INEQUALITY AND WELLBEING

The impact of income inequality on the wellbeing of individuals in Europe

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Abstract

This study finds that income inequality affects negatively the wellbeing of the individuals in Europe. We discuss the different factors that could determine inequality attitudes and then we estimate their effect on inequality aversion. We compare the results obtained with the theoretical framework. There are mainly two ways through which inequality can affect individual's wellbeing: directly, because the individual dislikes inequality *per se*, and indirectly, for self-interest reasons or for relative concerns.

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1. INTRODUCTION

In our world today, more than 63 million children do not have access to primary education.[1] This happens because there exists inequality of opportunity, which together with inequality of effort constitute income inequality (Marrero and Rodríguez, 2013). This study explores the different attitudes of individuals towards income inequality, which are key to understand their preferences for redistribution. Indeed, these preferences can shape public policy through voting mechanisms and consequently promote new measures aimed to adjust the level of income inequality to the desired one.

This research focuses on the relationship between income inequality in European countries and the utility of the individuals living in that country, which is measured by subjective wellbeing or happiness. For the matter of simplicity, it is assumed that preferences for equality and preferences for redistribution act as perfect substitutes (Ferrer-i-Carbonell and Ramos, 2014).

The principal aim of this essay is to determine whether or not the impact of inequality on individuals' wellbeing is positive or negative and why. The estimation of the impact of inequality on utility is often found to be negative, which is the case of Europeans (Ferrer-i-Carbonell and Ramos, 2014). In this study, we consider this negative impact as a way of measuring inequality aversion. Hence, the hypothesis is that Europeans are inequality averse. In order to verify that, we will construct an econometric model with subjective wellbeing as the independent variable and income inequality as one of the dependent variables. Then, we will also use a model to estimate which are the most important factors that determine preferences for redistribution of the individuals.

The paper is structured as follows. Section 2 identifies and compares the ways through which inequality can affect individuals according to the experts in the field. Section 3 contains a detailed description of the methodology used to study this relationship. Section 4 describes the database used to estimate the models. Section 5 analyses the empirical findings and compares the results with the previously revised literature. Finally, section 6 concludes and raises points for future research.

[1] This data is obtained from the UNESCO database and it is the most recent data, from 2016.

2. THEORETICAL FRAMEWORK

Recently, there has been a sharp increase in the amount of research concerning this possible effect of inequality on utility. To classify the different explanations given by the authors in a simple manner we consider ways through which there is an indirect effect on utility and others ways through which the effect is direct.

2.1 Indirect ways:

In this section we explore different reasons that help to explain how changes in inequality could account for changes in the utility of individuals indirectly. In section 2.1.1 there are arguments concerning self-interest reasons, and in section 2.1.2 the arguments are based upon relative concerns.

2.1.1 Self-interest reasons

It is argued that preferences for equality come from self-interest reasons. In this case, the individual does not care about inequality *per se*, but about some other variables affected by inequality. Imagine that individuals just care about their own utility and to simplify assume it depends only on consumption. Not only do they consider the level of consumption in this period but also the one in the future (Alesina and Giuliano, 2009). This is reflected by the utility function in equation 1.

$$u_i = u(c_{i1}, c_{i2}, \dots, c_{iT-1}, c_{iT}) \quad (1)$$

Where u_i is the utility of the individual i, and *c* is the consumption that goes from period 1 to period T which is the last period the individual consumes. Suppose that an increase in inequality reduces the consumption of a particular household, probably it would have a negative impact on his or her utility. The same logic applies in the opposite case. Thus, individuals could have inequality aversion if consumption and inequality are negatively related (Ferrer-i-Carbonell and Ramos, 2014). This under the assumption that consumption and wellbeing are positively related although some authors found evidence that money not always buys happiness.[2]

[2] According to a study mentioned by Clark and d'Ambrosio (2013) volunteering causes happiness.

The fact that preferences for redistribution are correlated with future outcomes is what Bernabou and Ok (2001) defined as "prospect of upward mobility'' (POUM) hypothesis. "*People who have little or nothing to lose from an economic shock should like inequality, because it signals the possibility of better outcomes if a shock occurs.*" (Ferrer-i-Carbonell and Ramos, 2014). As they conclude for transition economies, at the beginning of a rapid development, societies tend to be more tolerant with inequality because they perceive it as an opportunity to move up in the income ladder. However, after a while they realize that social mobility is declining and their preferences for equality can change. This implies that the level of social mobility in an economy plays an important role on determining the indirect effect of inequality on utility.[3] Nevertheless, in the same economy with the same social mobility two individuals can perceive it differently. For example, as Clark and Ambrosio (2013) observe, individuals who have had a larger variety of incomes over time perceive a higher social mobility and they tend to have more positive correlation between income inequality and utility than other individuals with a less mobile income over time. This powerfully suggests that subjective perceptions about social mobility matters when estimating preferences for redistribution.

As it is not easy to know exactly which is the effect that inequality could cause on consumption or income, individuals can be influenced by their risk aversion. "*Linking inequality with worse outcomes leads to low tolerance for inequality, whereas relating it to enhanced opportunities leads to accepting inequality more easily*." (Ferrer-i-Carbonell and Ramos, 2014). Thus, the more risk averse the individuals are, the more inequality averse they could be.[4] In fact, as Clark and Ambrosio (2013) argue, the increase in inequality aversion when individual expects to move downward is larger in size than the decrease in inequality aversion in the opposite case. Whether individuals are risk averse or not is influenced by how fortunate they have been in the past (Ferrer-i-Carbonell and Ramos, 2014), which is directly influenced by the history of the country or area the individual lives in. Alesina and Guiliano (2009) showed that macroeconomic volatility of the country specially during individual's youth is an important determinant of inequality aversion.

[3] According to Alesina and La Ferrara (2005) an appropriate measure of growth in the cities and areas of the US is population growth. This is because individuals know that mobility is high and when the economy is growing in a specific area it becomes an attractive place to live in.

[4] Ferrer-i-Carbonell and Ramos (2009) found strong evidence of this. In spite of empirical limitations, the opposite effect is also found by some other authors as Clark (2013)

As mentioned above self-interest reasons for preferences over equality can show up in the utility function indirectly. This is reflected by equation 2:

$$u_i = u(c_{i1}(I_1), c_{i2}(I_2), \dots, c_{iT-1}(I_{T-1}), c_{iT}(I_T)) \quad (2)$$

This equation is equivalent to equation 1 but with consumption depending on I_t which is the inequality in period t. *A grosso modo* we find two types of attitudes towards inequality caused by self-interest reasons:

On the one hand, individual *i* could be against or indifferent to redistribution, if the derivative of *c* with respect to *I* is expected to be positive.[5] Inequality is seen as an opportunity to increase consumption if the individual is a risk-lover and there is social mobility in the country, or owing to incentive effects (Alesina and Giuliano, 2009). Incentive effects refer to the fact that as inequality increases people would have more incentives to work hard so as to achieve a higher level of consumption. As noted by Alesina and Giuliano (2009), if this effect dominates in society, there is a trade-off between efficiency and equality. On the other hand, individual *i* could be pro-redistribution, if the derivative of *c* with respect to *I* is expected to be negative. This is the case of risk-averse individuals if there is social mobility in the country, who associate inequality with worse consumption levels. The relation between inequality and consumption in the case in which there is no social mobility could be different. When income inequality increases in an economy without social mobility, individuals with the lowest consumption levels could expect their consumption to decrease whereas individuals with the highest consumption levels could expect their consumption to increase. To sum up, the indirect effect of inequality on utility coming from consumption or income depends on the expectations than the individual has about the relationship between inequality and these variables. This means that preferences for redistribution could be affected by the attitudes towards risk of the individual or the perceived level of social mobility.

[5] As noted earlier we are assuming that consumption and utility are positively related.

