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Inequality and Happiness

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Abstract

This paper examines the relationship between inequality and happiness through the lens of heterogeneous values, beliefs and inclinations. Drawing upon opinion data from the European Social Survey for twenty-three countries, we find that individual views on a wide range of themes can be effectively summarized by two orthogonal dimensions: moderation and inclusiveness. The former is defined as a tendency to take mild stands on issues rather than extreme ones; the latter is defined as the degree of support for a social model that grants equal rights and opportunities to everyone who willingly subscribes to a shared set of rules, regardless of background and circumstances. These traits matter when it comes to how inequality affects subjective well-being; specifically, those who are either more moderate or more inclusive than their average compatriot tend to dislike inequality. With reference to moderation, inequality aversion can be read in terms of a desire for stability: people who are reluctant to take strong stands probably dislike conflict, tension and unrest, which normally accompany inequalities. With reference to inclusiveness, the main element at play is likely to be distress accruing to a perception of unfairness.

Keywords: Happiness, inequality, heterogeneity
JEL Codes: D31, D63

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1 Introduction

Does inequality have an effect on well-being? Is this effect uniform across countries and people? These are very important research questions, if only on account of the political relevance of debates on redistribution. Through the decades, different disciplines have offered a number of answers.

Economists have proposed to qualify inequality according to the effect it exerts on material proxies for aggregate welfare. A large literature, reviewed in Aghion, Caroli and García-Peñalosa [1999] and Bertola [1999], studies the correlations between income inequality and the growth rate of GDP per capita. Inequality seems to emerge as bad for growth whenever it causes conflict and unrest, undermining institutions and markets [Alesina and Perotti, 1996; Keefer and Knack, 2002], and whenever it results in distortionary redistribution [Persson and Tabellini, 1996] or suboptimal investment in schooling on the part of the disadvantaged [Galor and Zeira, 1993]. However, the significance of these conclusions wavers; results have been found to depend on the temporal or spatial reference frame [Forbes, 2000].

Moral philosophers and social choice scholars generally base their evaluations on a theory of justice: inequality is acceptable only insofar as it can be considered fair. Most proposals define fairness with reference to the concepts of original position and veil of ignorance, as defined by Rawls [1971]: a fair allocation of resources is such that it would be chosen by a planner who has no information about what his own social position will be in the post-allocation world. When it comes to actual income distributions, the prevalent consensus is that disparity accruing to different levels of effort is acceptable, disparity accruing to mere circumstances is not [Dworkin, 1981a and 1981b; Cohen, 1989; Arneson, 1989]; researchers divide over where the line between the two should be drawn [Roemer, 2000; Fleurbaey, 2001; Lefranc, Pistolesi and Trannoy, 2006], and sometimes deeper objections emerge over the ultimate purpose of egalitarian thought [Anderson, 1999].

The two camps might be partly coming together. Economists have been showing interest in the links between equality of opportunity and observed income mobility [Jencks and Tach, 2006]; strategies for the measurement of chances are being investigated [Bourguignon, Ferreira and Menendez, 2003]. Still, the end of disciplinary isolation has not been without pain. A paradigmatic controversy followed the release of the World Development

Report 2006 [World Bank, 2005], a document prepared annually by World Bank economists in order to assess the state of global poverty. The World Bank recommended the promotion of equal opportunity policies in developing countries on the grounds that they stimulate growth, only to be called to task by Roemer [2006] on the subject of why we would need evidence on GDP in order to sponsor a policy that already has the ethical edge over alternatives.

The problem seems to lie in the nature of the subject. The very choice of either justice or growth as a yardstick for the ranking of alternative distributions inevitably calls into question the intellectual and ethical acceptability of values and representations lying behind the adoption of such a metric; discussions polarize over what could be best described as articles of faith.

The availability of data on subjective well-being or "happiness", progressively gaining credibility in economics after long employment in psychology [Frey and Stutzer, 2002; Di Tella and McCulloch, 2006], might offer a way to dodge the dilemma: rather than ask whether inequality is good or bad *per se*, we could ask whether people like it or not. The qualification of inequality based on whether it makes people feel happy is, technically, just as arbitrary as the ones based on whether it spurs economic growth or complies with certain assumptions on justice. Still, it appears to be less likely to ruffle feathers.

More importantly, the happiness perspective might be particularly suited to the problem in a methodological sense, on account of its intrinsic focus on heterogeneity. While it is very hard to find someone who is made happy by blatant misfortunes such as illness or widowhood, the connection between subjective well-being and most of its determinants has been found to be in the eye of the beholder. Not only do different people have different baseline levels of happiness, mainly dictated by structural psychological inclinations [Kahneman and Kruger, 2006], but each person seems to map events of life into happiness levels in a different way, depending on individual beliefs[1]; see

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[1]For example, Frey and Stutzer [2005] show that a worker's ethnic background is important in determining how workplace policies in favor of racial integration affect her happiness. Becchetti, Castriota and Giuntella [2006] use data on subjective well-being to estimate how the trade-off between inflation and unemployment differs across social groups, following the idea of community group indifference maps originally provided by Chossudovsky [1972]. McFarlin and Rice [1992] prove that subjective facet importance is a non-negligible factor in determining overall levels of job satisfaction. Kohler, Behrman and Skytthe [2005] find that the impact of parenthood on happiness can be different for

Rojas [2005 and 2007] for an outline of the conceptual-referent theory of happiness, centered around the idea that

> the subjective evaluation of life as a whole is influenced by a person's notion of what a happy life is.

Inequality, as suggested by the heated debate in the literature, belongs to the set of political and emotional wedge issues that positively demands a particular effort in understanding how features of the self filter facts into welfare.

This paper explores the connection between income distribution and happiness, attempting to bring together suggestions from different strains of literature in a simple model. We posit that people can like or dislike inequality for a variety of reasons, including but not limited to how they feel about their own position in the social pecking order, whether they read inequality as a proxy of opportunity or not, what moral judgement they have about unequal distribution of privileges independent of their personal circumstances, and what level of importance they attach to the issue. We find that, while most of these factors matter individually, only the interaction between them might be the key to drawing a precise map of attitudes.

The paper is structured as follows. Section 2 provides a review of the literature on inequality and happiness. Section 3 introduces our model. Section 4 describes the data. Section 5 presents the results. Section 6 concludes. The Appendix provides further tables.

2 The literature

Many papers have been written on the relationship between inequality and happiness. A large majority incorporate the idea that the connection is strongly subjective in nature; the individual filter has been analyzed from different angles. The positional approach is perhaps most popular: people do not like to see inequality because it makes them feel bad about their own circumstances relative to others. The relatively poor resent their economic inferiority (envy), and the relatively rich resent their enjoyment of privileges that others do not have access to (guilt). In their seminal paper on cooper-

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mothers and fathers.

ative behavior in games, Fehr and Schmidt [1999] term the combination of these feelings "self-centered inequity aversion".

The theme of envy has illustrious precedents: the idea that upward comparison leads to dissatisfaction dates as far back as Veblen [1899], and was greatly expanded upon by Easterlin [1974] and Hirsch [1976] in their studies on adaptive expectations and status signaling. If we assume that individual desire for consumption is influenced by social standards, then we can add a further nuance to the argument: the comparison with others becomes, to a certain extent, also a comparison with one's own aspirations, and people who lag behind the rest of society are unhappy not only because they feel they are below others, but also because they feel powerless to achieve their own goals. Psychology offers a wide class of "have-want" models for the analysis of such inclinations, recently adopted by economists interested in happiness [Stutzer, 2004; Easterlin, 2006]. Clark and Oswald [2006] find that the self-reported satisfaction of British workers is negatively related with their benchmark wage, i.e. the average wage earned by workers with the same qualifications and experience; Luttmer [2005] has similar results for the United States. There are even indications that this type of feeling might not be exclusive to humans, as shown by the experiments on monkeys conducted by Brosnan and de Waal [2003]: capuchin monkeys trained to exchange rock tokens for food react badly whenever they perceive that they are being shortchanged compared to their peers.

