearly universal human tendency to want to believe that people generally get what they deserve" (Bénabou and Tirole, 2006: 705; Lerner, 1980; Furnham, 2003). According to BJW, good things happen to good people and vice versa. Based on this perception, individuals can rationalize an unequal distribution of income by attributing "good" traits (e.g., being hard-working, talented and devoted) to the rich (e.g., Kay et al., 2007; Lerner, 1980; Walster, et al., 1978) and "bad" traits (e.g., being lazy and talentless) to the poor, therefore blaming the latter for their societal position (Furnham, 2003).

Arguably, if individual satisfaction with life is high, the individual is more likely to adhere to BJW (Correira et al., 2009). That is, BJW can be interpreted as a strategic way of justifying personal success as indicated by high levels of life satisfaction (Correira et al., 2009). We consequently expect this personal justification strategy to also matter to the social context. Analogous to how an individual rationalizes individual differences in life satisfaction by appealing to BJW, they will also rationalize income inequality at the social level, therefore moving away from the "natural state" of egalitarian preferences.

(2) Tunnel Effect. According to Hirschman and Rothschild (1973: 552), individuals may derive utility from the advances of others (which can be observed in a widening income distribution) due to a strictly expectational calculus. Individuals tolerate inequality because they expect to also economically advance in the future; however, the same individuals will become less tolerant of inequality over time when their conditions do not improve sufficiently (Hirschman and Rothschild, 1973)[3].

As argued by Hirschman and Rothschild (1973: 545), an "individual's welfare depends on [the] present state of contentment [life satisfaction], as well as on […] expected future contentment". Consequently, when individual conditions are (already) sound in the present (so that life satisfaction is high and present-day welfare is more or less maximized), total individual welfare can only increase further when there is potential for future growth in life satisfaction in the fashion of the tunnel effect. This is expected to lead to a situation where satisfied individuals are more likely to tolerate inequality than their less satisfied counterparts.

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[3] The "tunnel effect" has its name from an analogy in Hirschman and Rothschild (1973: 545). Suppose there is a traffic jam in a tunnel. Here, individuals are tolerant of the traffic moving only in the other lane (implying inequality in advancing through the tunnel) because they expect the jam to also clear in their own lane (implying expectations about the future where they also benefit); however, if the jam does not clear in their own lane, this will lower gratification from the advances of drivers in the other lane.

(3) Self-Enhancement Bias. Self-enhancement bias exists when individuals perceive their position to be rosier relative to others (Alicke, 1985; Guenther & Alicke, 2010). Thus, with rise in subjective wellbeing, the bias is likely to amplify. Individuals are more likely to hold on to their belief and, thus, justify the presence of greater income inequality.

2.3. Hypotheses

Human beings tend to be inequality-averse. This can be explained by appealing to rational self-interest as well as altruistic behavior due to human evolution. This "natural state" of egalitarian preferences can be amplified by high levels of individual life satisfaction, e.g., as they facilitate compassionate altruistic behavior. Therefore, our first hypothesis is as follows:

H1: Higher levels of individual life satisfaction are associated with more egalitarian preferences.

Conversely, one may also argue that high levels of individual life satisfaction allow individuals to rationalize income inequality, e.g., by amplifying individual beliefs in a just world that are translated to the social context. Thus, our alternative hypothesis is as follows:

H2: Higher levels of individual life satisfaction are associated with less egalitarian preferences.

3. Data

3.1. Data Source

All data for the paper comes from World Value Survey (WVS) database[4]. An extensive number of studies has used the survey. A few examples are Tabellini (2010), Johnson and Mislin (2012), Helliwell and Huang (2008) and Bruni and Stanca (2006).

The survey has been conducted in over 100 countries, comprising of about 90% of the

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[4] The data can be found here: http://www.worldvaluessurvey.org/WVSContents.jsp

world's population, from 1981 to 2014 (six survey waves). Along with the questions on beliefs, values and opinions about social, economic and political issues, the survey also includes information about demographics (sex, age, education etc.) and self-reported economic characteristics (income, social class etc.) of individual survey respondents.

For our analysis, we include data from all waves. Consequently, our panel dataset is unbalanced in terms of countries as well as individual-level responses. This is because the survey has expanded both in terms of the number of interviewees as well as countries in more recent waves. For instance, while the first wave conducted between 1981 and 1984 accounts for three percent of the total sample size (of approximately 341,000 observations), most recent included wave (2010-2014) accounts for about 25.3 percent of the sample.

3.2. Income Inequality Perceptions

Our main dependent variable of interest is based on a question in the survey that asks respondents to justify the presence of income inequality. Specifically, the question is part of a subset of questions that ask the following "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between". The specific question on income inequality has a value of 1 corresponding to "Incomes should be made more equal" while 10 denotes "We need larger income differences". For our benchmark set of regressions, we construct a dummy that takes the value 1 if respondents completely agree with the statement on the right - we need larger income differences; 0 otherwise. About 14 percent of respondents completely agree to this statement. Table 1 presents the summary statistics of our main variables of interest.

[Insert Table 1 about here]

As an alternate dependent variable, we construct a dummy which takes the value 1 when respondents answer with a 10 (completely agree with the statement on right), 9, 8 or 7. Thus, on the scale of 1 to 10, the dummy takes the value 1 when respondents reply with a number higher than 6; otherwise the dummy takes the value 0. About 41 percent of the sample respond with a number higher than 6 suggesting that these respondents mostly agree that we need larger income differences. Figure 1 plots the mean of the dummy across a particular measure of subjective wellbeing - satisfaction with financial situation. For the scores 1 to 10, we plot the mean of the income inequality dummy. As we see from the figure, a general upward trend can be noticed suggesting as financial satisfaction rises, more individuals agree with larger income differences. We also employ the measure ranging from 1 to 10 for alternate specifications.

[Figure 1 about here]

3.3. Variables Measuring Well Being

We select three different measures of subjective well-being from the WVS, indicating individual satisfaction with one's financial situation, job situation and life as a whole.

To operationalize one's financial satisfaction, we consider survey question in "How satisfied are you with the financial situation of your household?" The respondents can respond with any number from 1 to 10, with 1 representing completely dissatisfaction and 10 denoting complete satisfaction. Based on the data, we find that about 8.9 percent of the sample is completely dissatisfied with their financial situation, whereas 7.9 percent are completely satisfied. Almost 16 percent respond with a '5', suggesting most people in our sample have an average satisfaction concerning their financial situation. We create a dummy that takes the value 1 if respondents are 'completely satisfied' with their financial satisfied; 0 otherwise. As an alternate dependent variable, similar to income inequality measure, we construct a dummy taking on the value 1 when respondents reply with a figure above 6. For this dummy variable,

the mean is approximately 39 percent. In Figure 2, we consider the mean of the dummy over the various waves. As we can see from Figure 2, for the first wave, the mean is above 50 percent. However, the mean drops over time over the waves 1989-1993 and 1994-1998, before it starts rising thereafter; for the most recent wave (2010-2014), the mean surpasses 40 percent.