Apart from that, there are other variables concerning self-interest reasons which could account for a negative effect of inequality on utility. For instance: "*income inequality may produce individuals who are more competitive and less friendly towards others*". (Clark and Ambrosio, 2013). As they mentioned in their paper there is consistent evidence on the existing relationship between inequality and violent behaviour.[6] Criminal activity is also believed to increase with inequality by Alesina and Giuliano (2009) and Ferrer-i-Carbonell and Ramos (2014).[7] For some reasons such as incentive effects, inequality could increase working hours, which has a negative relationship with happiness under *ceteris paribus* conditions (Ferrer-i-Carbonell and Ramos, 2014). Last, Alesina and Giuliano (2009) also argues that equality may increase the education level of the population. They argue that education increases the aggregate level of productivity in the country creating positive externalities for everyone participating in that economy. In addition to that, they argue that even the rich would benefit from an increase in education so they would probably agree with some redistribution for public education provision. These arguments rely on evidence provided by Perotti (1996) that inequality and secondary schooling are negatively related.

2.1.2 Relative concerns

In this section, we consider again that individuals do not care about inequality *per se* but this time they care about relative concerns. "*An increase in the income of others reduces the individual's well-being, through either higher relative deprivation or lower relative satisfaction (depending on whether the others earn more or less than the individual in question), while analogously a reduction in others' income increases the individual's well-being*" (Clark and Ambrosio, 2013). As they also explain there are several studies that show that individuals do care about their relative position. For instance, Carlsson et al. (2007) founds that a 45% of the utility increase from a small income increase corresponds to having a higher relative income. Nevertheless, they also explain that comparisons of consumption and labour supply are often more consistent than income when determining wellbeing. It is important to notice that if the only thing individuals care about are ranks, the degree of inequality is not what is important for determining

[6] For example, they mentioned evidence given by Daly et. al., 2001 using Canadian provincial-level murder rates

[7] Related to criminal activity, Alesina and Giuliano also add other variables such as drug abuse and health and social problems.

wellbeing (Clark and Ambrosio, 2013). Nonetheless, we are not going to discuss it as it goes beyond the scope of this essay.

Clark and Ambrosio (2013) claim that inequality aversion when it comes to relative concerns depends a lot on the group of people the individual has in mind. In this essay, we use the word *reference group* to refer to a group of people an individual compares herself with.[8] Clark and Ambrosio (2013) call it a comparative reference group. They also talk about a second type of reference group called normative reference group, to refer to the group of people that have influence on the individual norms, attitudes and values. In this section, we explore what they call the comparative view, further on we will explain which role plays the normative view in determining preferences for equality. As they also point out, the fact that the utility function of the individual depends on income or consumption of others is known as the relative income hypothesis. For example, imagine that an individual usually compares his or her consumption with the consumption of a neighbour, utility function could look something like equation 3:

$$u_i = u(a) \quad (3)$$

where *a* is the difference between the individual's consumption and the neighbour's one. As we have already mentioned this may depend on whether *a* is a measure of relative deprivation or relative satisfaction. As Ferrer-i-Carbonell and Ramos (2014) claim, being poorer than its reference group can negatively affect happiness whereas being richer does not need to affect it. Moreover, it is also argued that relative deprivation has a higher impact on subjective wellbeing than absolute income (Clark and Ambrosio, 2013). They also give some evidence such as a survey conducted by Solnick and Hemenway (1998) in which half of the respondents preferred to have 50% less real income but higher relative income.

Many authors have distinguished two different types of inequality. When the individual is a member of the reference group, which is referred to as within group inequality, and when the individual is not, which is referred to as between group inequality. On no account do between and within group inequality need to be equivalent. "*The between and*

[8] As Clark and Ambrosio (2013) note this term was first used by Hyman (1942) to refer to a group of people an individual compares itself for self-appraisal.

within group inequality effect could differ if, for example, the weight that individuals assign to effort or to luck as determinants of income in a society differs depending on whether they judge individuals from the same group or not" (Ferrer-i-Carbonell and Ramos, 2014). Imagine that the characteristics which define who is member of each group are thought as being determined by luck. Then, the between group inequality is assumed to be caused by inequality of opportunity. In this case, the effect of between group inequality on happiness should be negative as it would be associated with luck (Ferrer-i-Carbonell and Ramos, 2014). In contrast to that, Clark and Ambrosio (2013) argue that in the case in which individual aspires to be part of that group, when between inequality increases leaving the reference group into a better position, the effect on individual's wellbeing may be positive. Despite that, they also add, similar to the case of social mobility in transition economies, there can be a turning point in which this relationship reverses if they see that the probability to enter that group has diminished. Imagine that, given the characteristics that define who is part of the group, they perceive that inequality of effort is what causes differences in income. Then, the within group inequality would not affect utility at all (Ferrer-i-Carbonell and Ramos, 2014). Still, they add that "*Individuals at the top of the income distribution should like (within) inequality to the extent that they experience a positive comparison effect*". This is shared by Clark and Ambrosio (2013), who also argue that when the individual is on the bottom, it is negatively affected. Moreover, they also claim that having a perception that the distribution of income is fair is positively related with the happiness of the richest ones and negatively related with the happiness of the poorest ones.[9] Consistent with that, "*those with higher incomes are more right-wing and less favorable to redistributive policies, while those with lower incomes are more likely to vote for left-wing parties and to be in favor of redistribution*" (Clark and Ambrosio, 2013).

Regarding relative concerns it is important to notice that "*The feeling of deprivation relative to someone who has a higher income today is more pronounced if this someone was **not** better off than the individual in question yesterday*" (Clark and Ambrosio, 2013). This relative deprivation could be caused by the fact that this individual does not have the same opportunities than the other to improve his or her relative position. This could be

[9] According to a study conducted by Smyth and Qian (2008) who use Chinese data from a 2002 survey of 31 cities to study the relation about perception of fairness and happiness.

for example when both of them are part of different groups and at least one of them does not aspire to be part of the other group. Nevertheless, the evidence that Clark and Ambrosio (2013) provide goes into the opposite direction. They argue that the fact that someone that is richer than me today was poorer than me in the past, give me reasons to think that I am also going to improve my relative position in the future. This may be more likely to happen when both individuals are part of the same group or they aspire to be. This supports the idea that "*individuals may attribute positive utility to the well being of members of their own group, and negative utility to that of members of other groups (see e.g., Tajfel et al. (1971))*" (Alesina and La Ferrara, 2005).[10]

An issue with within group inequality that we have not mentioned yet and that has to do with relative concerns is conspicuous consumption. "*Conspicuous consumption rivalry to maintain one's apparent relative position, predicts a positive effect of inequality on happiness, as more equality (i.e., denser distribution) increases competition for ranks, which leads to higher conspicuous consumption and lowers utility (Hopkins, 2008)*" (Ferrer-i-Carbonell and Ramos, 2014). Contrary to that, they also explain that there are studies that go in an opposite direction. For instance, Frank (2008) found that the recent rise in inequality caused an increase in positional externalities which had a negative effect on happiness. The study concluded that in the USA the sharp increase in conspicuous consumption between the lower positions of income was underpinned by the rise in consumption of the highest incomes. Besides, there is a study showing that individuals living in countries with a higher level of income are more concerned about relative standing than those living in countries with a lower level of income (Clark and Ambrosio, 2013). These arguments are aligned with the idea that Ferrer-i-Carbonell and Ramos (2014) support that individuals tend to be unhappier the richer the reference group is.

2.2 Direct ways

In this section, we consider reasons why individuals may dislike inequality *per se*. There is evidence that individuals do care about others and the more equal is the environment in which they live, the happier they are (Ferrer-i-Carbonell, 2014). Thus, we are interested

[10] This conclusion assumes that the characteristics that make an individual part of a group cannot change.

in the inequality in the normative view, that is evaluating it regardless being or not part of the reference group, without comparisons (Clark and Ambrosio, 2013). They give lots of evidence on people having egalitarian preferences. For example, an experiment conducted by Camere and Fehr (2004) in which participants are given some money and they are asked to contribute with whatever quantity of money they want for the provision of a public good. Despite the Nash equilibrium is 0, they contribute on average 40-60%. Indeed, Clark and Ambrosio (2013) point out that the money came out of nothing, participants had not put any effort, thus, they are less concerned about equality. In the same study, they also create a very simple model to study the impact of inequality on wellbeing, that is the one in equation 4:

$$u_{ijt} = \alpha + \beta Y_{it} + \gamma I_{jt} + \varepsilon_{it} \quad (4)$$

where *i* indicates the individual, *j* the area in which the individual lives and *t* the time period. *Y* is controlling for standard demographic variables[11] like age, sex, education through the vector β, *I* is the inequality and ε the error term.

