

Is Equality Better for Everyone?

A Multilevel Approach to Income Inequality and Subjective Wellbeing

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Income inequality is one of the key global challenges today and has been growing in many countries in the recent years. In particular, most advanced industrialised economies have seen their income distributions worsen from 1990 to 2012, as shown by the upwards trend in their gini indexes (Dabla-Norris et al. 2015). There has also been a striking increase in income inequality in Asia while most countries in Latin America and Africa have experienced some decline during the same period, but current levels of income inequality in these regions are still very high and remain well above the average of European countries. This has major implications, in turn, both for the societies in general and the wellbeing of their individual members, a topic which has recently drawn much attention in political as well as academic debate.

One of the influential contributions to this debate has been the book *The Spirit Level: Why Equality is Better for Everyone* (henceforth *The Spirit Level*) in which the authors make a strong case about the high costs of income inequality for the societies (Wilkinson and Pickett 2010). The basic argument of the book was that, among rich countries, more unequal ones performed consistently worse in terms of a range of health and social outcomes, which were important not only for the poor, the less educated or the lower social classes but everyone in the society. Although powerful as an idea, the way this argument was developed in the book has been subject to many criticisms with regard to its methodology. Inspired by this book and the following discussions, the aim of the present paper is to reassess the consequences of income inequality from the perspective individuals themselves, which, as we will argue below, offers a more solid methodological approach to the question whether equality is better for everyone. Moreover, the relationship between income inequality and wellbeing will be studied not only among the high-income but also in a larger group of countries with a view to providing a more global analysis of the consequences of inequality.

Overall we will show that, although there is no significant relationship between income inequality and subjective wellbeing at the global scale, they are indeed inversely related in the high-income country group, therefore greater equality is better for everyone living in countries where average income is above a certain threshold. In this regard, the first section will give a brief overview of the development of the argument in *The Spirit Level* and discuss major methodological criticisms that the authors have encountered. The second section will suggest subjective wellbeing as an alternative approach which would help to address these criticisms, and review the existing literature on subjective wellbeing to determine other relevant factors for a multivariate model. The third section will introduce multilevel modelling as a way of incorporating individual and country level indicators and measuring the variance explained at

different levels. The following sections will then discuss two multilevel models analysing the impact of income inequality on subjective wellbeing, one global and the other focused on high-income countries, and finally discuss the results.

***The Spirit Level* and its criticisms**

In *The Spirit Level*, Wilkinson and Pickett start by plotting per capita national income in countries at different stages of economic development against average life expectancy and happiness levels, with both curves showing a positive but diminishing pattern. The authors thereby show that the relationship between economic growth on the one hand and health and happiness on the other hand levels off after a certain threshold of per capita national income, and suggest that beyond this threshold it is the distribution of income within the country which makes a difference. To substantiate this claim, they establish a number of health and social problems which are comparable across countries and construct an index which includes the level of trust, mental illness, life expectancy, infant mortality, obesity, children's educational performance, teenage births, homicides, imprisonment rates and social mobility. When these variables are coded in such a way that higher scores always reflect worse outcomes, the index strongly correlates with income inequality but not with per capita national income among rich countries, thereby showing that these problems are more common in countries with higher income inequalities and does not depend on the level of economic development anymore.

Having set the general pattern, the authors then move on to looking at the relationship between income inequality and the problems which make part of the index one by one. In doing so they both compare different rich countries and various US states among themselves, both comparisons indicating a broadly similar pattern. In addition, they check the distribution of some health and education indicators according to different income, education and social class categories within countries and compare the distribution of these indicators in countries with different income inequality levels. On this basis they highlight that not only lower but also higher categories are better off in more equal countries as compared to their counterparts in less equal countries, hence the argument that equality benefits everyone. Finally, Wilkinson and Pickett conclude that inequality should indeed be the main variable of interest in explaining health and social outcomes under scrutiny because the relationships they posited are very consistent and strong. As for the explanation of the link, they focus on the psychological impacts of inequality, which generally damages social relationships when status differences among individuals are high, and also offer a brief discussion of alternative explanations which they ultimately do not find convincing.