[Figure 2 about here]

As another measure of well-being, we consider satisfaction over one's life. The question asked is very similar to that concerning one's financial satisfaction. Specifically, the survey asks "All things considered, how satisfied are you with your life as a whole these days?" The variable also ranges from 1 to 10, similar to the other subjective well-being variables. Again, we construct a dummy that takes the 1 if respondents are 'completely satisfied' with life. About 13 percent of people reply that they are completely satisfied with life. For the alternate dummy variable which takes the value 1 for responses higher than 6 on the scale of 1 to 10, the mean is almost 55 percent.

The final measure of well-being that we consider is job satisfaction. Similar to the other variables, it asks individuals about their level of job satisfaction; they can respond on a 1 to 10 scale (from total dissatisfaction to total satisfaction). The constructed dummy variables behave very similar to the other ones. For instance, mean of the dummy variable representing complete job satisfaction is exceptionally low (less than 1 percent). To consider different operationalizations of the well-being measures, similar to income inequality measure, we also consider all the variables ranging from 1 to 10 for alternate specifications.

3.4. Control variables

As mentioned earlier, to the best of our knowledge, this is the first cross-country studying exploring determinants of income inequality perceptions among individuals. So we do not have any study to replicate in terms of controls but we considered related literature in our choice of

control variables. One such variable we consider is age of individuals. Alesina, Di Tella and MacCulloch (2004) consider explore determinants of happiness across US and Europe and consider age of respondents to be a determinant. Just as age should affect 'happiness' of individuals, it should also affect perceptions about crucial global issues like income inequality. Age cohorts growing up in different era amid varying extent of globalization, international mobility and technology diffusion will tend to form different perceptions. The mean age for our sample is about 40 with a high standard deviation of almost 17.

Likewise, following Alesina, Di Tella and MacCulloch (2004) and Schneider (2012), we control for educational attainment of individuals. Using a representative sample from German population, Schneider (2012) explores structural in the perceptions of income inequality and control for education. We construct an ordered dummy variable that ranges from 0 to 8. The different categories considered are not completed elementary education, completed elementary education, not completed secondary education (technical and vocational type), completed secondary education (technical and vocational type), not completed secondary education (university-preparatory type), completed secondary education (university-preparatory type), incomplete university education and completed university education. The mean is around 4 for our sample.

Class is considered as yet another control variable following Alesina, Di Tella and MacCulloch (2004). We consider two separate dummy variables – an upper class dummy and a lower class dummy. A dummy for upper class takes the value 1 if an individual belongs to the upper class; 0 otherwise. Based on the categories in WVS database, 0 can imply belong to the upper middle class, working class, lower middle class or lower class. Likewise, the dummy indicating lower class means similar. Finally, we consider a dummy indicating town size of respondents' home of residence. The dummy takes the value 1 if individual resides in a town

with population more than 500 thousand, 0 otherwise. Bigger cities can theoretically affect income inequality perceptions in both positive and negative ways. Since big cities bring in people from all different backgrounds and countries, the greater exposure might make individuals value each other more and, thus, not justify the presence of higher income inequality. On the other hand, since living in a city is extremely competitive in multiple ways (getting a job, housing issues and so on), individuals might value hard work more and, thus, might like income inequality to persist.

4. Empirical Methodology

4.1. Probit Fixed Effects Model

Our benchmark results are from a probit fixed-effect model (Baltagi, 2008). An extensive literature has employed this estimation framework when facing a binary dependent variable (e.g., Swamy et.al., 2001; Piesse and Webster, 2018). We use this model because when analyzing a dichotomous (limited) dependent variable, an ordinary least square (OLS) approach will suffer from challenges like predicted probabilities lying outside the unit interval and so on.

Our empirical model estimated with the maximum-likelihood probit estimator looks as follows

$$\text{Inc.}\,\text{Inq.}_{ict} = \beta_0 + \beta_1 \text{Well Being}_{ict} + \sum_{k=1}^{K} \alpha_k\, X_{kict} + \gamma_i + \theta_t + \epsilon_{it} \qquad (1)$$

$\text{Inc.}\,\text{Inq.}_{ict}$ represents the dummy taking the value 1 when individuals completely agree with the presence of large income differences; 0 otherwise. 'i' stands for individual, 'c' for country and 't' for time (survey wave). Well Being_{ict} denotes the different measures of well-being considered as described in the data section. X_{kict} is the matrix of control variables. γ_i stands for country fixed effect and θ_t for time fixed effect. Country fixed effects help us to take into

account time-invariant country characteristics like ethnic diversity and colonial origins which may affect income inequality perceptions. Time shocks are taken into account via the wave fixed-effects. As the literature has pointed out potential bias that can affect average coefficients in the probit model when fixed effects are used, we report marginal coefficients[5] (see Webster and Piesse, 2018; Fernández-Val, 2009; Greene, 2004).

4.2. Endogeneity

While probit fixed effect model help us overcome some of the basic panel data challenges involving binary variables, it does not properly account for endogeneity. For our analysis, a major source of endogeneity is feedback or reverse causality between income inequality perceptions and well-being measures. For instance, subjective well-being may not only determine individual support for belief in a just world, but the opposite may also be true; that is, individuals who strongly adhere to beliefs in a just world are consequently more likely to become satisfied with life (e.g., Correia et al., 2009).

We attempt to account for endogeneity concerns via two alternative estimation strategies, an instrumental-variable and an inverse probability weighted regression adjustment approach.

4.2.1. Instrumental Variables Probit Model

Following Webster and Piesse (2018), we estimate an instrumental-variable probit model. The first challenge we run into is finding truly exogenous instruments. We need instruments that are correlated to the endogenous variable(s) and uncorrelated with the error term. It would not be hard to assume that very few variables can affect perceptions like well-being but be uncorrelated with income inequality perceptions. Below we describe the

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[5] We use the *dprobit* command from Stata to estimate marginal impacts (df/dx)

instruments we employ. Although we check the validity of the instruments with all possible tests, we do maintain caution with respect to our IV estimation and employ other estimation models to establish identification.