The idea of guilt as an engine of inequality aversion on the part of the rich, on the other hand, is not as unanimously accepted. Several results in behavioral economics appear to prove that downward comparison might curb happiness because of a number of factors, including but not limited to feelings of altruism, a yearning for justice, fear that a privileged place in society can make one the target of resentment and violence, and even an interest in allocative efficiency. An example of other-regarding concerns is provided by a popular two-player experiment known as the Ultimatum Game, where Player 1 has a sum of money to split with Player 2, and has to propose a partition. If Player 2 accepts the partition, the two players go through with it; if she rejects it, neither gets anything. In several cultures, Player 1 routinely proposes an equal split, and the cases where mainstream predictions from economic theory obtain - Player 1 endows Player 2 with the smallest amount possible and Player 2 accepts the offer - are virtually nonexistent

[Hoffman, McCabe and Smith, 1996; Fehr and Fischbacher, 2002; Henrich *et al*, 2004][2]. However, oft-proven theories of competitive consumption state that utility might be a positive function of the ability to buy goods that not everybody can afford. Also, the role played by perceptions of individual merit seems to be important: Hoffman, McCabe, Shachat and Smith [1994] find that the Ultimatum Game produces outcomes that are less egalitarian when the player who has to propose the partition is chosen by way of a skill-based game rather than randomly. Contrary to the basic version, winners in the first game do not shy away from proposing unequal splits; probably, this happens because they feel that they have earned a prize, and losers seem to accept the logic. A simple generalization of this result to real-life scenarios implies that the rich would feel unhappy over inequality only if they believed that their wealth was undeserved.

This type of consideration calls into play another key aspect of subjectivity, to which a growing body of literature is devoted: interpretation. The link between inequality and happiness is individualized not only because everyone looks at the distribution of income from their own rung in the social ladder, but also because different people may read different features of the world in the same Gini coefficient, and each of them may judge these features differently, based on cultural background and personal values. In their paper on individual beliefs and redistributive policies, Bénabou and Tirole [2005] show that Americans mostly tend to see poverty as an indicator of laziness, and inequality as a signal of mobility. Conversely, Europeans generally believe that the poor are mainly unlucky, and inequality evokes the idea of unearned privilege. Alesina, Di Tella and McCulloch [2004] specifically look at whether the relationship between inequality and happiness varies across the two continents, and come to the same conclusion: the American poor do not dislike inequality (because they believe that adequate effort will save them), the European poor do dislike inequality (because they feel stuck). A wariness of inequality is also found for the share of rich Americans who describe themselves as left-leaning, bringing us back to the close relationship between wealth, perceived fairness, and guilt; aversion to the element of potential loss implicit in mobility is offered as another explanation. Gra-

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[2]There is an ongoing debate about whether this behavior is driven mainly by emotions, by formal ethical considerations on the subject of fairness, or by a mixture of the two [Charness and Rabin, 2002; López-Pérez, 2005].

ham and Felton [2006] find that in Latin America the correlation between inequality and happiness is strongly negative, since most people perceive it as an indicator of persistent social rifts and poverty traps. Clark [2003] estimates the effects on happiness of relative income and absolute level of inequality in Britain; he finds that happiness is increasing in both, indicating that people probably approve of competing but disapprove of losing. On the other hand, Hagerty [2000] estimates a negative link between inequality and happiness on a cross-section of countries.

3 The model

The model we propose integrates the suggestions of the literature discussed above with a systematic attempt at formalizing the precise nature of the process through which agents filter perceptions of inequality into feelings of happiness.

The idea is as follows. Individuals look at the whole distribution of incomes in order to determine their well-being; in particular, they take into consideration, besides their own income, one or more measures of position, and one or more measures of dispersion. The former constitute a reference point for the determination of one's social status, while the latter are read as a description of the social ordering and its degree of persistence. Distributive features are then filtered into happiness on the basis of inclinations, beliefs and values, defined respectively as innate character traits, priors about how the world actually works, and preferences about how it should work [Guiso, Sapienza, and Zingales, 2006]. For the sake of simplicity, we will refer to these three concepts with the sole term "values" in the following.

We want to see whether heterogeneity in personal values implies heterogeneity in the links between inequality and happiness. By focusing on the importance of values, we take a leaf out of the book of a growing literature, which shows how such factors affect economic outcomes through a variety of channels: the attitude towards entrepreneurship [Guiso, Sapienza, and Zingales, 2003], fertility choices [Fernández and Fogli, 2006], organizational behavior [Horii, Jin, and Levitt, 2005], and the quality of public governance [Tabellini, 2006].

Besides the specific values held by an individual, we also take into account the prevailing ones in her reference community; here we follow the

insight offered by psychologists Sagiv and Schwartz [2000], according to whom

> well-being [also] depends upon congruence between personal values and the prevailing value environment.

While this issue might be of secondary importance where perceived status is concerned, it is prominent when we discuss the stance toward inequality as a representation of the social order. The distribution of income is influenced by the institutional and political features of a country, which can be held to reflect general preferences through the voting mechanism; this is a standard result in public choice theory, from the Meltzer and Richard [1981] model onwards. We bring it to the happiness field by conjecturing that the distance in terms of values between an individual and the representative decider in her community might be a proxy of her degree of identification with collective decisions concerning the distribution of income.

Formally, the model can be written as follows:

$$H_i = h(g(f_i(x), |v_i - \overline{v}|), q_i) \tag{1}$$

where H_i is the happiness level for agent i, and h is the function describing the technology of happiness production. The function g describes how the distance between v_i, the vector of personal values for individual i, and the average values in her community $\overline{v}$ interacts with the perceived density function of income $f_i(x)$ in order to produce a judgement on distributive matters. Finally, q_i is a vector of controls, including known determinants of happiness such as health and marital status.

4 The data

The empirical analysis is based on data from the second round of the European Social Survey, carried out in 2004. The Survey, funded by the European Commission, the European Science Foundation and several national partners, "has been mapping long-term attitudinal and behavioural changes in Europe's social, political and moral climate" since 2001 [`www.europeansocialsurvey.org`, 2007]. It is directed by an international Central Co-ordinating Team based in London, and carried out every two years

by independent national teams; a single questionnaire is created in English, then translated into several languages. Contrary to other surveys of a similar nature, the sampling design is entirely probabilistic. In countries where lists of households are available, the sampling unit is the household; otherwise, the sampling unit is the street address, then a household living at that address is chosen at random. In both cases, the final respondent is an adult chosen at random among the members of the household.

Each round has a core module which covers twelve broad topics, ranging from demographics and financial circumstances to political engagement and subjective well-being. Several rotating modules, which vary from round to round, complement the core module. We focus on the second round only, disregarding the first, not only because it covers a larger number of countries, but also because it offers a rotating module on economic morality, which helps to ascertain individual attitudes toward a wide range of economic behavior. At the time of writing this paper, data for twenty-six countries had been released to the public; we included twenty-three[3]. Most national samples comprise between 1,500 and 2,500 observations, for a total of 43,650 and all come with design weights for national estimates. For Europe-wide estimates, population weights are provided that correct for the imbalance in sampling fractions.

Item non-response is a serious problem in the ESS; data on income and data on personal values, both of which are essential to our model, are particularly affected. We tried to balance quality and quantity through a mixture of model-based imputation, variable selection and data deletion, as discussed in Sections 4.1 and 4.2. The final sample includes 35,335 observations, or 80.95 per cent of the original ESS sample (Table 1 and A.1), with national samples ranging between 507 households for Iceland and 2,370 households for Germany.

The ESS questionnaire can be found on the Web, along with methodological documentation. In the following, we skip a detailed discussion of variables that were merely taken in their original state and inserted in our estimates as controls; instead, we focus on the treatment of income variables, and on the choice of indicators for beliefs and values.

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[3]We excluded Italy, Turkey and Ukraine on account of heavy item non-response for questions related to values and beliefs.