Similar to the case of relative concerns, individuals care about the fairness of processes, their perception of an outcome is better if the process is fair (Ferrer-i-Carbonell and Ramos, 2014). So, as they also argue, in societies where effort is more important to determine the income, less redistribution policies would be used. An example is the comparison between Europe and the US. In the same study they conclude that "*71% of Americans believe that the poor have a chance of escaping from poverty, whereas in Europe this figure is only 40%*". Many other authors like Clark and Ambrosio (2013) and Alesina and Guiliano (2009) agree that the difference in inequality aversion between European and American citizens comes from social mobility. As social mobility in the US is high, they tend to put more weight on effort than luck as a determinant of income and thus inequality aversion is lower than in Europe where social mobility is much less.

Therefore, in order to take into account this difference, we could use the following model in equation 5:

[11] According to Alesina and Giuliano (2009) it is important to control for individual characteristics. For example gender, age, race and level of education and income.

$$u_{ijt} = \alpha + \beta Y_{it} + \gamma_1 I_{jt}^{e} + \gamma_2 I_{jt}^{l} + \varepsilon_{it} \quad (5)$$

where the only change has been to separate inequality coming from the differences in effort, I^e, and the one coming from the differences in luck, I^l. The difficult part when estimating this model is to determine what is considered effort and what luck, as there is no common agreement on that (Alesina and Giuliano, 2009). In this study, we consider that inequality of effort and inequality of opportunity are determining this difference. However, the actual level of inequality is not necessary the same than the inequality perceived by the individual. "*If perceptions are not accurate and the error is unbiased, the estimated coefficient will usually be an underestimate of the true coefficient. However, if the erroneous perceptions correlate with individual characteristics, then the coefficient will not only be biased but the direction of the bias will be unknown*" (Ferrer-i-Carbonell, 2014).

The difference in inequality aversion between Europe and the US is caused by other factors a part from social mobility. For instance, Alesina and La Ferrara (2005) explain that the fact that in the US the redistributive policies are much smaller than in Europe has to do with the fact that in the US the racial and ethnical fragmentation is higher than in Europe. According to them those places where there is more diversity of people the social capital is lower. They conclude that "*altruism does not travel well across ethnic lines"*. That is, individuals dislike more inequality *per se* when it is measured with the individuals of the same ethnic group than when they are from different ethnic groups. Assuming that people from the same race or ethnic group consider themselves as part of a specific group, we could argue that in order to study inequality aversion in the normative view it is also interesting to differentiate between within group inequality and between group inequality. Moreover, they say that there is evidence that income inequality produces the same effect on altruism than racial segregation but in a lower scale.[12]

[12] They provide evidence that both variables produce similar effects on other variables. They explain an study conducted by Dayton-Johnson (2000) that uses data on Mexican irrigation projects. The study concludes that the canal maintenance has a negative relationship with both inequality and racial fragmentation.

Preferences on equality are very much influenced by the ideologies of the individual. Even though the individual could be benefiting from one way of redistribution, they may prefer another one in order to be faithful to their ideologies. Then, probably there is people that adjust their ideologies to limit this trade off, as poor people believing in less inequality (Alesina and Giuliano, 2009) or those less favourable to racial integration tend to be more averse to redistributive policies (Alesina and La Ferrara, 2005). According to Clark and Ambrosio (2013), there is evidence that in Europe, poor people and left-wingers are hurt by more than rich people and right-wingers, and only for right-wingers we can find a positive impact of inequality on happiness.

3. METHODOLOGY

This section describes the methodology we will use to explore this effect of income inequality on utility. Basically, the aim is to construct an econometric model with the utility as the dependent variable and income inequality as one of the independent variables. First of all, it is necessary to find a meaningful way of measuring utility. In this essay, we assume that individual's wellbeing or happiness and individual's utility are equivalent. Hence, the variable that will allow us to undertake this study will be subjective individual's general happiness or well-being. According to Ferrer-i-Carbonell and Ramos (2014), "*Although the empirical evidence indicates that individuals share a similar concept of happiness or well-being, individual interpersonal welfare comparisons remain a debatable issue.*" Nevertheless, they claim that the evidence on the reliability of subjective well-being measures is enough to be confident that it is an appropriate measure for individual's wellbeing.

On the other hand, income inequality can be measured in different ways. However, as the vast majority of the studies do, we will use the Gini coefficient at a country level, in spite of the inexistence of consensus in which the right indicator and geographical level to measure it (Clark and Ambrosio, 2013). They argue that the principal drawback of the Gini coefficient is its lack of variability over time, which hampers the estimation of its correlation with other variables. Another issue with this regression is that it contains subjective and non-subjective variables, which may be challenging as it could cause endogeneity problems if the subjective variable is related to the individual characteristics. In this study, the relationship between the Gini coefficient and subjective happiness will proxy the direct effect of the income inequality on utility. Although it could be interesting

to split inequality into two parts, one coming from effort and another coming from luck, the analysis focuses on the aggregate level, as there is no common agreement on which part of inequality is coming from each factor.

Other variables have been chosen to be included in our model, considering other similar studies as for example Alesina and Giuliano (2009). They will be mostly variables measuring individual's characteristics and circumstances that could be related to the subjective happiness of individuals (Clark and Ambrosio, 2013). According to many experts in the field, as Ferrer-i-Carbonell and Ramos (2014), the use of panel data is crucial to obtain reliable results. Unfortunately, the data available at an individual level is a repeated cross-sectional dataset. In order to get meaningful estimations, we have chosen those periods and European countries that provide us with more data available, which are pointed out in the following section. We will analyse and compare the following model and some variations of it:

$$u_{it} = \alpha + \beta I_{ct} + \gamma_1 X_{it} + \gamma_2 Y_{ct} + \delta_1 T + \delta_2 C + \varepsilon_{it} \quad (6)$$

where *i, t* and *c* indicate the individual, the time period and the particular country respectively. The term *u* accounts for utility, *I* is the income inequality and *T* and *C* are dummies for the time period and the country where the individual lives. *X* is a vector of variables measured at the individual level, and *Y* is a vector of variables at the country level, all of them are described in the following section. Again, ε is the error term. Assuming that the variables that we have in our data set are an exact measure of the variables of object and under *ceteris paribus* conditions, the negative sign of β is an indicator of inequality aversion.

Having analysed the direct effect of inequality on utility, we would explore the causes of this effect. The simplest way to do so is using interaction terms, as it allows inequality aversion to depend on other variables apart from the Gini coefficient. The variables chosen are related to the different reasons discussed in section 2 and they are described in section 4 below. We will regress the model defined by equation 7 for each variable at the individual level $\{Z_{kit}\}_{k=1}^{K}$, and the model defined by the equation 8 for each variable measured at the country level $\{W_{mct}\}_{m=1}^{M}$.

$$u_{it} = \alpha + \beta I_{ct} + \gamma_1 X_{it} + \gamma_2 Y_{ct} + \eta Z_{kil} + \rho Z_{kit} I_{ct} + \delta_1 T + \delta_2 C + \varepsilon_{it} \quad (7)$$

$$u_{it} = \alpha + \beta I_{ct} + \gamma_1 X_{it} + \gamma_2 Y_{ct} + \eta W_{mct} + \rho W_{mct} I_{ct} + \delta_1 T + \delta_2 C + \varepsilon_{it} \quad (8)$$

where the meaning of each term is the same than in the previous equation. Under *ceteris paribus*, the effect of inequality on utility in these models is $\frac{\partial u_{it}}{\partial I_{ct}} = \beta + \rho Z_{kit}$ *or* $\beta + \rho W_{mct}$. Hence, if $\rho > 0$, the interaction term indicates that the variable included would reduce the inequality aversion of the individual, and if $\rho < 0$, the variable would intensify inequality aversion. Finally, if $\rho = 0$, the variable has no effect on the preferences for redistribution of the individual. The following step is collecting all the data needed to carry out this analysis. The next section outlines and describes the data.