The book has created significant controversy and received lots of methodological criticisms, some of which, in our opinion, are still valid and weaken the key argument made by the authors. First of all, comparisons across countries or states in the book are based on macro-level indicators which conflate the conceptions of good for the individual and good for a society on average. This was one of the basic criticisms raised by David Runciman who underlined the distinction between "almost everyone" and "everyone on average" by problematizing the use of average measures to support the claim that in more equal societies almost everyone does better (2009). While Wilkinson and Pickett point out the comparison of some outcomes for subcategories within different countries in their response to Runciman, the empirical

foundations of their argument remain problematic from this perspective. This is because the comparison of income, education or social class categories across countries does not say much about the impact of increased equality on individual members of these categories but rather looks at averages for groups smaller than overall societies. More importantly, the relevant part of the book relies on only two-country comparisons and the analysis of a very limited number of indicators, mostly based on secondary literature. Therefore, even if this approach is more likely to provide compelling evidence for the argument than the comparison of national averages, the generalisation from the presented comparisons to the benefits of equality for everyone is not well substantiated, especially in view of the comprehensive nature of the index suggested at the beginning.

The second group of criticisms can be classified as problems with the conceptualisation and the choice of variables in the book. The most influential criticism regarding the independent variable of interest in the suggested analysis, which is the level of inequality, came from Goldthorpe who criticised the one-dimensional concept of social stratification the authors used (2009). While the authors associated inequality with income inequality, justifying this on the basis of lack of comparable data for other potential indicators, they interchangeably referred to different types of social stratification such as class and status throughout the book. However, these categories do not necessarily correspond to one another and the relative importance of different determinants such as class, status, income and education needs to be more carefully assessed (Goldthorpe 2009). This is problematic in view of the reliance of the causal explanation suggested by the authors on status differences among individuals living in the same society while these are far from being a simple reflection of income differences.

In addition, the construction of the dependent variable can be questioned from a variety of perspectives. First, the relationship between income inequality and the components which make part of the index of health and social problems needs more subtle evaluation. Some components of the index, particularly educational performance and social mobility, do not only depend on the level of inequality but can also be expected to have an impact on income inequality themselves, whereby indicating a potential problem of endogeneity. At the same time, the choice of the problems that go into this index can be questioned more generally. Wilkinson and Pickett's response to one of their most vocal critiques (Saunders 2010) actually reveals a major problem with the index as they said they were particularly interested in "problems that have social gradients, gradients which make them more common further down the social ladder" (p.279). This way of choosing the problems of interest does not jeopardise the demonstrated correlations as such, however it constitutes a flaw for the broader argument about the impact of inequality on wellbeing because the dependent variable should not be operationalised according to criteria which are linked to the independent variable of interest in some way.

Subjective wellbeing approach

This paper uses subjective wellbeing as an alternative approach which, we argue, remedies most of the aforementioned shortcomings and addresses the question whether greater equality is better for everyone in a more accurate way. First of all, as an individual-level measure, subjective wellbeing would certainly allow us to focus on the outcomes of income inequality from the perspective of individual members of the society, thereby going beyond its average

impact on the society overall or some sub-categories of it. Additionally, taking the individuals as our unit of analysis would make it possible to control for other potentially relevant factors such as employment or education status at the individual level. As a result, even though the analysis is still limited to income inequality as one dimension of social inequality, we would at least be able to distinguish the independent impact of income inequality on wellbeing without conflating it with other dimensions of inequality. Finally, subjective wellbeing would provide a more distinct dependent variable than social outcomes used in the book, preventing the problem of endogeneity, and reflect what individual themselves deem important for their wellbeing instead of focusing on a selection of problems. Therefore, looking at subjective wellbeing, we will be able to tell whether people in countries with lower income inequality report significantly higher levels of wellbeing when various alternative determinants are controlled for, which, we believe, would be solid evidence that equality is indeed better for everyone.