Table 1: **Sample size and sampling fraction, by country[+]**

Country	N	Sampling fraction (‰)	Country	N	Sampling fraction (‰)
Austria	1,602	0.197	Luxembourg	1,295	2.868
Belgium	1,636	0.157	Netherlands	1,745	0.107
Czech Republic	1,781	0.174	Norway	1,710	0.374
Denmark	1,248	0.231	Poland	1,307	0.034
Estonia	1,289	0.954	Portugal	1,626	0.155
Finland	1,887	0.362	Slovakia	1,022	0.190
France	1,404	0.023	Slovenia	1,152	0.577
Germany	2,430	0.029	Spain	1,321	0.031
Greece	2,048	0.185	Sweden	1,754	0.195
Hungary	1,153	0.114	Switzerland	1,860	0.253
Iceland	507	1.745	United Kingdom	1,755	0.029
Ireland	1,803	0.448	**Total**	**35,335**	**0.087**

[+]Sampling fractions are computed based on population statistics for 1.1.2004, as provided by Eurostat in *Population and Social Conditions, 2005/15*.

4.1 Income variables

The ESS questionnaire features the following item:

> [I]f you add up the income from all sources, which letter describes your household's total net income? If you don't know the exact figure, please give an estimate.

Respondents are shown a card listing twelve brackets of weekly income, each labeled with a different letter; the scale is also converted to monthly and yearly equivalents for the sake of clarity. The brackets are of unequal size, smaller at the bottom and larger at the top; the extreme ones are open-ended, respectively including any income below 40 euro per week and any income above 2,310 euro per week.

The item non-response rate for this question totals 19.61 per cent of the final sample, and is unevenly distributed across countries: in Norway and Sweden it is below 3 per cent, while in Portugal and Greece it exceeds 30 per cent. Since the willingness to provide income information is very likely to be correlated with culture and values, as suggested on an intuitive level by the geographical distribution of response rates, the mere elimination of observations with missing values would probably introduce selection bias and distort the results of subsequent analyses.

For each country, we estimate a simple logistic regression linking income class with household size and with the answer to the following question:

> Which of the[se] descriptions comes closest to how you feel about your household's income nowadays: living comfortably on present income, coping on present income, finding it difficult on present income, or finding it very difficult on present income?

The model turns out to have good explanatory power for all countries, with the share of concordant observation-prediction pairs ranging from 68.2 to 87.0 per cent depending on the country. We therefore employ it for imputing missing values: the resulting distribution is close to the original one (Table 2).

Table 2: **Count and distribution of income classes**

Class	Absolute frequencies			Relative frequencies		
	Imputed	Not Imputed	Total sample	Imputed	Not Imputed	Total sample
1	96	409	505	1.39	1.44	1.43
2	331	1,394	1,725	4.78	4.91	4.88
3	608	2,176	2,784	8.77	7.66	7.88
4	1,185	4,068	5,253	17.10	14.32	14.87
5	919	4,033	4,952	13.26	14.20	14.01
6	804	3,255	4,059	11.60	11.46	11.49
7	645	2,772	3,417	9.31	9.76	9.67
8	678	2,799	3,477	9.78	9.85	9.84
9	980	4,540	5,520	14.14	15.98	15.62
10	406	1,941	2,347	5.86	6.83	6.64
11	147	605	752	2.12	2.13	2.13
12	132	412	544	1.90	1.45	1.54
Sample total	6,931	28,404	35,335	100.00	100.00	100.00
Row frequencies	-	-	-	19.62	80.38	100.00

Even after taking care of missing data, we still are left with income classes, not income levels: the only information available on those is limited to the five per cent of the original sample who answered a question on the individual net pay of the respondent alone for his or her main occupation. However, classes are not adequate to the estimation of position and dispersion measures, and neither are simple imputation procedures based on random draws from uniform distributions within the classes. First, the distribution of income is generally log-normal, implying that the distribution within classes is skewed to the left for low incomes and to the right for high

incomes; the assumption of uniformity results in (probably asymmetrical) overestimation of the weight on distribution tails, yielding in turn unpredictable effects on inequality measures. Also, we need to take demographic structure into account, especially because our sample includes both Western and Eastern European countries; if, say, larger households are routinely closer to the upper bound of their income class than smaller households, neglecting household size and composition will lead to underestimation of incomes in countries with higher fertility rates.

In order to take these important issues into account, we undertake a further imputation step based on stratified density estimation. For each country and for each household size, a Gaussian kernel of the whole distribution is estimated; the resulting density is then normalized within each class, so that household incomes can be drawn at random. In order to perform this operation in the extreme classes, we apply bottom-coding and top-coding: the lowest bracket is closed at null income and the upper bracket is closed at 150,000 euro.[4]Amounts thus obtained are equivalized with the modified OECD equivalence scale. The weighted mean, median and standardized interquartile range for the distribution of equivalent incomes are then computed both at the national level and separately for each region, following the EU-NUTS2 partition where the data allows, and the EU-NUTS1 partition otherwise.

In our regressions, we use regional indicators of the distribution of income rather than national ones. We follow an idea that is present throughout the literature reviewed in Section 2: people are imperfectly informed about the income of others, and in general the knowledge that person A has about the standard of living of person B is inversely proportional to the geographical distance between the two, both because of direct exposure and the impact of local news media. This idea is incorporated in our model by assuming that people derive their distributional facts from short-range information only.[5]

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[4]Different choices, including the use of country-specific brackets, have been subjected to testing and do not appear to exert any considerable influence on the final estimates.

[5]This strategy ignores the suggestion provided by public choice theory according to which perceptions such as the one we are studying should be reconstructed based both on where an agent lives and on his degree of interest in the phenomenon at hand: someone who follows economic news closely might have a precise idea of the national and even international distribution of income, while someone who is uninterested in the matter might have a knowledge that is limited to her immediate neighborhood. The hypothesis has been proven correct in several occasions, but we cannot employ it in our empirical work for two reasons. Even if we were able to identify groups with different informational scopes,

4.2 Values

The ESS offers hundreds of value-related questions, but most of them are only answered by a share of the sample. We need to select a subset of variables that strike a reasonable balance between the richness of individual information and the availability of valid observations. Once this goal is attained, a small number of synthetic indicators must be produced so as to provide convenient input for regression analysis.

We go about the first task by classifying available information on beliefs and values into six broad thematic categories: trust, solidarity, legality, civic engagement, the family, and diversity. Within each domain, the three variables with the lowest incidence of item non-response are chosen, for a total of eighteen variables (Table A.2). Note that we do not focus exclusively on concepts that immediately appear to have an intuitive connection with the outlook on inequality: we want to eschew any self-fulfilling priors, such as the idea that a favorable disposition to solidarity matters more than, say, the level of trust toward others in determining what kind of income distribution a person desires.

The eighteen items are then subjected to multiple correspondence analysis, a form of multivariate analysis suitable for qualitative data. This technique is essentially a version of principal component analysis based on the chi-square metric rather than on the euclidean metric; for details, see Benzécri [1973] and Lebart, Morineau and Warwick [1984]. In layman's terms, we study how opinions expressed by individuals on a large set of topics combine along a limited number of orthogonal dimensions called factors, which are entirely endogenous to the data, and should serve as a way of summarizing and interpreting it.[6]

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which may be possible in the light of ESS items on newspaper-reading and TV-watching habits, the sample size would not allow us to estimate inequality at the appropriate level for the less informed, say town or district. Also, we would need assumptions concerning not only the relationship between the self-reported degree of information and the scope of knowledge about incomes, but also the distribution of the error term, which would probably be both higher and more variable for the less informed. These two processes appear to introduce a degree of arbitrariness that offsets the gains.

[6]This micro-level perspective, while common in sociology [Inglehart and Baker, 2000], so far has not been used frequently by economists, who prefer to define types based on exogenous partitions that function as proxies for inherited culture and customs: religious denomination, nationality, ethnicity. There are valid reasons for this choice: most importantly, the set of priors and preferences accruing to a certain type of religious doctrine or to a certain national community has been shown to be so slow-moving that reverse causation from almost any dependent variable to those features can be ruled out, at least

The estimation of multiple correspondences yields a reasonably good fit, with the first two factors explaining 79.4 per cent of the total variance generated by the eighteen individual variables (Table 3). Factor loadings are reported in Table A.3, complete with relevant fit statistics.