4. THE DATA

Firstly, the data is collected from the 2008 to the 2014, every two years in the case of the data at the individual level. The European countries chosen are Belgium, Czech Republic, Finland, Ireland, Norway, Poland, Portugal, Slovenia, Spain and the United Kingdom. All the data for the variables at the individual level is drawn from the European Social Survey. Data at the country level has been obtained from the World Bank's website and the OECD database.

The principal variables of our analysis are utility and Income inequality. Utility is measured by the subjective happiness of the individual, which goes from 0, that means extremely unhappy, successively to 10, that means extremely happy. Income inequality is measured by the Gini coefficient, which is defined by the OECD as "*the comparison of cumulative proportions of the population against cumulative proportions of income they receive, and it ranges between 0 in the case of perfect equality and 1 in the case of perfect inequality."*

In the models defined by equation 6, we will use the following variables: At the individual level, the age, the level of education[13], whether or not the individual is part of a minority

[13] We have divided the variable measuring the years of education into a variable taking the value 1 if primary education is completed, 2 if secondary education is completed, 3 if tertiary or a higher level of education is completed and 0 otherwise.

ethnic group, how often he or she meets friends[14], the gender, the household disposable income[15], the subjective health[16], whether or not the individual has a partner to live with, how religious the individual is[17] and whether or not he or she has had a job at least for the last 7 days. At the country level, the GDP growth and the long-term unemployment rate (UR).

In the first place, it is interesting to take a look at the distribution of the dependent variable that is happiness. It has a mean of 7.35 and a standard deviation of 1.88. The variable is clearly left-skewed as shown in graph 1, which means that respondents are prone to have a subjective happiness above 5. Regarding the other variables, its descriptive statistics are summarized in table 1 and the distribution of the categorical variables are shown in graph 3. There are only three continuous variables which are income inequality, GDP growth and UR, which have different ranges of values. Age is also treated as a continuous variable in this analysis. The other variables are categorical and they have from 2 to 11 different categories. All the variables have more or less the same number of observations, HDI is the variable with less observations. The mean is relatively high in the case of education, 2.31 out of 3, which means that respondents tend to have high levels of education, and ethnic group, which has two possible values 1 and 2 and the mean is 1.96, indicating that a small share of the individuals are part of minority ethnic groups. This is also observed when we look at the frequency distributions of these variables. The variable friends is right-skewed, meaning that the majority of the respondents see their friends at least once a week whereas the variable HDI seems to be left-skewed, which indicates a tendency towards the lowest income deciles, especially the 2nd, 3rd and 4th. Graph 3 also indicates that the majority of the individuals live with their partners and regarding religion they place themselves mostly not religious at all or at the level 5 out of 10.

In the case of income inequality, the standard deviation is 0.04, very low in contrast with the other continuous variables, especially long-term unemployment which has a standard deviation of 14.57. This can be observed also in graph 2, which shows that Gini

[14] The variable has 7 categories from 1 if you never meet friends to 7 if you meet friends everyday.

[15] The variable has 10 categories from 1 if the income of the individual is part of the 1st decile, which is the lowest, to 10 if it belongs to the 10th.

[16] The variable has 5 categories, from 1 if the individual considers it very good, to 5 if it is considered very bad.

[17] The variable has 11 categories, from 0, if the individual is not religious at all, to 10 if the individual is very religious.

coefficient does not vary a lot over time and across countries. In the graph, we could distinguish three groups of countries. The ones which have the highest values of the Gini coefficient, around 0.35, which are the UK, Spain and Portugal. The countries that have the Gini coefficient around 0.3, which are Ireland and Poland. Last, the remaining countries have the lowest values of the Gini coefficient, around 0.25.

Regarding the models described by equations 7 and 8, apart from all the variables included in the previous model, some of them also used as an interaction terms, we will need to introduce other interesting variables. First of all, we will use the country, the year and the level of education to study its possible effects on preferences for redistribution. Then, to take income into consideration, in addition to the HDI at the individual level, we will use the HDI growth of the country. There will also be a variable to proxy own social mobility, which is whether or not the individual has the same employment relation than the father.[18] Besides, there will be some variables related to work and family as the employment relation[19], whether or not the individual has ever had a paid job and whether or not the individual has ever lived with a child. Some other variables are interesting to measure the importance of criminal activity for the individual as whether or not the individual has been victim of a burglary or an assault the last 5 years and how important is safety for the individual.[20] Another variable will measure how altruistic the individual thinks the others are, which is to what extent he or she thinks that people try to be helpful.[21] Some other variables will control for tolerance between groups, as whether or not the individuals are discriminated by their nationality or race, how many immigrants from poorer countries outside Europe they think that should be allowed in their country[22] and whether or not they are part of minority ethnic groups. Last, there will be variables reflecting the ideologies of the individual as how important is for the individual to be loyal to friends[23] and his or her position in the right-left scale.[24]

[18] We have created this variable comparing the variables of employment relation of the individual and the father of the individual, this variable takes the value 1 if the employment relation is not the same.
[19] There are three categories: employee, self-employed and working in a family business
[20] The variable has 6 categories, from 0 if very much like me to 5 if not like me at all.
[21] The variable has 11 categories, from 0 it is completely false to 10 if it is completely true.
[22] The variables have 4 categories: many, some, a few and none.
[23] The variable has 6 categories, from 0 if very much like me to 5 if not like me at all.
[24] The variable has 11 categories, from 0 that is left to 10 that is right.

There are some potentially interesting variables, as the optimism of the individual or the whether or not the individual is paid according to the effort he or she puts, that we have excluded due to an extremely low number of observations available in the European Social Survey which could bias our estimations. The following section analyses the results obtained by estimating the models described in section 3 with the data described in section 4 using *STATA*.

5. ANALYSIS OF RESULTS

The results obtained for the models described by equation 6 are summarized in table 2. According to our estimations, under *ceteris paribus*, an increase in the Gini coefficient of 1 standard deviation, decreases the subjective happiness of the individual by 4,17%.[25] If we control for the individual's disposable income, this percentage, which we assume to measure inequality aversion of the individual, rises to 4,63%. When controlling for the other variables at the individual level inequality aversion reduces to 3,97%. Finally, adding the GDP growth and the long-term unemployment rate, inequality aversion turns to be 2,73%. In spite of the fact that the number of observations decreased with the additional regressors, the new variables were significant enough to cause an increase in the goodness of fit of the model. Thus, all these results, which are significant at 1% level, indicate a strong inequality aversion of the individuals for the European countries selected. This is consistent with the results obtained in other studies like Alesina, Di Tella and MacCulloch (2004) who found that Europeans are inequality averse (Ferrer-i-Carbonell and Ramos, 2014).

In table 3 there are the results obtained from estimating the last model of table 2 but with an interaction term, which are the models from equation 7 and 8. These results are divided into different topics depending on which is the variable used as an interaction term:

5.1 Region and time effects

Using the country as an interaction term increases the adjusted R-squared from 0.2362 to 0.2373. As it can be observed, individuals in some countries on average are inequality

[25] This percentage is the estimated β coefficient multiplied by 0,04, which is the standard deviation of income inequality, divided by 7,35, which is the mean of life satisfaction, and multiplied by 100.

lovers. This would be the case of Belgium, Czech Republic, Finland and Spain, whereas citizens of the remaining countries would be negatively affected by inequality. Differences across countries could be caused by many and varied reasons as history, culture, level of social mobility or equality of opportunity. Apart from that, it should be noticed that those countries in which individuals seem to be inequality lovers are part of the group of countries with lowest levels of income inequality, with the exception of Spain. On the other hand, the country in which individuals would be the most concerned ones about inequality, that is Ireland, is part of the group of countries with highest levels of income inequality. An increase in the Gini coefficient of 1 standard deviation is associated with a decrease in happiness of Irish people of 4,60%. These results are significant at 1% level, minus in the case of the Czech Republic. Apparently, the results of introducing the years show that inequality aversion reduces as time passes by. When the Gini increases 1 standard deviation, wellbeing would reduce by 1, 24% in 2008 and it would be constant or even increasing in 2014. Adjusted R-squared increases to 0.2364 and the results are significant at 5% level just for 2012 and 2014.