While the literature does not agree on this unanimously, many studies use the terms happiness, life satisfaction and well-being interchangeably (Ferry, 2008; Veenhoven, 2007, 2012; Griffin, 2007). We rely on determinants of well-being and happiness to find credible instruments. One such instrument is self-reported health status of respondents. Studies have found strong associations between well-being of individuals and their self-assessed state of health (Carletto and Zezza, 2006; Gerdtham and Johannesson, 2001; Veenhoven, 1996). While health status should directly affect one's well-being, there is no reason to believe that should be related to perceived notion about income inequality of respondents. Studies exploring cross country determinants of happiness show that among many factors, social life matters for happiness levels of individuals (Borooah, 2006). So we use a dummy indicating if individuals think friends are very important in one's life or not as another instrument. As another indicator of social life, we consider if neighbors of respondents are drug addicts or not. Again, none of these variables should affect individual's views about income inequality. We also use a dummy indicating if respondents have a child or not as yet another instrument. The final instrument we use is the importance of obedience as a quality in children. Obedience has been shown to be important in the economic development literature (Tabellini, 2010) since it can imply less risk taking among individuals. Accordingly, it should affect well-being measures. While reasonably it should affect income inequality perceptions, we find obedience to be insignificant when we include it as a control in our regression model. Further the correlation between the dependent variable and obedience is less than 0.05 and not significant. We use different combinations of these instruments to make sure our results are robust.

We run IV probit with a twostep estimator. As Woolridge (2010) mentions, this allows for both a maximum likelihood estimation as well as a two step one. We test for Wald test of exogeneity to check for weak instruments. For the IV probit to work, the variables instrumented need to be continuous. Thus, we consider well-being measures indicating satisfaction ranging on a 1 to 10 scale with 1 indicating complete dissatisfaction and 10 indicating complete satisfaction.

4.2.2. Inverse probability weighted regression adjustment (IPWRA)

While we do consider all tests to make sure our instruments are valid, we still maintain caution with our IV probit results. This is because as mentioned earlier, the exogeneity of the instruments in theoretical terms is challenging since most variables that affect well-being should also affect income inequality perceptions. Endogeneity can arise from our variables of interest being simultaneously determined. As Mallick and Yang (2013) point out that endogeneity arising out of selection bias can be resolved via propensity score matching. It is not possible to observe the same individual in two different scenarios – having satisfaction with respect to life, financial situation and job or not. Via propensity score matching we can create a counter factual that implies having individuals with similar characteristics on all respects expect the well-being aspect. Probability Weighted Regression Adjustment (IPWRA) estimation works similar to propensity score matching models but allows us to explicitly models treatment effects as endogenous variables (see Piesse and Webster, 2018). As Piesse and Webster mention, IPWRA's main attraction is its property of double robustness. According to Hirano, Imbens and Ridder (2013), the main implication of double robustness is that either the treatment or the outcome model have to be correctly specified for the estimator to produce consistent treatment effects. Thus, IPWRA will produce lower bias relative to estimates generated from other models if provided either the model of the treatment or the model of the

outcome is correctly specified the model.

IPWRA uses three steps in its estimation procedure. First propensity scores are estimated for the treatment model. Estimating a series of regressions is involved in the second step. The inverse of the estimated propensity scores are used as weights on covariates as well as treatment dummies. The third and final step involves computing the ATT effect which is the difference in the weighted averages of the predicted outcomes (Woolridge, 2010). As Emsle, Lunt, Pickles and Dunn (2008) point out, the reported standard errors are Huber/ White/sandwich type that take into account the estimates are computed in a three-step approach.

5. Benchmark Results

Our probit fixed effect estimates are reported in Tables 2A, 2B and 2C. The different measures of well-being are considered in the three tables. Results with financial satisfaction are reported in Table 2A. Table 2B reports the results with job satisfaction. Finally, in Table 2C, we report the results with life satisfaction. For all three tables, the considered dependent variables are binary variables indicating complete satisfaction with financial, job or life. Likewise, the dependent variable is binary with 1 indicating complete agreement with supporting larger income differences. The marginal effects are reported in each table. As we find from Table 2A, the coefficient of financial satisfaction is positive and significant for all the specifications at the 1% level. In terms of marginal effect, if individuals are completely satisfied with their financial situation, then it increases the likelihood of justifying the presence of larger income differences strongly by about 1%. Our results are therefore in line with H2. For instance, our results support the tunnel effect theory to some extent (Hirschman and Rothschild, 1973) that indicates a positive relationship between income inequality and subjective well-being.

[Insert Table 2A about here]

In Table 2B, we consider the second measure of well-being, job satisfaction. Our results are very similar to Table 2A. The coefficient of job satisfaction is positive and significant at the 1% level across all the specifications. The marginal effect is slightly stronger compared to Table 2A. When individuals are completely satisfied with their job situation, it is about 1.5% more likely that they will justify the presence of greater income differences.

[Insert Table 2B about here]

Finally, in Table 2C, we consider the last measure of well-being. The considered measure, as stated, is a dummy stating if individuals are completely satisfied with their lives; 0 otherwise. The results are very similar to the other two measures.

[Insert Table 2C about here]

Considering the controls, our findings are very similar across the different models presented in Tables 2A[6] to 2C. We find that higher educational attainment makes individuals justify the presence of income inequality. For instance, this may imply that higher educational attainment and the opportunities it bring (e.g., with respect to high-income employment) can install the value of hard work in individuals. Thus, their sense of achievement can make them justify with the presence of income inequality. As expected, belonging to upper class makes individuals justify income inequality. Belonging to the lower class has the opposite impact.

Both our dependent and independent variables of interest can be somewhat restrictive. We consider the extreme cases when individuals are completely satisfied with life, job or their financial situation. Likewise, we consider the dependent variable to be binary as well. In Table 3, we consider both our dependent and independent variables of interest in continuous forms. Income inequality perception varies from 1 to 10 with 1 indicating individuals agreeing to

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[6] Many studies have suggested that ordinary least squares can work as efficient in the context of limited dependent variable models. Thus, we check results presented in Tables 2A, 2B and 2C with OLS. The results stay robust.

income should be made more equal and 10 the opposite. Likewise, all measures of subjective wellbeing varies from 1 to 10 with 1 indicating dissatisfied with financial situation, job or life and 10 the opposite. In columns (4) to (6), we present results with binary variables but they all take the value 1 if the score on the scale of 1 to 10 is higher than 6. The idea is to check our results for different operationalizations of our variables of interest and see if they stay robust.

[Insert Table 3 about here]

We find that our results do stay robust. All measures of subjective wellbeing are positive and significant for all the alternate specifications conforming to our benchmark findings.