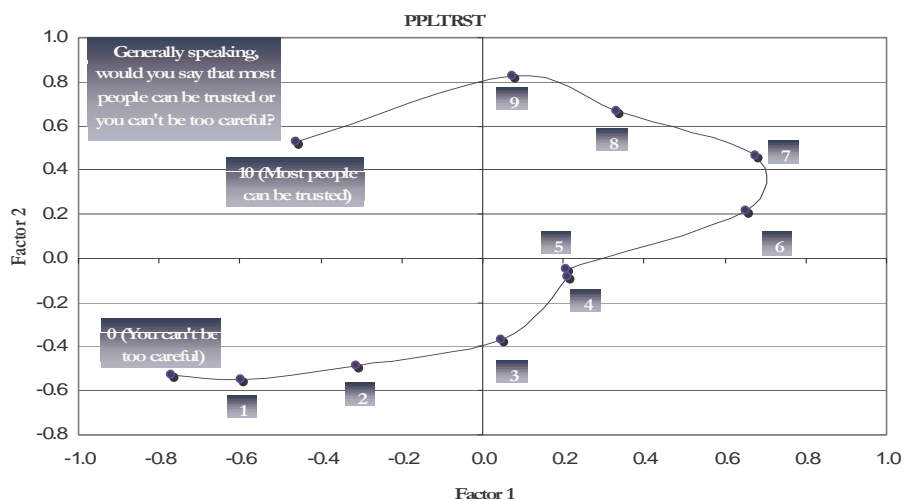Table 3: **Inertia and explained variance for multiple correspondence analysis**[+]

Factor	Inertia	Adjusted Inertia (Benzécri)	Variance explained (percent)	Cumulative variance explained	Goodness of fit
1	0.16374	0.01312	48.88	48.88	***********************
2	0.14101	0.00819	30.5	79.38	***************
3	0.09443	0.00169	6.31	85.69	***
4	0.08447	0.00094	3.49	89.18	**
5	0.08029	0.00069	2.56	91.74	*
6	0.07641	0.00049	1.82	93.55	*
7	0.07391	0.00038	1.41	94.96	*
8	0.07245	0.00032	1.19	96.15	*
9	0.07198	0.00030	1.13	97.28	*

+Only factors that explain one per cent or more of global variance are included in the table.

Factor 1 explains 48.9 per cent of total variance. With reference to the question "Generally speaking, would you say that most people can be trusted, or that you can't be too careful?", for which an 11-point response scale is offered where 0 means "You can't be too careful" and 10 means "Most people can be trusted", positive factor loadings are estimated on scores 4 to 9; they are highest for scores 6 and 7. Negative loadings appear for very low scores and for the top score (Figure 1). For the question "When jobs are scarce, men should have more right to a job than women", positive loadings are observed for "Agree", "Neither agree nor disagree", and "Disagree", with the latter option being also the one with the highest estimate; negative loadings are found for "Strongly agree" and "Strongly disagree". In the case of "How wrong is it for someone to sell something second-hand and conceal some or all of its faults?", positive loadings again apply for the intermediate response options, "A bit wrong" and "Wrong", while "Not wrong at all" and "Seriously wrong" are associated with negative estimates. A similar U-shaped profile for loadings emerges for the five-point agreement

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in the short run. We try to simultaneously preserve the high degree of freedom and detail allowed by the latent variable approach and avoid the problems of causality by limiting the analysis to beliefs and preferences that appear to be set deep in the psychological makeup of individuals or in their upbringing, and should therefore not be influenced by the level of happiness experienced in a given period

Figure 1: **An example of factor loadings**

PPLTRST

Generally speaking, would you say that most people can be trusted or you can't be too careful?

10 (Most people can be trusted)

0 (You can't be too careful)

Factor 2

Factor 1

scale proposed for "Society would be better off if everyone just looked after themselves", for the four possible answers to "To what extent do you think your country should allow people of a different race to come and live here?", and for nearly all other questions.

The picture painted by the analysis of loadings seems to suggest that Factor 1 can be tentatively interpreted as an indicator of *moderation*, defined as the tendency to express mild opinions rather than extreme ones: individuals who score high on this factor are more likely to report agreement, disagreement or (less frequently) lack of opinion with respect to any given statement than to express strong agreement or strong disagreement. The inclination towards moderation measured by the factor turns out to be independent of the specific beliefs held: negative loadings are consistently estimated for extreme values of the agreement scale on items as different as "A woman should be prepared to cut down on her paid work for the sake of her family" and "Gay men and lesbians should be free to live as they wish".

Factor 2 explains 30.5 per cent of total variance. Positive factor loadings are associated with high levels of trust (score 6 or above), disagreement or strong disagreement with a men-first policy in the job market, thorough condemnation of fraud, disagreement or strong disagreement with the idea that society would be better if everyone looked after themselves, and openness towards immigrants of different races. Individuals who score high on this

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Figure 2: **Country means for factor scores**
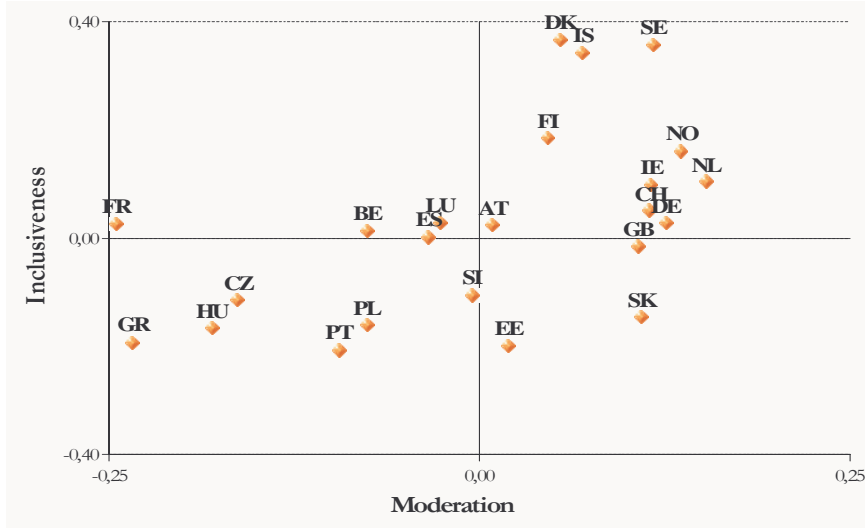
axis also believe that citizens should spend some of their free time helping others, state that they are not afraid of being treated dishonestly, appear supportive of gender equality under a number of perspectives, and actively participate in politics.

The joint consideration of these elements hints as a possible interpretation of Factor 2 in terms of *inclusiveness*, defined as support for the extension of rights and opportunities to everyone, regardless of background and circumstances. There is also an element of social cohesion based on the consistent subscription to a shared set of rules.

Figure 2 represents country means on the two factor axes. Scandinavia scores high on both moderation and inclusiveness, while Mediterranean countries and Eastern European ones are located in the opposite quadrant. Central European and Anglophone countries display positive scores for moderation, and hover around the mean with respect to inclusiveness.

The analysis of the correlation matrix between factor scores and other individual traits reveals that associations between values, demographics and social class are weak, with the Pearson correlation coefficient reaching a maximum of 0.39 in the case of inclusiveness and the number of years spent in formal education. Income also feebly correlates with both moderation (0.12) and inclusiveness (0.23), while age seems to have no correlation with

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the former (-0.07) and a slightly negative correlation (-0.14) with the latter.

5 Results

We want to test whether heterogeneity in values, as summarized in our two-factor representation, also implies heterogeneity in the links between inequality and happiness. To this end, we run a set of ordered logits where the degree of happiness in a scale ranging from 0 to 10 appears on the left-hand side, while a number of variables related to the distribution of income at the regional level appear on the right-hand side both in raw form and interacted with measures of distance from national means in terms of moderation and inclusiveness. These core variables are supplemented by a large number of controls that are routinely used in happiness regressions.