Subjective wellbeing, which is basically about how individuals evaluate their own state of being, has become an increasingly popular proxy for individual utility or quality of life in the recent literature (Di Tella and MacCulloch 2006; Dolan et al. 2008) and is usually measured by questions on life satisfaction or happiness. The main advantage here is that it gives us the opportunity to empirically verify rather than just assume what matters for individuals (Becchetti and Pelloni 2013). Existing work on subjective wellbeing is also useful in terms of establishing potential independent variables to include in our model as control variables. In this sense, the literature generally points out demographic factors such as marital status and education as well as socioeconomic variables such as income and employment status (Diener et al. 2000; Cunado and Pérez Gracia 2012; Ferrer-i Carbonell 2005; Winkelmann and Winkelmann 1998). In addition, the state of health, freedom of choice, trust and social relations are shown to have a significant impact on the subjective wellbeing of individuals in different studies (Fleche et al. 2012; Helliwell and Wang 2011; Inglehart et al. 2008). Relevant variables corresponding to these factors will be included in the model we propose below.

On the other hand, there have also been studies on the relationship between macro-level variables and subjective wellbeing. The variables examined in this perspective have included a wide range from unemployment rate, inflation and welfare provisions, to individualism and ethnic or cultural heterogeneity (Diener et al. 1995; Di Tella et al. 2001; Di Tella et al. 2003). However, the most common variable of interest has been income, with a focus on the question whether increases in GDP are consistently associated with increases in reported wellbeing or there is a certain threshold above which it does not have much impact. This debate goes back to the well-known Easterlin paradox which highlighted the fact despite positive correlation between individual income and individual measures of happiness, the increases in per capita national income did not bring increases in average scores of happiness at the macro level after a certain level of economic development (Easterlin 1974). While this apparent contradiction was usually explained based on the importance of relative incomes rather than absolute and confirmed by other studies (Clark et al. 2003; Helliwell 2003), some authors also provided evidence to the contrary, by arguing that the relationship between wellbeing and income did not diminish as income rose and absolute income was determinant (Sacks et al. 2012; Stevenson and Wolfers 2013). In this regard, we will use not only individual income at a relative scale in

our model but also the GDP per capita as a macro-level control variable in order to distinguish the impact of income inequality per se from the impact of income conceptualised in two different ways.

Finally, income distribution has actually been included in the analysis of factors which determine subjective wellbeing by a few authors. In an early example, a significant relationship between equality and wellbeing was not found when other predictors such as income are controlled for (Diener et al. 1995). However, as the authors were basically concerned with the correlation of average level of wellbeing in society with various macro-level factors in this study, their focus was on average rather than individual wellbeing. In others, the role of income inequality was analysed at the individual level but generally with a specific geographical focus on the US or Germany through subnational variation, or on Europe, finding varying degrees of impact on subjective wellbeing (Alesina et al. 2004; Schwarze and Harpfer 2002). In one study which examined individual and country-level variables together at a global scale, the inclusion of income inequality in the model was reported as not improving its explanatory power without much details being given about the results (Helliwell 2003). This paper will reassess the impact of income inequality globally and among high-income countries by using multilevel modelling as outlined below.

Multilevel modelling

The primary methodological challenge of testing the association between subjective wellbeing and inequality is that the former is measured at individual level whereas the latter is measured at the country level¹. Although it is possible to test this association at country level by examining respective central tendency statistics of subjective wellbeing distributions, this option does not allow us to reach conclusions on whether equality is better for everyone and not simply on average. Alternatively, fixed-effect models with country-clustered standard errors are used to account for the non-independence of observations from each cluster, but in this case it becomes difficult to separate out the impact of additional country-level variables from the impact of unobserved characteristics of the countries. One common way of estimating such country effects is using random-effect multilevel models, which provides a suitable explanatory model for our basic question which is about the relationship between income inequality as a country-level variable and individual wellbeing. We would thus be able to integrate the individual and country levels of analysis and also comment on the impact of income inequality in particular rather than country characteristics in general.