6. Robustness

6.1. IV-Estimates

The major part of our robustness analysis is to account for endogeneity. We start with describing results from IV probit estimates. The results are reported in Tables 4A and 4B. We consider two measures in the tables – financial satisfaction and life satisfaction. Table 4A presents the first stage results while Table 4B presents the second stage estimates. As evident from the F-statistics of both first stage results, there is explanatory power for the instruments. As Stock, Wright and Yogo (2002) suggest, F statistic should exceed 10 for inference based on the 2SLS estimator in the presence of at least 1 endogenous regressor. Both values of R square and adjusted R square also indicate the strength of instruments. Columns (1) to (3) consider financial satisfaction as the endogenous regressor. The endogenous regressor considered in Columns (4) to (6) is life satisfaction. As indicated, we consider health, importance of friends, having one child, obedience and presence of neighbors who are drug addicts as the instruments. We find instruments are mostly significant from the first stage results. They are used in different combinations in the columns to ensure further robustness of our findings. Being in a good health, having a kid, or considering friends to be important in life should enhance well-

being individuals. Being satisfied with the financial situation is an indicator of well-being and, thus, as indicated by the first stage results, the coefficients of the variables are positive and significant. Interestingly, having neighbors who are drug addicts also correlates positively with financial satisfaction. Obedience is also positively related. Considering obedience as an important quality in a child can be indicative of respecting family values and, thus, can involve being in jobs with lower income volatility. Thus, such individuals can tend to be happy with their financial situation. Likewise, the instruments are also strongly correlated with life satisfaction. We also report the chi-square for Wald test of exogeneity for all specifications.

[Insert Table 4A about here]

[Insert Table 4B about here]

Both measures of well-being are positive and significant conforming our benchmark findings. People with greater life or financial satisfaction justify presence of greater inequality. Our results align with the findings in the literature that indicate a positive association between income inequality and subjective well-being. This can be due to the tunnel effect or BJW beliefs. The controls mostly retain their sign and significance. The p-value for Wald test of exogeneity is significant for all our specifications suggesting that the null hypothesis of no endogeneity is rejected. Since the test statistic is significant, we have sufficient information to reject the null and thus, a regular probit regression is not appropriate.

6.2. Endogeneity due to Sample Selection Bias – IPWRA estimates

Our next set of robustness analysis consist of presenting inverse probability weighted regression adjustment (IPWRA) estimates. As mentioned earlier, one of the main criteria of conducting a successful causal analysis is to have estimation of the effect of subjective well-being of the entire population on perceptions about income inequality. But we do not observe the entire population – the same individual cannot be satisfied and not satisfied with her

financial situation for example. Thus, we have a problem of endogenous sample selection. To take into account such bias, we resort to various techniques like propensity score matching and inverse probability weights regression.

There can be measurable differences in the control and treatment group. For our case, the treatment group is the one including individuals satisfied with financial situation or their jobs or their lives. It is very plausible that individuals with certain characteristics like age, sex, or ethnicity are more likely to be in the treatment group than in the control group. Thus, we could up-weight such individuals who were placed in the control group and should have been ideally in the treatment group. The opposite is true when we down-weight individuals.

As mentioned earlier, IPWRA use the estimated inverse-probability weights to fit weighted regression models of the outcome for each treatment level. Accordingly, each treatment-specific predicted outcomes. The differences of the computed means of the treatment-specific predicted outcomes give the estimates of the ATEs (STATA, 2019). Both IPW and IPWRA use weights to estimate corrected regression coefficients. Due to the double robust property, estimates of the effects will be consistent if either the treatment model or the outcome model – but not both – are mis-specified.

The results are presented in Table 5 for the financial satisfaction measure. In Table 5, we present the average treatments effect (ATE)s of being financially satisfied on perceptions about income inequality. Similar to our benchmark specifications, we stick to a probit model. The model is used to predict treatment effect as a function of educational attainment, belonging to the upper class, belonging to the lower class and townsize. A probit model is employed. The covariates in the outcome model and the treatment model do not have to be the same. In our case, they are since we believe the covariates do influence both models. In Table 5A, we present the average treatment effect (ATE) and estimate potential-outcome (PO) means. ATE is

[Insert Table 5 here]

is the average differences of means between the perception about fairness of larger income differences when individuals are highly satisfied with their financial situation versus individuals who are not. We find the difference to be approximately 1%. We can estimate PO means for both the untreated and treated groups and the ATE will be the difference in the means. We present PO means for both groups. Keeping space constraint in mind, we do not report the regression adjustment (RA) coefficients for both the treated and untreated groups but they are available on request. The results with life satisfaction are presented in Table 6. We do not report the results for job satisfaction but they are available on request. As we see from Table 6, the results are very similar. Based on the PO means, we find that it is 0.38 for non-treated group, that is, when individuals are not completely satisfied with their lives or not satisfied at all. The PO means for the treated group is about 0.44. Thus, the ATE is again approximately about 1%. Individuals who completely agree with their life satisfaction are 1% more likely to justify presence of income differences compared to individuals who are in the non-treated group.

[Insert Table 6 about here]

Finally, we also run the augment IPW (AIPW) estimator. AIPW adds a bias correction term to the IPW estimator. In case the treatment model is correctly specified, then the bias correction term is 0 and then AIPW estimator is just reduced to the IPW estimator. But when the treatment model is correctly specified, then the bias correction term corrects the estimator. Our results remain robust. We do not report the findings keeping space constraint in mind but they are available on request.

6.3. Exploring channel that can affect the well-being and fairness perceptions about income inequality

Our final set of robustness analysis consist of exploring our relationship through a channel that can potentially affect the same. As we see in the IV results (Table 4B), trust has a negative and significant effect on income inequality perception suggesting that greater trust triggers moral obligations among individuals and, thus, do not justify the presence of greater income differences. This is not surprising given that there is extensive evidence of income inequality leading to less social trust, co-operation, civic engagement, social mobility and cohesion, educational attainment, people's state of happiness, health and life expectancy ((Bjørnskov, 2012; Neville, 2012; Paskov and Dewilde, 2012; Pryor, 2012; Park and Subramanian, 2012; Cozzolino, 2011; Oishi et al., 2011; Wilkinson and Pickett, 2010; Oshio and Kobayashi, 2010; Fuller-Thomson and Gadalla, 2008; Gustavsson and Jordahl, 2008; Coburn, 2000). Yet, the evidence on the macro level is more ambiguous.