Table 4 presents our results. Values seem indeed to have a role in the way the distribution of income affects subjective well-being. The regression coefficient for our indicator of inequality, the standardized interquartile range of equivalent incomes at the regional level, amounts to 0.24, and after correction of standard errors for clustering it is barely significant. However, the interaction between the same indicator and individual distance in moderation from the national mean has a coefficient of -1.27, significant at the 1 per cent level; the interaction between inequality and individual distance in inclusiveness from the national mean reports a coefficient of -0.63 and it is significant at the 5 per cent level.

Table 4: **Ordered logit estimates for happiness**

	Estimate	**Std Err$^+$**	**Pr>ChiSq**
Equivalent income			
Log own	0.144	0.024	0.000
*Moderation *(distance from mean)*	-0.081	0.070	0.248
*Inclusiveness *(distance from mean)*	-0.160	0.073	0.028
Std interquartile range, regional	0.248	0.150	0.098
*Moderation	-1.272	0.282	0.000
*Inclusiveness	-0.627	0.307	0.041
Log median, national	0.466	0.171	0.006
*Moderation	-0.026	0.252	0.917
*Inclusiveness	-0.469	0.330	0.156
Log median, regional	-0.105	0.165	0.525
*Moderation	-0.201	0.253	0.426
*Inclusiveness	0.225	0.349	0.520
Demographics			
Gender: female	0.115	0.038	0.002
Age	-0.066	0.009	0.000

Table 4: **Ordered logit estimates for happiness (continued)**

	Estimate	Std Err[+]	Pr>ChiSq
Age squared	0.001	0.000	0.000
Self-reported health (baseline=very good)			
Good	-0.578	0.053	0.000
Fair	-1.062	0.075	0.000
Bad	-1.756	0.114	0.000
Very bad	-2.447	0.334	0.000
Marital status (baseline=married or in registered cohabitation)			
Separated	-0.964	0.148	0.000
Divorced	-0.635	0.073	0.000
Widowed	-0.927	0.076	0.000
Never married	-0.647	0.049	0.000
Children			
Children living at home	-0.058	0.049	0.233
Children living outside the home	0.146	0.051	0.004
Social ties			
At least one close friend	0.588	0.080	0.000
Frequency of social activity	0.157	0.017	0.000
Location (baseline = city center)			
Suburbs or outskirts of big city	-0.004	0.072	0.957
Town or small city	0.065	0.062	0.291
Country village	0.125	0.063	0.047
Farm or home in countryside	0.288	0.108	0.008
Feeling of safety in own neighborhood (baseline = very safe)			
Safe	-0.084	0.043	0.053
Unsafe	-0.180	0.061	0.003
Very unsafe	-0.332	0.115	0.004
Job status (baseline = employee)			
Student	0.060	0.080	0.453
Unemployed, looking for job	-0.558	0.116	0.000
Unemployed, not looking	-0.374	0.148	0.011
Permanently sick or disabled	0.085	0.139	0.540
Retired	0.168	0.067	0.012
Community or military service	0.258	0.279	0.355
Housework	0.051	0.066	0.439
Other	-0.206	0.183	0.259
Other factors			
Years in formal education	-0.002	0.006	0.775
Intensity of religious belief	0.054	0.009	0.000
Belongs to discriminated group	-0.538	0.091	0.000
Homeowner	0.102	0.044	0.021
Marginal effect of distance from the mean in values			
Moderation	3.922	0.715	0.000
Inclusiveness	5.062	1.065	0.000
Model fit statistics:			
Prob > Chi Square (Wald)	0.000		
Pseudo R^2	0.061		

+Standard errors are adjusted for clustering at the country level (inclusion of national median of equivalent income in the regression)

In other words, people who are more moderate or more inclusive than

their fellow citizens tend to dislike inequality more. Since we are discussing moral traits, it is quite hard to give a strict quantitative interpretation to the absolute values of regression coefficients; but the distances from national means in terms of moderation and inclusiveness have similar standard deviations, respectively estimated at 0.38 and 0.35, and it is therefore reasonable to say that, for a given relative distance from the mainstream, increases of inequality affect more or less twice as badly those who are distant because of moderation than those who are distant because of inclusiveness.

The result can be interpreted as follows: those who are more moderate than their compatriots might dislike inequality because it acts as a trigger for social tension, conflict and unrest, as described by the literature referenced in Section 1; those who are particularly inclusive might dislike inequality because they perceive it as morally unfair. The former motive, known in the literature as instrumental inequality aversion, appears to be stronger than the latter, substantive inequality aversion.

Values appear to be significant also when it comes to deriving happiness from one's own income. The net effect of the logarithm of equivalent income is positive, but turns negative when interacted with inclusiveness: this may be an example of the guilt effect outlined in Section 2. The interaction elements are not significant when it comes to the impact exerted on happiness by the general standard of living, as expressed by the national median of equivalent incomes: the marginal effect is positive and significant, the interaction terms are not significant. Finally, no comparative effects as measured by the effect of the regional median of equivalent income emerge from our model.

Moderation and inclusiveness in excess of the general reference level also have a positive marginal impact on happiness, with coefficients of 3.92 and 5.06 respectively. Where inclusiveness is concerned, this is consistent with studies that show how higher levels of trust and of general openness toward other people are associated with higher happiness. In the case of moderation, the result might reflect a comfortable distance from events, inducing an ability to filter them into feelings in a more level-headed manner. The intuition is particularly suitable to our sample, entirely composed of European countries where disastrous phenomena such as famine, disease epidemics, war on domestic territory and destruction wrought by extreme weather conditions are virtually unknown. While a strong disposition toward moderation

might not be able to curb unhappiness from such occurrences, it can reduce the impact of run-of-the-mill unpleasant happenings. This explanation is, however, entirely speculative.

Finally, results on the set of controls are entirely aligned with previous literature. Among the circumstances positively associated with happiness we find good health, marriage or cohabitation, residence in a safe neighborhood, intense religious belief, and the enjoyment of close friendships. On the other hand, belonging to a discriminated group, having limited social interaction, and living in a large city exert a negative impact.

We have so far looked at moderation and inclusiveness as separate dimensions. In the spirit of understanding whether the interaction of the two might impact happiness directly, and also as a manner of carrying out sensitivity analysis, we estimated two further specifications of our regression: the first is based on the simple consideration of the Cartesian quadrants defined by the two orthogonal factors, the second is founded on non-hierarchical *k-means* cluster analysis [Anderberg, 1973; Everitt, 1980].

Table A.4 shows that significant inequality aversion is found in the two high-moderation quadrants; high inclusiveness intensifies the phenomenon slightly, but it is not a requisite for its existence. The coefficient for interaction between inequality and the high-inclusiveness, low-moderation quadrant dummy is not significant, although it has the expected negative sign.

Cluster analysis reveals the presence of four clusters, described in Table A.5. Regressions that include cluster dummies (Table A.6) give insights similar to those presented above: significant inequality aversion is found for Cluster 2, which comprises people with high moderation scores, while a non-significant negative coefficient is found for the highly inclusive individuals in Cluster 4.

In general, when below-average moderation is accompanied by above-average inclusiveness, the impact of the former appears to outweigh the impact of the latter, consistently with the results presented above. It is also possible that intra-class variability affects the estimates more when it comes to inclusiveness than when it comes to moderation, notwithstanding similar distributions and independent of whether standardization procedures are employed to neutralize outliers, suggesting that the effect of relative inclusiveness goes in the same direction but is both weaker and more markedly non-linear than the effect of relative moderation.

6   Conclusions

This paper set out with the goal of understanding whether it is possible to model the relationship between inequality and happiness in a way that is consistently appropriate across domains and takes into account both positional and interpretational effects. We looked at the heterogeneity of values, inclinations and beliefs as a possible unifying explanation for the existence of different reactions to inequality.

Drawing on data for twenty-three countries from the second round of the European Social Survey, carried out in 2004, we found that individual views on a wide range of themes can be effectively summarized by two orthogonal dimensions: moderation and inclusiveness. The former is defined as a tendency to take mild stands on issues rather than extreme ones; the latter is defined as the degree of support for a social model that grants equal rights to everyone who willingly subscribes to a shared set of rules, regardless of background and circumstances.