5.2 Education

Regarding education, the results indicate that the inequality aversion would be lower with higher levels of education than just elementary school. For instance, an increase in 1 standard deviation of the Gini is associated with a decrease in happiness of 2,80% for individuals with tertiary school education, and of 5,30% for individuals with just elementary school education. It is shown that inequality and schooling are negatively related (Alesina and Giuliano, 2009), so individuals with a lower level of education could want inequality to be reduced in order to access a higher level of education. The fact that, assuming that the results are true, individuals with tertiary education are more concerned about inequality than those with secondary or primary education, could be explained by the fact that they may be more concerned about inequality of opportunity and consequently they could have higher empathy towards those that do not have access to education. The interaction term increases the adjusted R-squared to 0.2368 and all the estimations are significant at 1% level.

5.3 Income

According to the results, individuals which are more concerned about inequality are those part of the lowest income decile, while the least concerned ones are those with the highest

disposable income. Under *ceteris paribus*, an increase in Gini of 1 standard deviation, decreases utility by 2,22% for individuals part of the 10th decile, and by 3,22% for individuals part of the 1st decile, which is significant at 5% level. This applies to the first 9 deciles, as the interaction effects from the 2nd to the 9th decile are not statistically significant, which means that they have the base value of the 1st decile. Adding an interaction term with the Household Disposable keeps the adjusted R-squared constant.

Another variable measuring income is the HDI growth of the country, which could add relevant information as an interaction term according to the goodness of fit of the model. An increase in 1 percentage point of HDI growth could increase inequality aversion from 2,23% to 2, 41%[26], which is significant at 1% level. According to Clark and Ambrosio (2013), individuals living in richer countries are more concerned about relative standards, which could imply higher levels of conspicuous consumption. Moreover, as Ferrer-i-Carbonell and Ramos (2014) claim, individuals are unhappier the richer the reference group is. Therefore, these could be the reasons why individuals living in countries with higher HDI growth seem to be more inequality averse.

5.4 Own social mobility

According to the goodness of fit, when it comes to inequality aversion, having or not the same employment relation of the father adds relevant information to the model. The results indicate that, experiencing own social mobility with respect to the father in employment relation, which according to Clark and Ambrosio (2013) matters[27], decreases inequality aversion. Under *ceteris paribus*, if Gini increases by 1 standard deviation, utility decreases by 3,06% if the individual has the same employment relation, and by 2,72% if the employment relation is different. These results, which significant at 10% level, could be explained by the fact that experiencing own social mobility may induce the individual to perceive a higher subjective level of social mobility in the country. Then, it may be easier for the individual to see inequality as an opportunity of advancement or to give more weight to effort than luck as a determinant of income. In order to study these effects more in depth, estimating how attitudes towards risk of individuals affect inequality aversion could be interesting as well.

[26] This is the estimated decrease in happiness when income inequality increases by 1 standard deviation.

[27] According to Clarck and Ambrosio (2013), own social mobility matters.

5.5 Work and family

The employment relation could be relevant to determine preferences for redistribution as the adjusted R-squared increases to 0.2375 when adding the interaction term. Despite that, the estimations are not significant. The results seem to show that the individuals who are employees are more inequality averse than those who are self-employed or working in a family business. An employee could be more interested in increasing equality than employers if inequality is negatively related with the improvement of working conditions. For example, as previously mentioned, inequality may imply an increase in working hours, which is negatively related with utility (Ferrer-Carbonell and Ramos, 2014). In addition to that, if the individual has never had a job, under ceteris paribus, if the Gini increases by 1 standard deviation, happiness decreases by 4,66%, however, it decreases by 4,04% in the opposite case. This could be the case of an individual who has risk aversion towards the type of job he or she can find. Similarly, according to the results obtained, if the individual has lived with a child, if Gini increases by 1 standard deviation, wellbeing decreases by 2,75% whereas it decreases by 2,55% in the opposite case. The explanation could be simply the fact that they are concerned about the future of the child, which is probably the case of risk-averse individuals. Although these results are not significant, when adding these variables the number of observations decrease substantially. In both cases the adjusted R-squared of the model increases.

5.6 Criminal activity

The results, are aligned with the fact that if the individual has been victim of a burglary or an assault during the last 5 years, the inequality aversion is stronger. Concretely, an increase of the Gini of 1 standard deviation is associated with a decrease in the utility of the individual of 2,93%, which reduces to 2,68% if the individual has not been victim of any criminal activity. Adding this interaction term increases the adjusted R-squared to 0.2370 but the results are not significant. A similar case is the interaction term with the variable that measures to what extent the individual thinks that safety is important. According to our results, the less important is safety for the individual, the less inequality averse, until the point that individuals not caring about safety at all may be indifferent about inequality or inequality lovers. An increase in the Gini of 1 standard deviation is associated with an increase in the wellbeing of the individual of 0,76% for this type of individuals whereas it is associated with a decrease in the wellbeing of 3,15% in the

opposite case. These results are significant at 1% level and using this variable as an interaction term rises the adjusted R-squared to 0.2375. Crime is believed to be positively related with income inequality (Alesina and Giuliano, 2009 and Ferrer-i-Carbonell and Ramos, 2014). Then, individuals who have been victim of a criminal activity or those who give a lot of importance to safety may be more concerned about this relationship and consequently they are more inequality averse.

5.7 Altruism

We will use a variable measuring to what extent the individual thinks that people try to be helpful to measure how altruistic people are in general. The data selected seems to indicate that the more helpful people are, the lower inequality aversion. In the case that people are most helpful, under *ceteris paribus*, if the Gini increases by 1 standard deviation, happiness decreases by 0.38%, significant at 5% level. This percentage is 2,44% in the case that the individual thinks that people are not helpful at all. Using this variable as an interaction term increases the adjusted R-squared to 0.2517. This result makes sense if we consider that in more altruistic societies there is a better welfare state. Then, poor individuals could have better living conditions and there could be more equality of opportunity. Hence, people living in that country could be less concerned about income inequality than someone living in a less altruistic environment.

5.8 Between groups of people

Using the interaction term with the variable indicating whether or not the individual is part of a minority ethnic group keeps the adjusted R-squared constant whereas using another variable indicating whether or not the individual is discriminated by nationality or race, increases the adjusted R-squared of the model. According to the results, which are not significant, an increase of 1 standard deviation in the Gini is associated with a decrease in happiness of 2.81% for individuals who are not part of a minority ethnic group and of 2,91% for the other type of individuals. The fact that individuals who are part of a minority ethnic group are more concerned about inequality could be explained if they are more negatively affected by inequality. For example, imagine that this minority ethnic group is associated with having worse living or working conditions and this between group inequality is intensified with an increase in income inequality. Then, when income inequality increases, these individuals would experience a higher relative deprivation than the others. On the contrary, when the individual is discriminated, the inequality aversion

would be lower than if the individual is not discriminated. Individuals could feel less altruistic when it comes to inequality of that country in which they are discriminated and for that reason they may have a lower inequality aversion. For instance, an increase in Gini of 1 standard deviation is associated with a decrease in utility of 1,25% if the individual is discriminated and of 2,81% if the individual is not, which is significant at 10%.