Greater trust can, thus, affect the subjective well-being and, thus, individual's fairness perceptions about income inequality. Greater trust can affect BJW perceptions of well-being about individuals by affecting their values and sense of moral obligations. As individuals start trusting others, they may not justify presence of income inequality when their subjective well-being rises. We interact trust with measures of subjective well-being and re-run the IV probit[7] specifications. We do not report the results keeping space constraint in mind but they are available on request. Our results show that while the coefficient of subjective well-being measures are still positive and significant, the interaction term, well-being*trust, is negative and significant. Thus, with greater trust, while individuals with high life satisfaction still justify presence of larger income differences, the impact is lesser. We demonstrate these in Table 7

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[7] For both specifications, we use the instruments health status, child, friends and drugs. We try our results with alternate set of instruments similar to our previous results and results stay robust.

via marginal estimates. We present $\frac{\delta\text{Inc.Inq.}_{ict}}{\delta Wellbeing_{ict}} = \beta_1 + \beta_4 Trust_{ict}$ for different values of

Trust, 0 and 1. In Table 7A, we present the results for financial satisfaction and in Table 7B,

[Insert Table 7A and 7B about here]

the results are presented for life satisfaction. When Trust = 0, then for individuals with complete

financial satisfaction, the probability of justifying the presence of large income differences go

up by about 0.08%. But when trust = 1, the probability goes down to 0.02%. For life satisfaction

measure, the probability goes down from 0.07% to 0.04%.

7. Conclusion

Human beings tend to be inequality-averse, not least due to their evolutionary heritage. Still,

we not only observe noticeable levels of income inequality (as well as other forms of

inequality) across the globe but also rationalizations of income inequality on the individual

level (with individuals justifying income inequality) that run counter to the "natural state" of

egalitarian preferences.

In this research contribution, we ask to what extent subjective well-being can account

for the justifiability of income inequality. We ask whether individuals are more likely to accept

more income inequality when they are personally satisfied with their financial and job situation

and their life. Using a survey dataset covering more than 330,000 observations for over 90

countries and spanning from 1981 to 2014 in six waves, our empirical results show that as

subjective well-being increases, individuals are more likely to agree with the presence of larger

income differences. Importantly, this result remains robust to different operationalizations of

subjective well-being as well as alternative econometric approaches that adequately account

for endogeneity and sample selection concerns. We argue that higher levels of subjective well-

being make it more attractive to rationalize income inequality (so that preferences become less egalitarian), e.g., because individual life satisfaction amplifies personal beliefs in a just world that are consequently also translated to the social context.

Individual perceptions about income inequality are likely to have policy consequences. For instance, greater tolerance of income inequality due to higher levels of subjective well-being is likely to result in less generous redistributive systems (e.g., Bénabou and Tirole, 2006). Consequently, future research is necessary to further examine potential linkages between subjective well-being, inequality perceptions and subsequent policy choices.

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Figure 1: Mean of Income Inequality Perceptions across countries
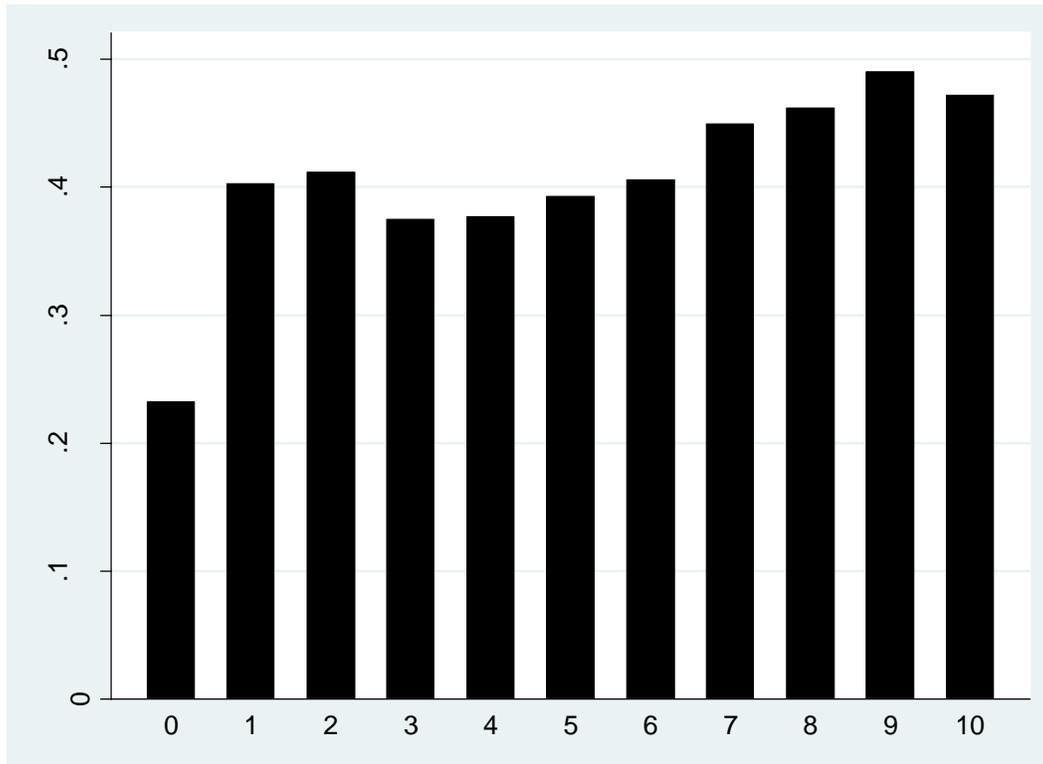
Note: We plot mean of the income inequality dummy across all scores of financial satisfaction. We consider the mean of dummy that takes the value 1 when respondents answer with a 10 (completely agree with the statement on right), 9, 8 or 7.