We ran a set of ordered logits where the degree of happiness on a 0-10 scale appears on the left-hand side, while distributional indicators interacted with individual distances from country means in terms of moderation and inclusiveness appear on the right-hand side, supplemented by a set of standard controls. We chose to look at distances from country means rather than raw levels in order to account for the fact that all the countries in the sample are democracies, where redistributive policies are endogenous with respect to values insofar as they capture, at least to some extent, the opinions and desires of the representative voter.

Values turn out to matter when it comes to determining the sign and the intensity of the relationship between inequality and happiness. In particular, individuals who are either more moderate or more inclusive than their average compatriot tend to dislike inequality. With reference to moderation, inequality aversion can be read in terms of a desire for stability: people who are reluctant to take strong stands probably also resent social tension and unrest, which often accompany inequality. With reference to inclusiveness, the main element at play is likely to be a negative reaction to perceived unfairness. The effect of moderation appears to be stronger than the effect of inclusiveness: instrumental inequality aversion is probably more frequent and more intense than substantive inequality aversion.

Worldview effects appeared to be significant also with reference to the impact of personal income on happiness. The net effect of the logarithm of own equivalent income is positive for all clusters, but it is remarkably less intense, approximating zero, for people with a strong drive toward inclusion.

The marginal effect of values was found to be positive and significant with reference to those who exceed either average moderation or average inclusiveness. While the result on inclusiveness is expected, on account of a well-known relationship between openness toward others, trust and happiness, the positive sign on moderation was somewhat unanticipated. One possible explanation may start from the observation that the sample only includes developed countries, largely immune from disastrous phenomena such as widespread extreme poverty or war on domestic territory. Most events that can be perceived as unpleasant, barring health conditions that are controlled for in our regressions, are probably minor; if moderation is associated with a comfortable emotional distance from mundane disruptions, then it is bound to have a positive impact on happiness.

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A   Appendix

Table A.1: **Deleted observations and imputed incomes, by country**

Country	Starting size	Deleted observations		Imputed incomes	
		N	**Fraction**	**N**	**Fraction**
Austria	2,256	654	0.29	627	0.28
Belgium	1,778	142	0.08	343	0.19
Czech Republic	3,026	1245	0.41	473	0.16
Denmark	1,487	239	0.16	127	0.09
Estonia	1,989	700	0.35	232	0.12
Finland	2,022	135	0.07	121	0.06
France[+]	1,806	402	0.22	0	0.00
Germany	2,870	440	0.15	480	0.17
Greece	2,406	358	0.15	630	0.26
Hungary	1,498	345	0.23	131	0.09
Iceland	579	72	0.12	57	0.10
Ireland	2,286	483	0.21	379	0.17
Luxembourg	1,635	340	0.21	457	0.28
Netherlands	1,881	136	0.07	197	0.10
Norway	1,760	50	0.03	39	0.02
Poland	1,716	409	0.24	198	0.12
Portugal	2,052	426	0.21	678	0.33
Slovakia	1,512	490	0.32	325	0.21
Slovenia	1,442	290	0.20	208	0.14
Spain	1,663	342	0.21	446	0.27
Sweden	1,948	194	0.10	98	0.05
Switzerland	2,141	281	0.13	348	0.16
United Kingdom	1,897	142	0.07	337	0.18
Total	**43,650**	**8,315**	**0.19**	**6,931**	**0.16**

+ No imputed incomes for France on account of unavailability of subjective quality-of-life measures. All observations lacking income information were therefore deleted.

Table A.2: **Elementary value input for multiple correspondence analysis**

Thematic area	ESS variable	Question text	Response scale
Trust	PPLTRST	Generally speaking, would you say that most people can be trusted, or that you can't be too careful?	11-point
	WRYTRDH	How worried are you of being treated dishonestly?	4-point
	BSNPRFT	Businesses are only interested in making profits and not in improving service or quality (agreement)	5-point
Solidarity	CTZHLPO	Citizens should spend at least some of their free time helping others (agreement)	5-point
	SCBEVTS	Society would be better off it everyone just looked after themselves (agreement)	5-point
	GINCDIF	The government should take measures to reduce differences in income levels (agreement)	5-point
Compliance with law	SLCNFLW	How wrong: someone selling something second-hand and concealing some or all of its faults?	4-point
	PBOFVRW	How wrong: a public official asking someone for a favour or bribe in return for their services?	4-point
	CTZCHTX	Citizens should not cheat on their taxes (agreement)	5-point
Civic engagement	POLINTR	How interested would you say you are in politics?	4-point
	VOTE	Did you vote in the last national election?	YES/NO/NE
	NWSPTOT	On an average weekday, how much time, in total, do you spend reading newspapers?	8-point
Family and gender roles	WMCPWRK	A woman should be prepared to cut down on her paid work for the sake of her family (agreement)	5-point
	MNRSPHM	Men should take as much responsibility as women for the home and children (agreement)	5-point
	MNRGTJB	When jobs are scarce, men should have more right to a job than woman (agreement)	5-point
Minorities	FREEHMS	Gay men and lesbians should be free to live their own life as they wish (agreement)	5-point
	IMWBCNT	Is [cntry] made a worse or a better place to live by people coming to live here from other countries?	11-point
	IMDFETN	To what extend do you think [cntry] should allow people of a different race to come and live here?	11-point