The preferences for racial integration are also likely to be related to the preferences for redistribution. Less altruistic individuals are prone to be against racial integration and also against redistributive policies (Alesina and La Ferrara, 2005). Using the variable that measures how many immigrants from poorer countries outside Europe the individual would allow to live in the country the adjusted R-squared increases to 0.2385. Although the results are not significant, they seem to corroborate the argument mentioned above. If the individual would not allow any immigrant, an increase in the Gini coefficient of 1 standard deviation is associated with a decrease in utility of 2,53%. On the other hand, if the individual would allow all immigrants, this percentage would be 2,61%.

5.9 Ideologies

To what extent the individual gives importance to loyalty to friends seems to be a relevant factor when it comes to preferences for redistribution in terms of goodness of fit. According to the results, if the individual does not give importance to loyalty to friends, an increase in the Gini of 1 standard deviation, decreases happiness by 4,65%, significant at 10% level. However, if the individual does give importance to loyalty to friends, inequality aversion turns to be 2,66%, which is not significant. If loyalty to friends proxies loyalty to the group which the individual is part of, it could make the individual give less importance to the altruism across different groups. Hence, individuals having more loyalty to friends may be less inequality averse than the other individuals, when the increase in income inequality corresponds to the between-groups inequality.

Regarding other ideologies of the individuals, as the position of the individual in the right-left scale, the results seem to indicate that individuals in a center-left position are more inequality averse than individuals in a center-right position, some estimations significant at 1% level. Clark and Ambrosio (2013) claim that the left-wing individuals dislike inequality and the right-wing individuals like or are indifferent to inequality. According

to the results, an increase in 1 standard deviation of the Gini, increases happiness by 0,11% for the most right-wing individuals. However, the results are not clear as they do not indicate that all left-wing individuals are negatively affected by inequality.

6. CONCLUSIONS

The results have shown that the hypothesis of the Europeans being inequality averse is true, as income inequality is hampering individuals' wellbeing in Europe on average. In other words, the level of income inequality could not be optimal as we expect to achieve higher levels of life satisfaction as income inequality reduces. However, we have found that differences across countries do exist. The impact of inequality on individuals' utility could be smaller or even positive especially for the countries with the lowest values of the Gini Coefficient.

We have tried to determine which are the causes of inequality aversion in Europe. Even though some results are not significant, it is important to observe that in the cases in which the sample is small, it is normal to find high values for the standard deviation. Moreover, the results seem to be consistent with the previously revised literature.

First of all, there are some factors coming from self-interest reasons. For instance, when we distinguish between the different levels of income we see that all types of individuals are inequality averse on average, probably because they expect their income to be negatively related with inequality. This inequality aversion is intensified the lower is the income level of the individual. In order to determine in the self-interest perspective why individuals with the highest income levels are also negatively affected by inequality, we could estimate the effect of individuals' risk attitudes on inequality aversion. Provided that we have a limited dataset, we cannot measure risk aversion. Nevertheless, we have found that individuals not working or those having a child could be risk averse towards their future position and in turn more inequality averse. Employees are prone to be more inequality averse than employers as they expect to improve working conditions with equality. Individuals with the lowest levels of education are more inequality averse probably because they expect their education levels to increase with redistribution. Furthermore, individuals who have been victim of a burglary or an assault or those giving more importance to safety tend to be more inequality averse. This could be because they

dislike more criminal activity or violent behavior, which are believed to be positively related with inequality.

Secondly, some other variables have shown that relative concerns are also important to determine preferences for redistribution. For example, HDI growth of the country has shown that the richer is the country, the more negatively affected by inequality the individuals are, as they tend to worry more about relative standards. Apart from that, individuals belonging to a minority ethnic group could be more negatively affected by inequality, probably due to a higher relative deprivation in comparison to other groups.

Last but not least, individuals also have egalitarian preferences, which means that they could care about inequality *per se*. As the results indicate, individuals are less altruistic in societies in which the others are thought to be more altruistic, as inequality of opportunity tend to be lower. Similar to that, individuals that have experienced own social mobility with respect to the father are less inequality averse, as they could perceive a higher level of social mobility in the country. Racial fragmentation and differences between groups also play an important role in order to determine egalitarian preferences. Both individuals that are discriminated against nationality or race and individuals less favourable to racial integration are less inequality averse probably because they feel less altruistic between their groups. Regarding ideologies, in contrast to previous studies, this study does not find clear evidence about individuals adjusting their ideologies to their own interests. This is because not all left-wing individuals are found to be negatively affected by inequality on average.

An important issue with the regressions is that we are dealing with some subjective variables, that could cause endogeneity problems if the variable relates to individuals' characteristics. Due to the lack of panel data available at the individual level, these endogeneity problems cannot be solved. This study excludes variables which could be an important factor determining preferences for redistribution owing to the limited dataset, for example the risk aversion of the individual.

A further in-depth study of the relationship between inequality and utility could be carried out in different directions. For example, we could repeat the same study but using regional data and regional fixed effects, what could serve to study the differences between the

altruism between and within groups. Another interesting matter could be to find a way to measure inequality of opportunity and inequality of effort empirically, in order to study its different effects on individuals' wellbeing.

7. REFERENCES

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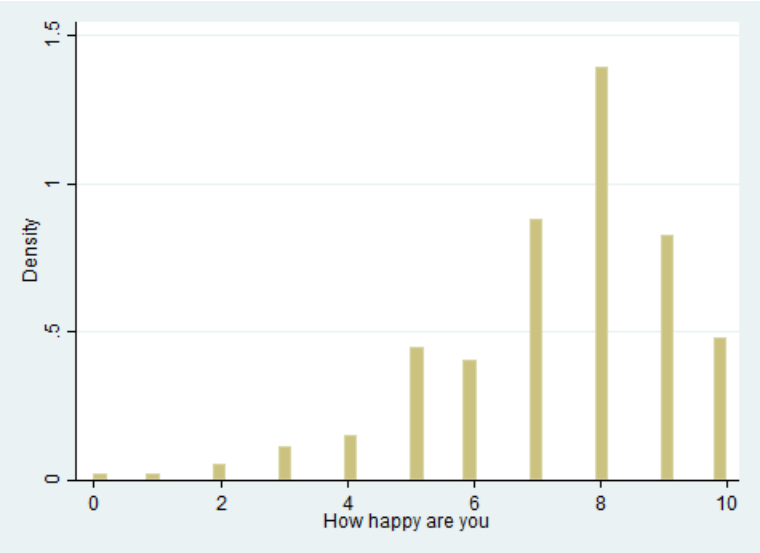
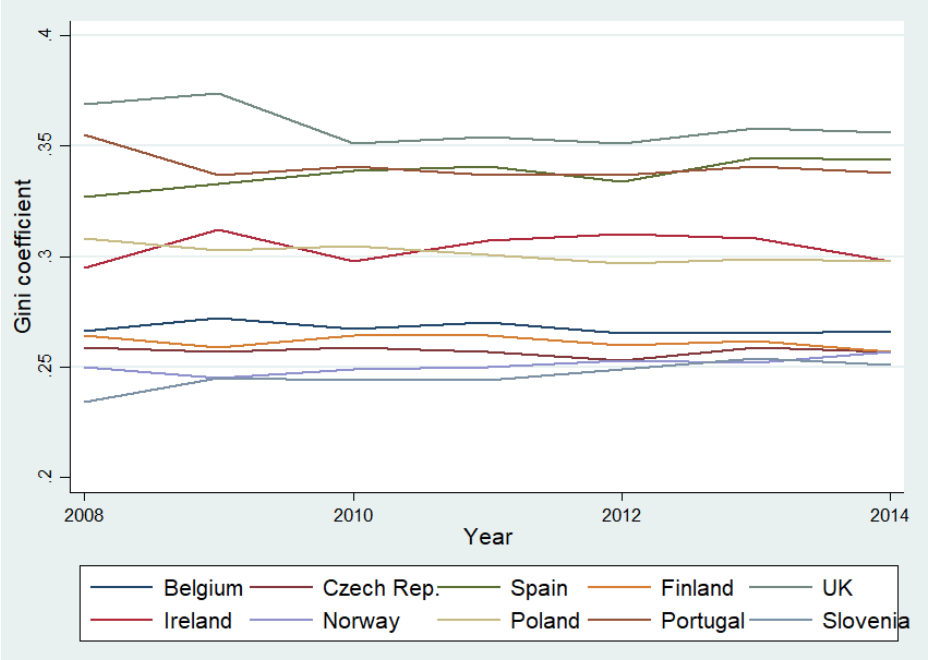
8. GRAPHS