Figure 2: Mean of Financial Satisfaction over time periods
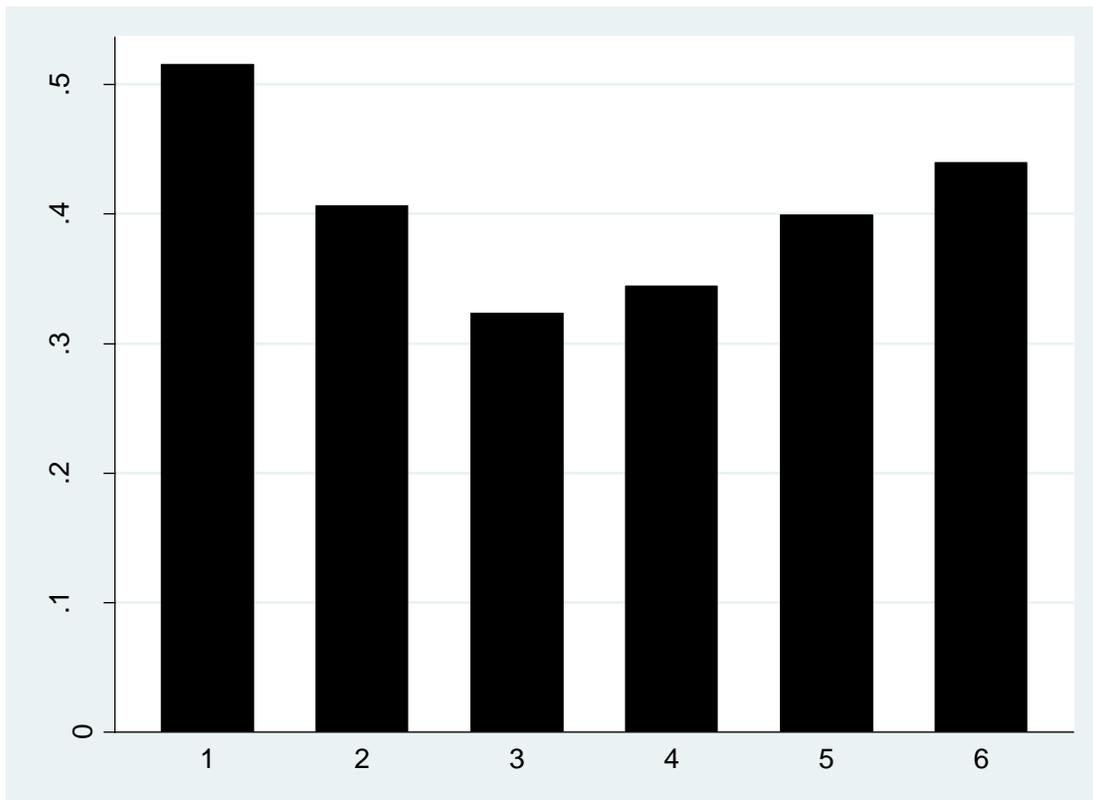
Note 1: The variable considered is satisfaction about one's financial situation. We consider the mean of dummy over time that takes the value 1 when respondents answer with a 10 (completely agree with the statement on right), 9, 8 or 7.

Note 2: The periods 1, 2, 3,4, 5 and 6 refer to the waves 1981-84, 1990-94, 1995-98,1999-04, 2005-09 and 2010-14

Table 1: **Summary Statistics**: Income measures are based on the question …"*Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between*". *Inc. dummy_1* takes the value 1 if respondents completely agree with the statement on the right - *we need larger income differences*; 0 otherwise. *Inc. dummy_2* takes the value 1 when the score is higher than 6. *Inc. Var.* ranges from 1 to 10. *Life. Sat. dummy_1* takes the value 1 if individuals are completely satisfied with their life. *Life. Sat. dummy_2* takes the value 1 if individuals respond with a score greater than 6. *Life sat.* ranges from 1 to 10. *Fin. Sat. dummy_1* takes the value 1 if individuals are completely satisfied with their financial situation. *Fin. Sat. dummy_2* takes the value 1 if individuals respond with a score greater than 6. *Fin. sat.* ranges from 1 to 10. *Job. Sat. dummy_1* takes the value 1 if individuals are completely satisfied with their job. *Job. Sat. dummy_2* takes the value 1 if individuals respond with a score greater than 6. *Job sat.* ranges from 1 to 10. *Edu attain* signifies the education attainment of the individual starting from no education to university degree. We considered an ordered dummy variable. The other variables are age, town size, if belonging to upper class or not and if belonging to lower class or not.

Variable	Obs	Mean	Std. Dev.	Min	Max
Inc. dummy_1	341271	0.1	0.3	0	1
Inc. dummy_2	341271	0.4	0.5	0	1
Inc. var	341271	5.3	3.3	1	10
Life. Sat. dummy_1	341271	0.1	0.3	0	1
Job. Sat dummy_1	341271	0.0	0.1	0	1
Fin. Sat. dummy_1	341271	0.1	0.3	0	1
Life sat.	341271	6.5	2.6	1	10
Job sat.	341271	0.3	1.5	1	10
Fin sat.	341271	5.5	2.7	1	10
Fin. Sat. dummy_2	341271	0.4	0.5	0	1
Life. Sat. dummy_2	341271	0.6	0.5	0	1
Job. Sat dummy_2	341271	0.0	0.2	0	1
Edu attain	341271	4.1	2.6	0	8
Age	341271	40.2	16.8	0	99
Town size (>500k)	341271	0.1	0.3	0	1
Upperclass	341271	0.0	0.1	0	1
lowerclass	341271	0.1	0.3	0	1

Table 2A: Income Inequality Perceptions and Financial Satisfaction

Probit specifications with robust standard errors clustered at the country level. Dependent variable: A dummy variable assessing individual's perceptions about income inequality. The variables is constructed based on the specific question asked…"*Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between*". The dummy takes the value 1 if respondents completely agree with the statement on the right - *we need larger income differences*; 0 otherwise. *Fin. Sat* is a dummy taking the value 1 if individuals are completely satisfied with their financial situation; 0 otherwise. *Edu attain* signifies the education attainment of the individual starting from no education to university degree. We considered an ordered dummy variable. The other variables are age, town size, if belonging to upper class or not and if belonging to lower class or not. We control for country and wave fixed effects. *** p<0.01, ** p<0.05, * p<0.1

	(1)	(2)	(3)	(4)	(5)
Fin. Sat.	0.52***	0.52***	0.52***	0.52***	0.51***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Edu attain		0.017***	0.016***	0.015***	0.014***
		(0.004)	(0.0046)	(0.00459)	(0.00466)
Age			-0.0005	-0.000519	-0.0005
			(0.0004)	(0.0004)	(0.0004)
Town size (>500k)				0.0346	0.0340
				(0.0380)	(0.0381)
Upper class					0.10**
					(0.041)
Lower class					-0.033**
					(0.016)
Country F.E.	Yes	Yes	Yes	Yes	Yes
Time F.E.	Yes	Yes	Yes	Yes	Yes
Constant	-1.51***	-1.59***	-1.57***	-1.56***	-1.56***
	(0.080)	(0.079)	(0.077)	(0.075)	(0.075)
Observations	330,964	330,964	330,964	330,964	330,964
$\dfrac{\delta Inc.Inq._{ict}}{\delta Fin.Sat._{ict}}$	0.12	0.128	0.128	0.128	0.13

Table 2B: Income Inequality Perceptions and Job Satisfaction

Probit specifications with robust standard errors clustered at the country level. Dependent variable: A dummy variable assessing individual's perceptions about income inequality. The variables is constructed based on the specific question asked…"*Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between*". The dummy takes the value 1 if respondents completely agree with the statement on the right - *we need larger income differences*; 0 otherwise. *Job. Sat* is a dummy taking the value 1 if individuals are completely satisfied with their job; 0 otherwise. *Edu attain* signifies the education attainment of the individual starting from no education to university degree. We considered an ordered dummy variable. The other variables are age, town size, if belonging to upper class or not and if belonging to lower class or not. We control for country and wave fixed effects. *** p<0.01, ** p<0.05, * p<0.1