One potential issue here concerns the availability of large datasets. Since multilevel modelling integrates regressions among individuals within each country and among countries, the same sample size requirements apply at both levels (Snijders and Bosker 1999, p.140). For basic specifications of linear models, the absolute minimum can be taken as 25 countries, while more complex models require higher numbers (Bryan and Jenkins, 2016). Taking this limit as a benchmark, we will use the fifth and sixth waves of World Values Survey (WVS 2014; 2016)

1 Income inequality can be measured in other self-contained political or economic at geographic aggregation levels lower or higher than that of countries. However, widespread availability of inequality data at country level with sufficient variability, and the apparent relevance of national borders with regard to political and economic factors make countries as the natural level of analysis.

with 58 and 60 countries respectively, and European Values Study 2008 (EVS 2016) with 47 countries in our study. Not only these provide sufficiently large datasets suitable for multilevel modelling, but also the integrated longitudinal dataset of both studies (EVS 2015; WVS 2015) offer the chance to increase the number of countries even further, or to focus on subsets without reducing the second-level sample size too much.

Taking stock of these considerations, and making use of the flexibility offered by EVS and WVS datasets, the following sections will develop two successive sets of multilevel models. The first set of models will examine the association between income inequality and subjective wellbeing alongside other relevant variables at a global scale. Drawing on the findings of the first model, the second will focus on high-income countries with a similar specification. In terms of second-level sample, the first set of models is safer with 55 countries while the second set of models is still above the minimum threshold with 41 countries, and reliable especially for relatively simple models. The analyses are conducted using R (R Core Team 2016), especially the lme4 package (Bates et al. 2015). Additionally, significance tests of fixed-effect variables and model comparisons are calculated with the lmerTest package (Kuzentsova et al. 2016).

Income inequality and subjective wellbeing at global scale

Data and Variables

The relationship between income inequality and subjective wellbeing is analysed at global scale through World Values Survey, wave 6. This dataset is preferred to WVS-EVS integrated dataset for two main reasons. First, a single dataset has a higher consistency than integrated datasets; observations made around similar periods, similar questionnaires used in different countries, higher levels of coordination, etc., all contribute to the overall coherence of the data. Second, treating second-level units as comprising a sample, multilevel models assumes generalizability of findings to the population of countries. In this sense, the countries included in the dataset should be considered as representative of the countries of the world as much as possible. The integrated dataset would be too biased towards Europe and higher-income countries, while WVS has a well-balanced selection of countries.

Two country-level variables are added to the original dataset. First, GDP per capita PPP values are retrieved from World Bank database (2016). The natural logarithm of these values are used to ensure a more normal distribution among countries and higher probability of linear relationship with subjective wellbeing². Second, Gini coefficient is used as the most accurate measurement of income inequality. The values are retrieved from the database on income inequality which is provided by United Nations University (UNU-WIDER 2015) and which comprises Gini calculations from a variety of reliable sources. In order to enhance the consistency of measurement, priority is given to data taken from World Bank as the valid source for the highest number of countries, followed by CIA World Factbook and OECD within this database. Moreover, data corresponding to year 2012 are preferred as the mid-point of WVS

2 The supposed non-linearity of this relationship draws on the diminishing marginal effects of income on wellbeing. The existence of such effects is established through exploratory analyses before data transformation.

wave 6, and the closest dates are used for missing values. Because of completely missing values, Bahrain, Kuwait and Lebanon are excluded from the data.

As for individual-level variables, the original dataset provides a reasonable coverage of relevant factors. Variables measured with 10-scales are treated as continuous in the analysis, and with lower scales as categorical. These 10-scale variables include satisfaction with life which is taken as the proxy of subjective wellbeing, the dependent variable. They also include one of the key independent variables, scales of income, which measures the relative position of each respondent in his/her country. While this relative measurement removes the useful information that could be gathered from real income values, it also serves to isolate this variable from the effects of income inequality and average income, which are measured by Gini and GDP per capita respectively. In addition, the respondent's state of health, level of education, employment status and expressed social class are included as categorical variables for control purposes. Social trust and personal autonomy³ are also included as they come forth as explanations confirmed by previous studies. Finally, demographic factors consist of age, sex, and living with a partner. The complete absence of employment data in Argentina, and social trust in New Zealand led to the exclusion of these countries.