Graph 1. Frequency distribution of Happiness



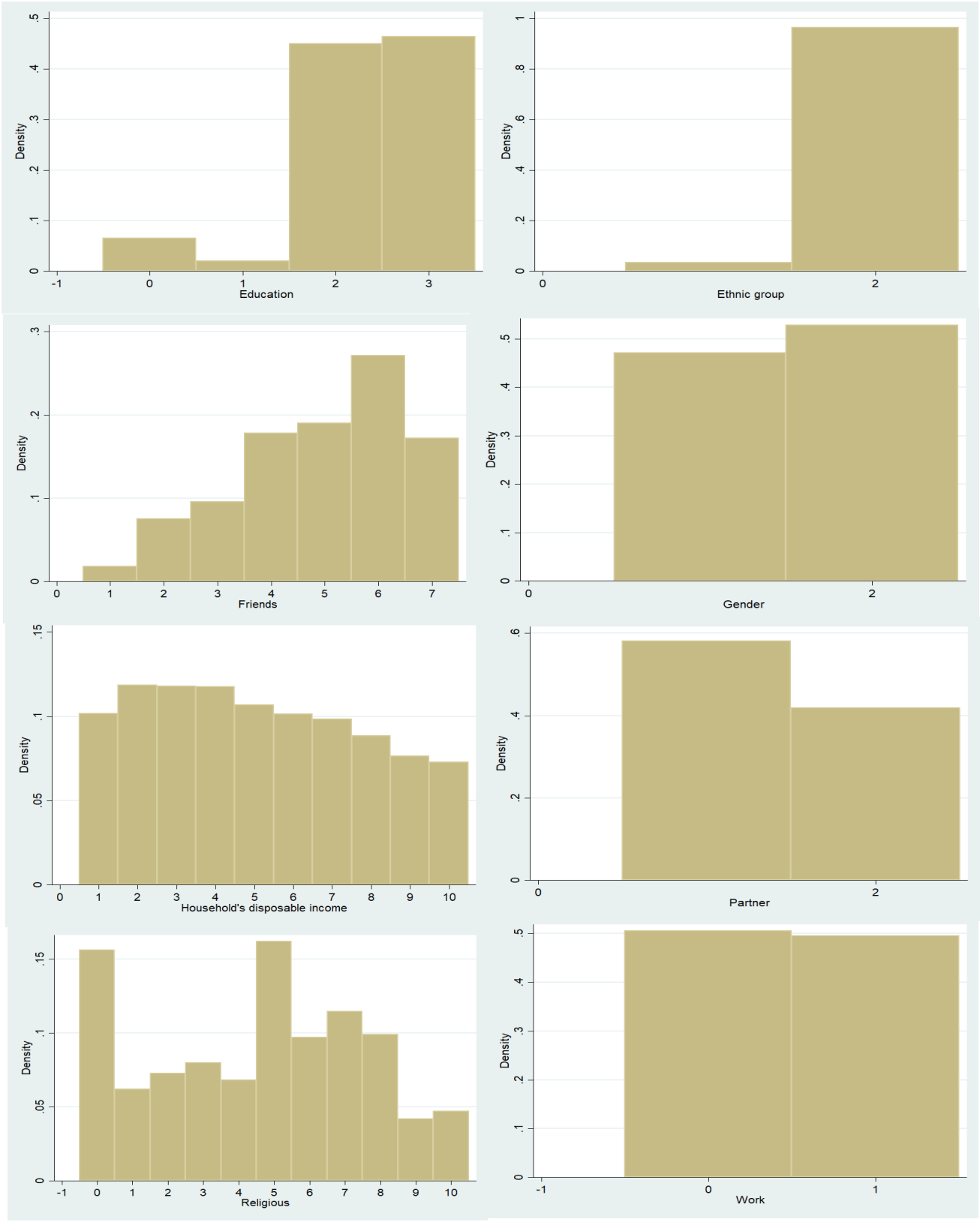
Source: European Social Survey, 2008-2014

Graph 2. Gini coefficient by country (2008-2014)



Source: OECD data, 2008-2014

Graph 3. Frequency distribution of categorical variables



Source: European Social Survey, 2008-2014

9. TABLES

Table 1. Descriptive statistics

Variables	Observations	Mean	Standard deviation	Min	Max
Income inequality	77,150	0.30	0.04	0.23	0.37
Age	76,955	48.30	18.74	15	123
Education	77,120	2.31	0.80	0	3
Ethnic group	76,347	1.96	0.18	1	2
Friends	76,949	4.95	1.58	1	7
Gender	77,086	1.53	0.50	1	2
HDI	59,461	5.12	2.76	1	10
Health	77,050	2.19	0.92	1	5
Partner	76,926	1.42	0.49	1	2
Religious	76,363	4.55	3.01	0	10
Work	77,120	0.50	0.50	0	1
GDP growth	77,150	1.19	2.30	-8.30	8.33
UR	77,150	37.58	14.57	5.98	61.74

Source: European Social Survey, OECD and the World Bank (2008-2014)

Table 2. Inequality aversion

Variables	Coefficient (1)	Coefficient (2)	Coefficient (3)	Coefficient (4)
Observations	76,759	59,270	58,135	58,135
Adjusted R-squared	0.0631	0.1080	0.2362	0.2362
Income inequality	-7.66 (1.26)***	-8.51 (1.42)***	-6.85 (1.33)***	-5.18 (1.49)***
Age			-0.05 (0.00)***	-0.05 (0.00)***
Age squared			0.00 (0.00)***	0.00 (0.00)***
Education: Primary			0.12 (0.06)*	0.11 (0.06)*
Education: Secondary			0.29 (0.04)***	0.30 (0.04)***
Education: Tertiary			0.31 (0.04)***	0.31 (0.04)***
Ethnic group: minority			0.25 (0.04)***	0.25 (0.04)***
Friends: less than once a month			0.30 (0.06)***	0.30 (0.06)***
Friends: once a month			0.70 (0.06)***	0.70 (0.06)***
Friends: several times a month			0.87 (0.06)***	0.87 (0.06)***
Friends: Once a week			0.96 (0.05)***	0.96 (0.05)***
Friends: several times a week			1.17 (0.06)***	1.17 (0.05)***
Friends: everyday			1.38 (0.05)***	1.38 (0.06)***
Gender: Female			0.08 (0.01)***	0.08 (0.01)***
HDI: 2nd decile		0.37 (0.03)***	0.18 (0.03)***	0.18 (0.03)***
HDI: 3rd decile		0.69 (0.03)***	0.38 (0.03)***	0.38 (0.03)***
HDI: 4th decile		0.85 (0.03)***	0.43 (0.03)***	0.43 (0.03)***
HDI: 5th decile		0.94 (0.03)***	0.45 (0.03)***	0.45 (0.03)***
HDI: 6th decile		1.10 (0.03)***	0.55 (0.03)***	0.55 (0.03)***
HDI: 7th decile		1.13	0.57	0.56