	(1)	(2)	(3)	(4)	(5)
Job sat.	0.49***	0.49***	0.49***	0.49***	0.49***
	(0.054)	(0.055)	(0.055)	(0.055)	(0.054)
Edu attain		0.017***	0.016***	0.016***	0.014***
		(0.00465)	(0.004)	(0.004)	(0.004)
Age			-0.0001	-0.000202	-0.0001
			(0.0004)	(0.000449)	(0.0004)
Town size (>500k)				0.032	0.031
				(0.038)	(0.038)
Upper class					0.17***
					(0.039)
Lower class					-0.051***
					(0.016)
Country F.E.	Yes	Yes	Yes	Yes	Yes
Time F.E.	Yes	Yes	Yes	Yes	Yes
Constant	-1.48***	-1.56***	-1.55***	-1.55***	-1.54***
	(0.080)	(0.080)	(0.075)	(0.074)	(0.074)
Observations	330,964	330,964	330,964	330,964	330,964
$\frac{\delta Inc.Inq._{ict}}{\delta Job\,Sat._{ict}}$	0.15	0.149	0.149	0.149	0.15

Table 2C: Income Inequality Perceptions and Life Satisfaction

Probit specifications with robust standard errors clustered at the country level. Dependent variable: A dummy variable assessing individual's perceptions about income inequality. The variables is constructed based on the specific question asked…"*Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between*". The dummy takes the value 1 if respondents completely agree with the statement on the right - *we need larger income differences*; 0 otherwise. *Life. Sat* is a dummy taking the value 1 if individuals are completely satisfied with their lives; 0 otherwise. *Edu attain* signifies the education attainment of the individual starting from no education to university degree. We considered an ordered dummy variable. The other variables are age, town size, if belonging to upper class or not and if belonging to lower class or not. We control for country and wave fixed effects. *** p<0.01, ** p<0.05, * p<0.1

	(1)	(2)	(3)	(4)	(5)
Life. Sat.	0.49***	0.49***	0.49***	0.49***	0.49***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Edu attain		0.019***	0.018***	0.018***	0.017***
		(0.0043)	(0.0046)	(0.0045)	(0.0046)
Age			-0.0004	-0.0004	-0.0004
			(0.0004)	(0.0004)	(0.0004)
Town size (>500k)				0.043	0.0429
				(0.037)	(0.037)
Upper class					0.110***
					(0.039)
Lower class					-0.028*
					(0.017)
Country F.E.	Yes	Yes	Yes	Yes	Yes
Time F.E.	Yes	Yes	Yes	Yes	Yes
Constant	-1.53***	-1.63***	-1.60***	-1.60***	-1.60***
	(0.079)	(0.078)	(0.074)	(0.073)	(0.073)
Observations	330,964	330,964	330,964	330,964	330,964
$\dfrac{\delta Inc.Inq._{ict}}{\delta Life\ Sat._{ict}}$	0.12	0.12	0.12	0.12	0.12

Table 3: Income Inequality Perceptions and Subjective Wellbeing – alternate measures
OLS specifications for Columns (1) – (3) and Probit specifications for columns (4) – (6). We consider robust standard errors clustered at the country level. Dependent variable for columns (1) – (3): A variable ranging from 1 to 10 with higher numbers indicating individuals agreeing with the presence of higher income inequality. Dependent variable for columns (4) – (6): A dummy variable assessing individual's perceptions about income inequality and taking the value 1 when scores are higher than 6. Subjective wellbeing measures (Fin Sat., Life Sat., and Job Sat.) ranges from 1 to 10 in columns (1) to (3) with higher numbers indicating greater satisfaction. In columns (4) to (6), they are binary variables taking the value 1 if scores are greater than 6. We control for country and wave fixed effects. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

	(1)	(2)	(3)	(4)	(5)	(6)
Fin sat.	0.131***			0.260***		
	(0.0202)			(0.0217)		
Edu attain	0.109***	0.124***	0.117***	0.0371***	0.0416***	0.0386***
	(0.0143)	(0.0161)	(0.0158)	(0.00473)	(0.00499)	(0.00491)
X003	-0.00526***	-0.00488***	-0.00456***	-0.00112**	-0.00100*	-0.000839*
	(0.00131)	(0.00143)	(0.00135)	(0.000498)	(0.000529)	(0.000501)
Town size (>50k)	0.158	0.177	0.186	0.0485	0.0507	0.0532
	(0.114)	(0.127)	(0.123)	(0.0379)	(0.0406)	(0.0390)
Upper class	0.247**	0.367***	0.295***	0.110***	0.154***	0.126***
	(0.105)	(0.0902)	(0.0946)	(0.0357)	(0.0329)	(0.0342)
Lower class	-0.278***	-0.438***	-0.325***	-0.104***	-0.144***	-0.107***
	(0.0729)	(0.0702)	(0.0691)	(0.0220)	(0.0217)	(0.0216)
Job sat.		0.0749**			0.241***	
		(0.0345)			(0.0827)	
Life sat.			0.108***			0.233***
			(0.0142)			(0.0179)
Country F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Time F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Constant	4.569***	5.240***	4.520***	-0.558***	-0.487***	-0.614***
	(0.192)	(0.218)	(0.196)	(0.0684)	(0.0689)	(0.0664)
Observations	341,271	341,271	341,271	330,964	330,964	330,964
R-squared	0.187	0.177	0.183	--	---	---
$\frac{\delta Inc.Inq._{ict}}{\delta Sub.Wellbeing._{ict}}$	0.13	0.07	0.11	0.07	0.17	0.06

Table 4A: IV Probit First Stage Results: Income Inequality Perceptions and Subjective Wellbeing

First Stage Results; In Columns (1) to (3), we instrument financial satisfaction and in columns (4) to (6), we instrument life satisfaction. *Fin. Sat* is a variable varying from 1 to 10 with 1 denoting complete financial dissatisfaction and 10 representing complete satisfaction. *Life Sat.* is defined accordingly. *The instruments used are: if a person responds being in very good or fair health or not, if an individual has a child or not, if an individual considers friends important or not, if a respondent has drug addicts as neighbors or not and if a person considers obedience to be an important quality in children.* We only report the exogenous instruments. We control for country and wave fixed effects. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