Analysis

The multilevel modelling strategy that has been adopted here follows five steps. First, a variance component model (aka null or empty model) is generated to see the share of variance explained by the random effects of observations being clustered in countries. Second, individual-level variables are included to generate a random-intercept model which keeps the coefficients of all covariates fixed across countries but accounts for the vertical differences among their regression lines. Third, the random-intercept model is expanded with the addition of country-level variables as fixed effects. Fourth, a random intercept & slope model is generated by allowing the coefficient of income, as the key individual-level covariate, to vary across countries. Fifth, the random intercept & slope model is supplemented with cross-level interaction between income and GDP per capita to account for the possible mediation of the effect of GDP per capita through individual income distribution, and to compensate for the equivalence of the income scales of all countries despite the real difference among them. The goodness of the fit of models are successively compared using Likelihood Ratio (deviance) tests. The results are summarized in Table 1.

[Table 1 about here]

Given that all X^2 values for Likelihood Ratio tests are significant, the fifth model should constitute the basis of analysis. To begin with the fixed effects of individual-level variables, health is a strong predictor of subjective wellbeing. Not only all categories yield lower scores as compared to 'very good', the differences among these three categories are also large enough to suggest a completely relevant effect of the state of health. Social class also seems to predict

3 Social trust is measured by respondents' statements on whether they think that people are likely to take advantage of others or they treat others fairly. Personal autonomy is measured by respondents' statements on how much choice and control they think they have over their lives. These are treated as 10-scale continuous variables.

subjective wellbeing, especially below middle class. While the difference between 'upper' and 'upper middle' classes is insignificant, the starkest difference is observed between 'working' and 'lower' classes. As compared to fully employed people, the part-time employed, the self-employed and the unemployed are expected to report lower levels of wellbeing. Meanwhile, those who do not work but who are not unemployed report higher levels of wellbeing. In contrast to these three variables, education seems unrelated to subjective wellbeing. For the demographics, women are more satisfied with life than men, those who live with a partner are more satisfied than single, divorced/separated or widowed people, and life satisfaction increases with age. The results on social trust and personal autonomy reconfirm the findings of previous studies.

The fixed effect of income is also statistically significant with a reasonably large coefficient: 0.15 standard deviation change in income corresponds to 1 standard deviation change in subjective wellbeing. While as expected GDP per capita also appears as a relevant predictor, the effect of Gini remains too low. The latter seems significant only in the third model, and counter-intuitively, with a positive coefficient which implies higher levels of subjective wellbeing in more unequal societies. In the light of the results from the fourth and fifth model, the findings lead to a non-confirmation rather than refutation of the hypothesized association between income inequality and subjective wellbeing. As for the random effects, approximately 7.6% of the total variance is explained by cross-country differences, and approximately 12.4% of the latter is accounted for by the varying coefficients of income. Thereby, the country effects still should not be underestimated, and cross-country changes in the effect of income should be an important part of the country-level analysis.

In this respect, the negative correlation between random intercepts and random coefficients of income suggests a decreasing effect of income with increasing average scores of subjective wellbeing. Since GDP per capita is a country-level variable positively associated with subjective wellbeing, the effect of income can also be expected to vary with this. Concomitantly, the negative coefficient of the interaction term also suggests a decreasing effect of income with increasing GDP per capita. In a way that ascertains this relationship, the correlation between GDP per capita and income coefficients at country level is -0.30. Therefore, the effect of income on wellbeing decreases not only together with higher mean values of subjective wellbeing, but also as a function of GDP per capita. This finding suggests that while the association between income inequality and subjective wellbeing cannot be supported by the analysed data, it might still be the case that this relationship holds within a specific group of countries defined by their average income, because within country patterns are shown to be changing as average income rises. For this reason, the next section will focus the analysis on the high-income group of countries.

Income inequality and subjective wellbeing in high-income countries

Pickett and Wilkinson (2010), in their original work, observe the decreasing marginal returns of GDP per capita on wellbeing at the macro level, and proceed to show that, within the group of richer countries where GDP per capita differentials are not influential, inequality comes forth as the main explanation of wellbeing. Having failed to find convincing evidence to support the association between wellbeing and inequality at global scale, the next stage of our analysis will

also test whether this relationship holds for high-income countries. The main contribution will again be the consideration of individual-level factors and country effects, and the measurement of the dependent variable as subjective wellbeing. Additionally, a larger sample is considered as compared to *The Spirit Level* which focused on 23 countries.