Table A.3: **Item factor loadings and goodness-of-fit statistics**

Var	Response	Dim1	Dim2	Contr1	Contr2	Quality	Mass	Inertia
PPLTRST	You can't be too careful	-1.0472	-0.6244	0.0200	0.0082	0.0889	0.0030	0.0118
	1	-0.7413	-0.6472	0.0069	0.0061	0.0371	0.0020	0.0120
	2	-0.3746	-0.5753	0.0034	0.0093	0.0363	0.0040	0.0116
	3	-0.0504	-0.4469	0.0001	0.0088	0.0258	0.0062	0.0111
	4	0.0684	-0.1335	0.0002	0.0008	0.0091	0.0064	0.0111
	5	0.0649	-0.0901	0.0003	0.0007	0.0118	0.0125	0.0097
	6	0.3329	0.2008	0.0042	0.0018	0.0191	0.0062	0.0111
	7	0.3465	0.4755	0.0059	0.0129	0.0585	0.0080	0.0107
	8	0.1474	0.7028	0.0007	0.0187	0.0618	0.0053	0.0113
	9	-0.0292	0.8783	0.0000	0.0063	0.0227	0.0012	0.0122
	Most people can be trusted	-0.5470	0.5488	0.0014	0.0016	0.0103	0.0007	0.0123
WRYTRDH	Not at all worried	-0.0698	0.1976	0.0004	0.0041	0.0175	0.0148	0.0092
	A bit worried	0.1844	0.0043	0.0056	0.0000	0.0439	0.0271	0.0064
	Fairly worried	-0.1263	-0.2282	0.0011	0.0040	0.0179	0.0108	0.0101
	Very worried	-0.9168	-0.2029	0.0145	0.0008	0.0571	0.0028	0.0119
BSNPRFT	Disagree strongly	-0.8050	0.5514	0.0035	0.0019	0.0159	0.0009	0.0123
	Disagree	0.2462	0.3586	0.0029	0.0072	0.0402	0.0079	0.0107
	Neither agree nor disagree	0.3516	0.1400	0.0077	0.0014	0.0692	0.0102	0.0102
	Agree	0.2379	-0.1426	0.0084	0.0035	0.0668	0.0243	0.0070
	Agree strongly	-0.8574	-0.1037	0.0554	0.0009	0.2129	0.0123	0.0097
CTZHLPO	Disagree strongly	-1.8246	-0.5613	0.0075	0.0008	0.0253	0.0004	0.0124
	Disagree	-0.1412	-0.2036	0.0003	0.0008	0.0402	0.0079	0.0107
	Neither agree nor disagree	0.2652	-0.0840	0.0046	0.0005	0.1277	0.0106	0.0101
	Agree	0.2099	-0.0637	0.0089	0.0010	0.1152	0.0330	0.0051
	Agree strongly	-0.9893	0.4282	0.0525	0.0114	0.2289	0.0088	0.0105
SCBEVTS	Disagree strongly	-0.4747	0.7168	0.0158	0.0418	0.2050	0.0115	0.0099
	Disagree	0.3744	0.0197	0.0224	0.0001	0.1385	0.0261	0.0066
	Neither agree nor disagree	0.1633	-0.3549	0.0013	0.0069	0.1202	0.0077	0.0108
	Agree	-0.1897	-0.6238	0.0017	0.0207	0.0690	0.0075	0.0108
	Agree strongly	-1.5097	-0.4811	0.0384	0.0045	0.1354	0.0028	0.0119
GINCDIF	Disagree strongly	-0.4795	0.4171	0.0022	0.0019	0.0143	0.0016	0.0122
	Disagree	0.3883	0.2069	0.0067	0.0022	0.0462	0.0072	0.0109
	Neither agree nor disagree	0.3859	0.0336	0.0078	0.0001	0.0657	0.0086	0.0106
	Agree	0.2717	-0.1119	0.0106	0.0021	0.0670	0.0235	0.0072
	Agree strongly	-0.8008	0.0132	0.0575	0.0000	0.2306	0.0147	0.0092
SLCNFLW	Not wrong at all	-1.2506	-0.7478	0.0056	0.0023	0.0694	0.0006	0.0124
	A bit wrong	0.0369	-0.3399	0.0000	0.0031	0.0948	0.0038	0.0116
	Wrong	0.2431	-0.1340	0.0094	0.0033	0.0841	0.0260	0.0067
	Seriously wrong	-0.2266	0.2063	0.0079	0.0076	0.1817	0.0252	0.0068
PBOFVRW	Not wrong at all	-0.9787	-0.6764	0.0032	0.0018	0.0791	0.0005	0.0124
	A bit wrong	0.0886	-0.5233	0.0001	0.0033	0.0722	0.0017	0.0121
	Wrong	0.1646	-0.3626	0.0025	0.0139	0.0935	0.0149	0.0092
	Seriously wrong	-0.0536	0.1725	0.0007	0.0081	0.1818	0.0385	0.0038
CTZCHTX	Disagree strongly	-1.0103	0.1576	0.0073	0.0002	0.0227	0.0012	0.0122
	Disagree	-0.1183	-0.1650	0.0003	0.0007	0.0063	0.0035	0.0117
	Neither agree nor disagree	0.1516	-0.0422	0.0010	0.0001	0.1012	0.0073	0.0108
	Agree	0.3489	-0.1135	0.0220	0.0027	0.1696	0.0295	0.0059
	Agree strongly	-0.6997	0.2880	0.0420	0.0083	0.2119	0.0141	0.0093
POLINTR	Not at all interested	-0.5556	-0.0617	0.0176	0.0240	0.1637	0.0093	0.0104
	Hardly interested	0.0690	-0.2231	0.0006	0.0072	0.0646	0.0203	0.0079
	Quite interested	0.2306	0.2756	0.0065	0.0108	0.1059	0.0201	0.0080
	Very interested	-0.1455	0.7950	0.0008	0.0260	0.1193	0.0058	0.0112
VOTE	No	-0.2534	-0.4323	0.0044	0.0149	0.1104	0.0112	0.0100
	Yes	0.0562	0.1087	0.0008	0.0033	0.1940	0.0399	0.0035
	Not eligible to vote	0.1353	0.1165	0.0005	0.0004	0.1148	0.0044	0.0115

Table A.3: **Item factor loadings and goodness-of-fit statistics (cont.)**

Var	Response	Dim1	Dim2	Contr1	Contr2	Quality	Mass	Inertia
NWSPTOT	No time at all	-0.3160	-0.2320	0.0093	0.0058	0.0812	0.0152	0.0091
	Less than 0.5 hour	0.0942	0.0590	0.0009	0.0004	0.0370	0.0174	0.0086
	0.5 to 1 hr	0.1648	0.1330	0.0026	0.0020	0.0663	0.0158	0.0090
	1 to 1.5 hr	0.1326	0.0888	0.0004	0.0002	0.0094	0.0042	0.0116
	1.5 to 2 hr	0.0398	-0.0503	0.0000	0.0000	0.0040	0.0016	0.0121
	2 to 2.5 hr	0.1277	0.0559	0.0001	0.0000	0.0046	0.0006	0.0124
	2.5 to 3 hr	-0.1789	0.1822	0.0001	0.0001	0.0052	0.0003	0.0124
	More than 3 hr	-0.1673	0.0554	0.0001	0.0000	0.0047	0.0005	0.0124
WMCPWRK	Disagree strongly	-0.8380	1.2236	0.0180	0.0445	0.2253	0.0042	0.0116
	Disagree	0.2911	0.3848	0.0062	0.0125	0.0636	0.0119	0.0098
	Neither agree nor disagree	0.3271	0.0005	0.0082	0.0000	0.0991	0.0125	0.0097
	Agree	0.1859	-0.3655	0.0044	0.0196	0.1814	0.0207	0.0078
	Agree strongly	-1.2744	-0.3475	0.0615	0.0053	0.2263	0.0062	0.0111
MNRSPHM	Disagree strongly	-1.6401	-0.6477	0.0070	0.0013	0.0242	0.0004	0.0124
	Disagree	-0.2740	-0.7251	0.0010	0.0083	0.0332	0.0022	0.0120
	Neither agree nor disagree	0.1796	-0.4752	0.0009	0.0071	0.0427	0.0044	0.0115
	Agree	0.4558	-0.1885	0.0368	0.0073	0.2974	0.0290	0.0060
	Agree strongly	-0.6524	0.4855	0.0506	0.0326	0.3767	0.0195	0.0081
MNRGTJB	Disagree strongly	-0.5052	1.0501	0.0179	0.0900	0.4080	0.0115	0.0099
	Disagree	0.4894	0.1273	0.0272	0.0021	0.1416	0.0186	0.0083
	Neither agree nor disagree	0.3018	-0.3207	0.0059	0.0077	0.0772	0.0106	0.0101
	Agree	0.0171	-0.7548	0.0000	0.0426	0.1760	0.0106	0.0101
	Agree strongly	-1.5151	-0.7071	0.0614	0.0155	0.2503	0.0044	0.0115
FREEHMS	Disagree strongly	-1.2129	-0.7597	0.0284	0.0129	0.1406	0.0032	0.0118
	Disagree	-0.0919	-0.7940	0.0003	0.0217	0.0759	0.0049	0.0114
	Neither agree nor disagree	0.0906	-0.5395	0.0004	0.0153	0.0571	0.0074	0.0108
	Agree	0.4130	-0.0809	0.0241	0.0011	0.1559	0.0231	0.0073
	Agree strongly	-0.3482	0.7124	0.0126	0.0613	0.3391	0.0170	0.0087
IMWBCNT	Country made worse	-1.3786	-0.9029	0.0066	0.0134	0.0566	0.0023	0.0120
	1	-0.6843	-0.9044	0.0304	0.0151	0.1353	0.0026	0.0119
	2	-0.3571	-0.7839	0.0031	0.0175	0.0607	0.0040	0.0116
	3	-0.0137	-0.5541	0.0000	0.0126	0.0401	0.0058	0.0112
	4	0.2465	-0.2781	0.0022	0.0033	0.0167	0.0060	0.0112
	5	0.1702	0.0958	0.0031	0.0011	0.0406	0.0173	0.0086
	6	0.3740	0.2714	0.0049	0.0030	0.0247	0.0058	0.0112
	7	0.2782	0.5574	0.0026	0.0119	0.0423	0.0054	0.0113
	8	-0.0119	0.8448	0.0000	0.0204	0.0576	0.0040	0.0116
	9	-0.2717	1.1180	0.0005	0.0101	0.0285	0.0011	0.0122
	Country made better	-0.8320	1.2718	0.0052	0.0141	0.0522	0.0012	0.0122
IMDFETN	Allow none	-0.8013	-0.9506	0.0284	0.0464	0.2337	0.0072	0.0109
	Allow a few	0.0142	-0.3260	0.0000	0.0144	0.0575	0.0191	0.0082
	Allow some	0.2946	0.2731	0.0120	0.0120	0.1135	0.0226	0.0074
	Allow many	-0.1737	1.0522	0.0012	0.0516	0.1540	0.0066	0.0110