	(0.03)***	(0.03)***	(0.03)***
HDI: 8th decile	1.20 (0.03)***	0.58 (0.03)***	0.58 (0.03)***
HDI: 9th decile	1.29 (0.04)***	0.66 (0.04)***	0.66 (0.04)***
HDI: 10th decile	1.41 (0.04)***	0.75 (0.04)***	0.75 (0.04)***
Health: good		-0.44 (0.02)***	-0.45 (0.02)***
Health: fair		-0.95 (0.02)***	-0.95 (0.02)***
Health: bad		-1.68 (0.03)***	-1.68 (0.03)***
Health: very bad		-2.49 (0.06)***	-2.49 (0.06)***
Partner: not		-0.63 (0.02)***	-0.64 (0.02)***
Religious: 1		-0.05 (0.03)	-0.05 (0.03)
Religious: 2		0.01 (0.03)	0.01 (0.03)
Religious: 3		-0.04 (0.03)	-0.04 (0.03)
Religious: 4		-0.11 (0.03)***	-0.11 (0.03)***
Religious: 5		0.11 (0.03)***	0.11 (0.03)***
Religious: 6		0.16 (0.03)***	0.16 (0.03)***
Religious: 7		0.30 (0.03)***	0.30 (0.03)***
Religious: 8		0.43 (0.03)***	0.42 (0.03)***
Religious: 9		0.56 (0.03)***	0.56 (0.04)***
Religious: very religious		0.68 (0.04)***	0.68 (0.04)***
Work		0.08 (0.02)***	0.08 (0.02)***
GDP growth			0.01 (0.00)**
UR			-0.00 (0.00)**

[1] *Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%; all regressions control for year and region fixed effects.*

[2] *Source: European Social Survey, OECD and the World Bank (2008-2014)*

Table 3. Interaction terms

Variables	Coefficient	Interaction term	Gini coefficient	Observations	Adjusted R-squared
Country: Czech Republic	12.92 (8.58)	-48.03 (32.31)	130.78 (32.86)***	58,135	0.2373
Country: Spain	34.05 (8.69)***	-128.55 (32.61)***			
Country: Finland	31.05 (8.64)***	-115.76 (32.56)***			
Country: UK	35.32 (8.78)***	-132.58 (32.95)***			
Country: Ireland	36.98 (8.82)***	-139.24 (33.09)***			
Country: Norway	38.28 (9.23)***	-144.68 (34.92)***			
Country: Poland	35.25 (8.69)***	-133.40 (32.67)***			
Country: Portugal	36.08 (8.73)***	-136.69 (32.74)***			
Country: Slovenia	39.38 (8.88)***	-150.20 (33.48)***			
Year: 2010	-0.22	0.81	-2.27	58,135	0.2364

	(0.18)	(0.62)	(1.85)		
Year: 2012	-0.37 (0.19)**	1.62 (0.69)**			
Year: 2014	-0.54 (0.17)***	2.33 (0.63)***			
Education: Primary	-2.38 (0.51)***	7.90 (1.63)***	-9.74 (1.71)***	58,135	0.2368
Education: Secondary	-1.45 (0.31)***	5.56 (0.96)***			
Education: Tertiary	-1.16 (0.31)***	4.60 (0.97)***			
HDI: 2nd decile	-0.00 (0.22)	0.62 (0.74)	-5.92 (1.58)***	58,135	0.2362
HDI: 3rd decile	0.10 (0.22)	0.91 (0.74)			
HDI: 4th decile	0.24 (0.22)	0.64 (0.74)			
HDI: 5th decile	0.21 (0.23)	0.82 (0.77)			
HDI: 6th decile	0.36 (0.23)	0.62 (0.77)			
HDI: 7th decile	0.51 (0.23)**	0.17 (0.77)			
HDI: 8th decile	0.50 (0.23)**	0.27 (0.80)			
HDI: 9th decile	0.47 (0.24)*	0.64 (0.82)			
HDI: 10th decile	0.20 (0.25)	1.84 (0.82)**			
HDI growth	0.12 (0.03)***	-0.32 (0.12)***	-4.10 (1.54)***	56,679	0.2383
Same employment relation: no	-0.21 (0.11)*	0.64 (0.39)*	-5.63 (1.51)***	58,135	0.2363
Employment: self-employed	-0.04 (0.17)	0.19 (0.56)	-5.04 (1.53)***	53,874	0.2375
Employment: family business	-0.47 (0.41)	1.82 (1.39)			
Never have had a job	0.44 (0.25)*	-1.14 (0.85)	-7.42 (2.42)***	26,713	0.2463
Contract: limited	-0.22 (0.16)	0.47 (0.54)	-5.40 (1.64)***	47,247	0.2411
Contract: no contract	0.36 (0.21)*	-1.06 (0.67)			
Have never lived with a child: no	0.10 (0.13)	-0.37 (0.45)	-4.69 (1.95)**	35,371	0.2474
Victim of a crime last 5 years: no	0.02 (0.13)	0.45 (0.44)	-5.38 (1.52)***	58,049	0.2370
Importance of safety: like me	-0.25 (0.13)*	0.49 (0.44)	-5.79 (1.53)***	57,016	0.2375
Importance of safety: somewhat like me	-0.13 (0.19)	-0.27 (0.54)			
Importance of safety: a little like me	-0.32 (0.19)	0.27 (0.66)			
Importance of safety: not like me	-0.46 (0.23)**	1.10 (0.78)			
Importance of safety: not like me at all	-2.07 (0.53)***	7.19 (1.82)***			
People try to be helpful: 1	0.37	-1.65	-4.48	57,970	0.2517

	(0.44)	(1.47)	(1.82)**		
People try to be helpful: 2	-0.35	1.00			
	(0.38)	(1.26)			
People try to be helpful: 3	0.17	-0.45			
	(0.36)	(1.19)			
People try to be helpful: 4	0.50	-1.42			
	(0.36)	(1.19)			
People try to be helpful: 5	0.33	-0.31			
	(0.34)	(1.14)			
People try to be helpful: 6	0.33	0.01			
	(0.35)	(1.18)			
People try to be helpful: 7	0.23	0.71			
	(0.35)	(1.17)			
People try to be helpful: 8	0.31	1.11			
	(0.36)	(1.20)			
People try to be helpful: 9	0.78	0.29			
	(0.44)*	(1.48)			
People try to be helpful: 10	-0.11	3.78			
	(0.52)	(1.75)**			
Minority ethnic group: no	0.20	0.18	-5.35	58,135	0.2362
	(0.26)	(0.85)	(1.70)***		
Discriminated by nationality	-1.36	2.87	-5.17	58,135	0.2368
	(0.54)**	(1.73)*	(1.49)***		
Discriminated by colour or race	-1.19	1.92	-5.09	58,135	0.2371
	(0.51)**	(1.59)	(1.49)***		
Allow immigrants from poorer countries outside Europe: some	-0.12	-0.21	-4.80	56,964	0.2385
	(0.18)	(0.62)	(1.58)***		
Allow immigrants from poorer countries outside Europe: a few	-0.23	-0.11			
	(0.18)	(0.62)			
Allow immigrants from poorer countries outside Europe: none	-0.47	0.16			
	(0.21)**	(0.70)			
Importance of loyalty: like me	-0.29	0.36	-5.24	57,015	0.2429
	(0.12)**	(0.39)	(1.52)***		
Importance of loyalty: somewhat like me	-0.39	-0.10			
	(0.17)**	(0.56)			
Importance of loyalty: little like me	-0.34	-0.70			
	(0.26)	(0.86)			
Importance of loyalty: not like me	0.43	-3.30			
	(0.49)	(1.69)*			
Importance of loyalty: not like me at all	1.34	-6.81			
	(1.23)	(4.26)			
Right-Left: 1	0.25	-1.53	0.54	52,762	0.2365
	(0.48)	(1.63)	(1.84)		
Right-Left: 2	0.88	-3.55			
	(0.39)**	(1.32)***			
Right-Left: 3	0.87	-3.58			
	(0.35)***	(1.18)***			

Right-Left: 4	0.56	-2.38
	(0.35)*	(1.18)**
Right-Left: 5	0.98	-3.35
	(0.32)***	(1.09)***
Right-Left: 6	0.64	-2.21
	(0.35)*	(1.20)**
Right-Left: 7	0.84	-2.80
	(0.35)**	(1.20)**
Right-Left: 8	0.84	-2.51
	(0.37)**	(1.25)**
Right-Left: 9	0.79	-1.70
	(0.49)*	(1.70)
Right-Left: Right	0.44	-0.34
	(0.46)	(1.57)

[1] *Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%; all regressions control for year and region fixed effects and all the variables included in the model (4) of table 2..*

[2] *Source: European Social Survey, OECD and the World Bank (2008-2014)*