Data and variables

The analysis of high-income countries is conducted on a subset of integrated dataset of WVS and EVS. In this stage, observations from multiple surveys are preferred over the consistency of relying on a single study for two major reasons. First, among 45 countries which are classified as high-income by World Bank and which participate in either survey, 15 can be found in WVS and 30 in EVS. Thereby, in order to attain a reasonable number of second-level units, combining datasets was necessary. Second, analysing only EVS would be limited to Europe; the combined dataset provides the chance to draw conclusions for high-income countries without geographic restrictions. World Bank classifies 80 countries as high income, and a considerable part of the countries that are not covered by the datasets consist of dependent territories and small states. In this sense, the integrated dataset provides a reasonably representative sample of the population of high-income countries. In order to assure maximum possible temporal consistency between two surveys, priority has been given to WVS wave 5, but a few high-income countries which did not take part in wave 5 or which display completely missing values in variables of interest have been taken from wave 6 in order to sustain the size of the sample.

The values of the country-level variables are retrieved from the same sources as the global-scale analysis, and Bahrain and Kuwait are removed. For these values, year 2008 has been taken as the benchmark that corresponds to EVS⁴. Individual-level variables also follow the same logic as the global-scale analysis with two notable exceptions. First, social class is unavailable in EVS without a substitute compatible with the WVS measurement, and for this reason, it has been dropped from the model. Second, income measurements in the two studies do not exactly match. Since income positions relative to countries are used in the analysis, different measurements are aligned with little loss of information and without creating significant bias. The 12-scale measurement of EVS is collapsed to 10 scales in a way that renders the distribution more normal, which is the case in WVS measurement which takes country-specific brackets. After this recoding, standardization is made by centring the distributions on country means to reinforce country-specific nature of the variable⁵. Finally, Argentina and New Zealand are dropped due to the unavailability of employment and social trust data respectively in any two waves of the WVS.

Analysis

Apart from the exception of social class, the modelling of the data from high-income countries follows a similar model specification and the same steps of model comparison. Table 2

4 2008 data are used even for countries taken from the sixth wave of WVS. Given that 2008 coincides with global economic crisis, the consistency within the variables are deemed more important. In this sense, the data points from the sixth wave are assumed to be the same as if they were observed at the fifth wave.

5 The R package `plyr` (Wickham 2011) was used in this process.

summarizes the results returned by the variance component model, the random intercept model with individual-level variables only, its expanded version with country-level variables, the random intercept & slope model with varying coefficients of income, and its expanded version with cross-level interaction between GDP per capita and income. The primary difference of these models from their global-scale counterparts is that random effects of income and its interaction with GDP per capita do not improve the model fit as compared to the third model which only contains random intercepts. The underlying difference between the high-income and larger groups, which leads to the insufficiency of more complex models, is arguably the lower effect of income, which has already been observed in the previous stage. This finding is reflected even in the fixed effect of income which is at a relatively negligible level in all models.

[Table 2 about here]

In this context, the third model is taken as the basis of analysis at this stage⁶. The individual-level variables of health, employment, education, sex, living with a partner, personal autonomy and social trust display very similar patterns to the models observed in the previous stage, with the exception of age, the effect of which is visibly smaller. As for the key variables of interest, in addition to the relatively lower relevance of income, the significance of Gini increases, yielding a negative coefficient as expected, while that of GDP per capita decreases. In this sense, we can confirm the idea that, after a national income threshold is passed, more equal income distribution becomes a more imminent factor that increases the wellbeing of the members of the society. Given that this paper has conducted analyses on individual-level data and that a variety of relevant factors are accounted for, including relative income positions in particular, these findings provide stronger support to the argument that equality is better for everyone than the findings obtained from macro-level analyses only.