Table A.4: **Ordered logit estimates for happiness: quadrants**

	Estimate	Std Err[+]	Pr>ChiSq
Equivalent income			
(baseline for interaction terms: SW Quadrant, *Mod < mean; Incl < mean*)			
Log own	0.283	0.064	0.000
*NW Quadrant *Mod < mean; Incl > mean*	-0.163	0.086	0.057
*NE Quadrant *Mod > mean; Incl > mean*	-0.227	0.079	0.004
*SE Quadrant *Mod > mean; Incl < mean*	-0.117	0.062	0.057
Std interquartile range, regional	0.740	0.279	0.008
*NW Quadrant	-0.293	0.298	0.325
*NE Quadrant	-0.883	0.307	0.004
*SE Quadrant	-0.640	0.265	0.016
Log median, national	0.732	0.306	0.017
*NW Quadrant	-0.417	0.348	0.230
*NE Quadrant	-0.302	0.282	0.284
*SE Quadrant	-0.310	0.277	0.264
Log median, regional	-0.278	0.324	0.391
*NW Quadrant	0.300	0.394	0.446
*NE Quadrant	0.097	0.295	0.742
*SE Quadrant	-0.160	0.278	0.566
Demographics			
Gender: female	0.134	0.037	0.000
Age	-0.062	0.009	0.000
Age squared	0.006	0.000	0.000
Self-reported health (baseline=very good)			
Good	-0.583	0.052	0.000
Fair	-1.077	0.075	0.000
Bad	-1.784	0.115	0.000
Very bad	-2.420	0.336	0.000
Marital status (baseline=married or in registered cohabitation)			
Separated	-0.932	0.146	0.000
Divorced	-0.624	0.072	0.000
Widowed	-0.924	0.077	0.000
Never married	-0.631	0.049	0.000
Children			
Children living at home	-0.067	0.048	0.169
Children living outside the home	0.144	0.051	0.004
Social ties			
At least one close friend	0.606	0.080	0.000
Frequency of social activity	0.162	0.017	0.000
Location (baseline = city center)			
Suburbs or outskirts of big city	-0.008	0.075	0.912
Town or small city	0.051	0.061	0.408
Country village	0.103	0.062	0.096
Farm or home in countryside	0.249	0.107	0.020
Feeling of safety in own neighborhood (baseline = very safe)			
Safe	-0.107	0.045	0.016
Unsafe	-0.217	0.062	0.001
Very unsafe	-0.364	0.113	0.001
Job status			
Student	0.099	0.078	0.204
Unemployed, looking for job	-0.561	0.114	0.000
Unemployed, not looking	-0.380	0.148	0.010

Table A.4: **Ordered logit estimates for happiness: quadrants (cont.)**

	Estimate	Std Err[+]	Pr>ChiSq
Permanently sick or disabled	0.085	0.140	0.610
Retired	0.159	0.066	0.015
Community or military service	0.295	0.266	0.268
Housework	0.042	0.064	0.512
Other	-0.193	0.179	0.279
Other factors			
Years in formal education	0.004	0.006	0.424
Intensity of religious belief	0.054	0.009	0.000
Belongs to discriminated group	-0.516	0.090	0.000
Homeowner	0.094	0.044	0.034
Marginal effect of distance from the mean in values			
(baseline = SW Quadrant)			
NW Quadrant	3.349	0.849	0.000
NE Quadrant	5.200	0.701	0.000
SE Quadrant	3.116	0.849	0.000
Model fit statistics:			
Prob > Chi Square (Wald)	0.000		
Pseudo R^2	0.059		

+ Standard errors are adjusted for clustering at the country level (inclusion of national median of equivalent income in the regression)

Table A.5: **Cluster means, standard deviations, and descriptions**

		Distance from country mean:				
Cluster	**N**	**Moderation**		**Inclusiveness**		**Description**
		Mean	St Dev	Mean	St Dev	
1	12,500	-0.268	0.335	-0.032	0.205	- Mod (weak)
2	11,484	0.360	0.137	-0.076	0.191	++ Mod
3	4,332	-0.110	0.342	-0.540	0.144	- Mod (weak), – Incl
4	7,019	-0.062	0.296	0.511	0.209	++ Incl

Table A.6: **Ordered logit estimates for happiness: clusters**

	Estimate	Std Err[+]	Pr>ChiSq
Equivalent income (baseline for interaction terms = Cluster 1 *Mod < mean*)			
Log own	0.219	0.049	0.000
*Cluster 2 *Mod > mean*	-0.068	0.057	0.238
*Cluster 3 *Mod < mean (weak); Incl < mean*	-0.058	0.075	0.436
*Cluster 4 *Incl > mean*	-0.156	0.075	0.039
Std interquartile range, regional	0.584	0.201	0.004
*Cluster 2	-0.734	0.197	0.000
*Cluster 3	0.261	0.336	0.439
*Cluster 4	-0.652	0.289	0.024
Log median, national	0.504	0.221	0.023
*Cluster 2	-0.017	0.213	0.935
*Cluster 3	0.213	0.447	0.633
*Cluster 4	-0.344	0.296	0.246
Log median, regional	-0.140	0.214	0.512
*Cluster 2	-0.063	0.210	0.763
*Cluster 3	-0.078	0.465	0.866
*Cluster 4	0.195	0.281	0.487
Demographics			
Gender: female	0.132	0.037	0.000
Age	-0.063	0.009	0.000
Age squared	0.001	0.000	0.000
Self-reported health (baseline=very good)			
Good	-0.579	0.052	0.000
Fair	-1.070	0.074	0.000
Bad	-1.755	0.114	0.000
Very bad	-2.447	0.339	0.000
Marital status (baseline=married or in registered cohabitation)			
Separated	-0.936	0.151	0.000
Divorced	-0.617	0.071	0.000
Widowed	-0.923	0.075	0.000
Never married	-0.634	0.048	0.000
Children			
Children living at home	-0.061	0.048	0.196
Children living outside the home	0.143	0.051	0.005
Social ties			
At least one close friend	0.615	0.080	0.000
Frequency of social activity	0.162	0.017	0.000
Location (baseline = city center)			
Suburbs or outskirts of big city	-0.018	0.074	0.806
*fino a qui Town or small city	0.045	0.062	0.463
Country village	0.093	0.063	0.143
Farm or home in countryside	0.244	0.109	0.025
Feeling of safety in own neighborhood (baseline = very safe)			
Safe	-0.114	0.043	0.008
Unsafe	-0.224	0.061	0.000
Very unsafe	-0.375	0.112	0.001
Job status			
Student	0.096	0.080	0.228
Unemployed, looking for job	-0.555	0.114	0.000
Unemployed, not looking	-0.407	0.146	0.005
Permanently sick or disabled	0.086	0.143	0.548

Table A.6: **Ordered logit estimates for happiness: clusters (cont.)**

	Estimate	Std Err[+]	Pr>ChiSq
Retired	0.154	0.066	0.020
Community or military service	0.259	0.284	0.361
Housework	0.033	0.066	0.610
Other	-0.194	0.182	0.287
Other factors			
Years in formal education	0.006	0.006	0.298
Intensity of religious belief	0.053	0.009	0.000
Belongs to discriminated group	-0.514	0.093	0.000
Homeowner	0.097	0.045	0.030
Marginal effect of distance from the mean in values (baseline = Cluster 1)			
Cluster 2	1.934	0.542	0.000
Cluster 3	-1.393	1.068	0.192
Cluster 4	3.662	0.823	0.000
Model fit statistics:			
Prob > Chi Square (Wald)	0.000		
Pseudo R^2	0.059		

+ Standard errors are adjusted for clustering at the country level (inclusion of national median of equivalent income in the regression)