	Financial Satisfaction			Life Satisfaction		
	(1)	(2)	(3)	(4)	(5)	(6)
Health	0.8930***	0.8935***	---	0.9175***	0.9193***	----
	(0.0097)	(0.0097)		(0.0090)	(0.0090)	
Child	0.0263***	0.0263***	0.02687***	-0.0197***	-0.0198***	-0.0193***
	(0.0121)	(0.0121)	(0.0122)	(0.0012)	(0.0112)	(0.0114)
Friends	0.2574***	0.2579***	0.3008***	0.2133***	0.2149***	0.2591***
	(0.0089)	(0.0089)	(0.009)	(0.0083)	(0.0083)	(0.0094)
Drugs	0.1123***	0.1116***	0.1346***	0.1583***	0.1559***	0.1796***
	(0.0103)	(0.0103)	(0.0104)	(0.0086)	(0.0096)	(0.0097)
Obedience	----	0.0337***	0.0210***	---	0.1145***	0.1013***
		(0.0093)	(0.009)		(0.0086)	(0.0087)
Observations	330,964	330,964	330,964	330,964	330,964	330,964
Wald test of exogeneity (chi-sq.)	59.62***	59.67***	111.7***	30.42***	29.62***	88.58***
Instruments	Health, child, friends, drugs	Health, child, friends, drugs, obedience	child, friends, drugs, obedience	Health, child, friends, drugs	Health, child, friends, drugs, obedience	child, friends, drugs, obedience
F stat	790.49***	783.70***	698.20***	816.74***	811.54***	705.52***
Adj. R-sq.	0.21	0.21	0.19	0.22	0.22	0.19

Table 4B: IV Probit Estimates Income Inequality Perceptions and Subjective Well-being
Two Step Probit specifications; Dependent variable: A dummy variable assessing individual's perceptions about income inequality. The variables is constructed based on the specific question asked…"*Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between*". The dummy takes the value 1 if respondents completely agree with the statement on the right - *we need larger income differences*; 0 otherwise. The considered SJW measures are financial satisfaction and life satisfaction. *Fin. Sat* is a variable varying from 1 to 10 with 1 denoting complete financial dissatisfaction and 10 representing complete satisfaction. *Life Sat.* is defined accordingly. In Columns (1) to (3), we instrument financial satisfaction and in columns (4) to (6), we instrument life satisfaction. *Edu attain* signifies the education attainment of the individual starting from no education to university degree. We considered an ordered dummy variable. The other variables are age, town size, if belonging to upper class or not and if belonging to lower class or not. We control for country and wave fixed effects. *** p<0.01, ** p<0.05, * p<0.1

	Financial Satisfaction			Life Satisfaction		
	(1)	(2)	(3)	(4)	(5)	(6)
SJW	0.0696***	0.0696***	0.212***	0.0669***	0.0661***	0.207***
	(0.00671)	(0.00670)	(0.0191)	(0.00660)	(0.00655)	(0.0193)
Edu attain	0.00755***	0.00755***	-0.008***	0.0111***	0.0111***	0.00163
	(0.00151)	(0.00151)	(0.00260)	(0.00136)	(0.00136)	(0.00186)
Age	-0.000202	-0.000202	-0.0005***	0.000170	0.000168	0.000647***
	(0.000191)	(0.000191)	(0.000203)	(0.000191)	(0.000191)	(0.000206)
Town (>500k)	0.0197**	0.0197**	-0.00566	0.0356***	0.0355***	0.0431***
	(0.00885)	(0.00885)	(0.00975)	(0.00877)	(0.00877)	(0.00909)
Upper class	0.114***	0.114***	-0.0141	0.132***	0.132***	0.0384
	(0.0221)	(0.0221)	(0.0281)	(0.0217)	(0.0217)	(0.0254)
Lower class	0.0328***	0.0328***	0.207***	0.0169	0.0162	0.163***
	(0.0124)	(0.0124)	(0.0254)	(0.0116)	(0.0116)	(0.0223)
Trust	-0.121***	-0.121***	-0.165***	-0.121***	-0.121***	-0.168***
	(0.00738)	(0.00738)	(0.00944)	(0.00741)	(0.00740)	(0.00969)
Constant	-1.890***	-1.890***	-2.608***	-1.978***	-1.973***	-2.897***
	(0.0703)	(0.0703)	(0.116)	(0.0752)	(0.0750)	(0.141)
Observations	330,964	330,964	330,964	330,964	330,964	330,964
Wald test of exogeneity (chi-sq.)	59.62	59.67***	111.7***	30.42	29.62	88.58
Instruments	Health, child, friends, drugs	Health, child, friends, drugs, obedience	child, friends, drugs, obedience	Health, child, friends, drugs	Health, child, friends, drugs, obedience	child, friends, drugs, obedience

Table 5: IPWRA: Income Inequality Perceptions and Financial Satisfaction

The binary dependent variable is income inequality perception dummy taking the value 1 when scores are higher than 6. Financial satisfaction is also a dummy variable taking the value 1 if score is greater than 6. The treatment group consists of the financial satisfaction dummy being equal to 1. The control group consists of the financial dummy to be 0.

ATE_ high vs. low fin. sat. (1 vs. 0)	0.069***
	(0.002)
PO_means:	
Treatment group	0.4579***
	(0.001)
Control group	0.3881***
	(0.001)

Table 6: IPWRA: Income Inequality Perceptions and Life Satisfaction

The binary dependent variable is income inequality perception dummy taking the value 1 when scores are higher than 6. Life satisfaction is also a dummy variable taking the value 1 if score is greater than 6. The treatment group consists of the life satisfaction dummy being equal to 1. The control group consists of the life dummy to be 0.

ATE_ high vs. low life. sat. (1 vs. 0)	0.046***
	(0.002)
PO_means:	
Treatment group	0.4358***
	(0.001)
Control group	0.3893***
	(0.001)

Table 7: Marginal Impacts – Income Inequality Perceptions, Subjective Well-being and Trust

Table 7A: In Table 7A, we estimate $\frac{\delta Inc.Inq._{ict}}{\delta Wellbeing_{ict}} = \beta_1 + \beta_4 Trust_{ict}$ at values of Trust = 0 and Trust = 1. The considered measure of well-being is ***Financial Satisfaction***

$\dfrac{\delta Inc.Inq._{ict}}{\delta Wellbeing_{ict}}$	Trust = 0	Trust = 1
	0.08***	0.03***
	(0.008)	(0.002)

Table 7B: In Table 7B, we estimate $\frac{\delta Inc.Inq._{ict}}{\delta Wellbeing_{ict}} = \beta_1 + \beta_4 Trust_{ict}$ at values of Trust = 0 and Trust = 1. The considered measure of well-being is ***Life Satisfaction***

$\dfrac{\delta Inc.Inq._{ict}}{\delta Wellbeing_{ict}}$	Trust = 0	Trust = 1
	0.07***	0.04***
	(0.008)	(0.001)