Nonetheless, it should be remarked that the proportion of the variance explained by random intercepts remains as low as approximately 3.8%, and that the differences among high-income countries are already quite small and the effects of income inequality may be limited to this array. More precisely, Table 3 summarized the consequences of refitting the model when country-level factors are taken solely as part of random effects. In this case, the proportion of country-level variance to the total variance is 4.9% while the proportion of variance explained by income inequality to the total country-level variance is 68.1%. Therefore, a considerable part of the cross-country differences regarding subjective wellbeing is accounted for by the degrees of income inequality in these countries.

[Table 3 about here]

6 Given the similarity of coefficients among the third, fourth and fifth models, interpretations would not radically change if more complex models were adopted.

Conclusion

The multilevel analysis of the impact of income inequality on subjective wellbeing in this paper has shown that at a global scale the level of inequality is not associated with wellbeing when various individual and country-level factors are held constant. However, the same relationship has proved to be significant in the sample of high-income countries, albeit with a small effect for income inequality. This result confirms the main idea behind *The Spirit Level* by offering a different conceptualisation of variables and using statistical methods which are well-suited to bringing together variables from different levels of analysis. It also does so by looking at a higher number of countries than the book did, which, despite the lack of a similar association at the global scale, constitutes an important finding in our opinion. At the same time, the small size of the effect does not mean it is without much importance because this is the direct effect of an unequal income distribution per se when many other factors are controlled for. While the ways in which income inequality has such an impact need to be established through further empirical analysis taking account of potential interactions with other variables, current results certainly give us enough ground to say that lower levels of income inequality are associated with higher subjective wellbeing scores in the high-income country group. Therefore equality can indeed be argued to be better for everyone in these countries.

Table 1. Multilevel linear models for all countries

	Model 1: Variance component only	Model 2: Random intercepts (1)	Model 3: Random intercepts (2)	Model 4: Random intercept&slope	Model 5: Cross-level interaction
Random effects	Variance	Variance	Variance	Variance	Variance
Country intercept	0.110	0.064	0.049	0.050	0.048
Income				0.007	0.007
Residual	0.852	0.667	0.667	0.660	0.660
Intercept-slope correlation				-0.74	-0.72
Fixed effects	DV: subjective wellbeing	DV: subjective wellbeing	DV: subjective wellbeing	DV: subjective wellbeing	DV: subjective wellbeing
Intercept	0.01	0.24 ***	0.24 ***	0.22 ***	0.22 ***
Health (ref: Very good)					
---Good		-0.20 ***	-0.20 ***	-0.20 ***	-0.20 ***
---Fair		-0.45 ***	-0.45 ***	-0.45 ***	-0.45 ***
---Poor		-0.78 ***	-0.78 ***	-0.76 ***	-0.76 ***
Employment (ref: Employed)					
---Part time		-0.03 *	-0.03 *	-0.03 *	-0.03 *
---Self employed		-0.02 *	-0.02 *	-0.03 *	-0.03 *
---Retired		0.07 ***	0.07 ***	0.08 ***	0.08 ***
---Housewife		0.07 ***	0.07 ***	0.06 ***	0.06 ***
---Student		0.14 ***	0.14 ***	0.13 ***	0.13 ***
---Unemployed		-0.06 ***	-0.06 ***	-0.05 ***	-0.05 ***
---Other		-0.01	-0.01	-0.01	-0.01
Education (ref: Below primary)					
---Primary		-0.01	-0.01	0.00	0.00
---Secondary		-0.03 *	-0.03 *	-0.02 .	-0.02 .
---University		-0.02	-0.02	0.00	0.00
Social class (ref: Upper)					
---Upper middle		-0.02	-0.02	-0.02	-0.02
---Lower middle		-0.05 *	-0.05 *	-0.04 *	-0.04 *
---Working		-0.09 ***	-0.09 ***	-0.07 ***	-0.07 ***
---Lower		-0.18 ***	-0.18 ***	-0.15 ***	-0.15 ***
Sex (ref: Male)					
---Female		0.05 ***	0.05 ***	0.05 ***	0.05 ***
Living with partner (ref: No)					
---Yes		0.10 ***	0.10 ***	0.10 ***	0.10 ***
Age		0.02 ***	0.02 ***	0.02 ***	0.02 ***
Personal autonomy		0.25 ***	0.25 ***	0.25 ***	0.25 ***
Social trust		0.08 ***	0.08 ***	0.08 ***	0.08 ***
Income position		0.15 ***	0.15 ***	0.15 ***	0.15 ***
Gini			0.09 *	0.02	0.02
GDP per capita (natural log)			0.11 **	0.05 *	0.10 **
Income and GDP interaction					-0.03 *
Number of observations	76,992	76,992	76,992	76,992	76,992
Number of groups (countries)	55	55	55	55	55
X2 (difference in deviance)		18,854 (df=23) ***	14,495 (df=2) ***	660.84 (df=2) ***	4,828 (df=1) *

Note: coefficient estimates are standardized; Significance levels: *** $p < 0.001$ < ** $p < 0.010$ < * $p < 0.050$ < . $p < 0.100$

Table 2. Multilevel linear models for high-income countries

	Model 1: Variance component only	Model 2: Random intercepts (1)	Model 3: Random intercepts (2)	Model 4: Random intercept&slope	Model 5: Cross-level interaction
Random effects	Variance	Variance	Variance	Variance	Variance
Country intercept	0.063	0.030	0.024	0.024	0.024
Income				0.000	0.000
Residual	0.823	0.604	0.604	0.604	0.604
Fixed effects	DV: subjective wellbeing	DV: subjective wellbeing	DV: subjective wellbeing	DV: subjective wellbeing	DV: subjective wellbeing
Intercept	0.06	0.19 ***	0.15 ***	0.15 ***	0.15 ***
Health (ref: Very good)					
---Good		-0.24 ***	-0.24 ***	-0.24 ***	-0.24 ***
---Fair		-0.50 ***	-0.50 ***	-0.50 ***	-0.50 ***
---Poor		-0.93 ***	-0.93 ***	-0.93 ***	-0.93 ***
---Very poor		-1.34 ***	-1.34 ***	-1.34 ***	-1.34 ***
Employment (ref: employed)					
---Part time		-0.03 *	-0.03 *	-0.03 *	-0.03 *
---Self employed		0.02	0.02	0.02	0.02
---Retired		0.11 ***	0.11 ***	0.11 ***	0.11 ***
---Housewife		0.04 *	0.04 *	0.04 *	0.04 *
---Student		0.10 ***	0.10 ***	0.10 ***	0.10 ***
---Unemployed		-0.24 ***	-0.24 ***	-0.24 ***	-0.24 ***
---Other		-0.02	-0.02	-0.02	-0.02
Education (ref: no education)					
---Primary		0.01	0.00	0.00	0.00
---Secondary		0.01	0.00	0.00	0.00
---University		0.04	0.04	0.04	0.04
Sex (ref: Male)					
---Female		0.04 ***	0.04 ***	0.04 ***	0.04 ***
Living with partner (ref: No)					
---Yes		0.19 ***	0.19 ***	0.19 ***	0.19 ***
Age		0.01 .	0.01 .	0.01 .	0.01 .
Personal autonomy		0.30 ***	0.30 ***	0.30 ***	0.30 ***
Social trust		0.13 ***	0.13 ***	0.13 ***	0.13 ***
Income position		0.01 **	0.01 **	0.01 **	0.01 *
Gini			-0.07 *	-0.07 **	-0.07 **
GDP per capita (natural log)			0.05 .	0.05	0.05 .
Income and GDP interaction					0.00
Number of observations	39,285	39,285	39,285	39,285	39,285
Number of groups (countries)	41	41	41	41	41
X2 difference in deviance		12,212 (df=20) ***	8.646 (df=2) *	0.282 (df=2)	0.184 (df=1)

Note: coefficient estimates are standardized; Significance levels: *** $p < 0.001$ < ** $p < 0.010$ < * $p < 0.050$ < . $p < 0.100$

Table 3. Gini and GDP per capita as random effects

Random effects	Variance
GDP per capita (natural log)	0.002
Country	0.007
Gini	0.021
Residual	0.604
<i>Results in fixed effects highly similar to Table 2</i>	
Number of observations	39,285
Groups:	
---Country	41
--- GDP per capita	41
--- Gini	36

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