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ABSTRACT

Gini Who? The Relationship between Inequality Perceptions and Life Satisfaction*

Research on the consequences of income inequality on subjective well-being has yielded mixed results, including a lack of a statistically significant correlation. We propose that this inconsistency may arise from the failure to differentiate between perceived and actual income inequality. Perceptions of inequality matter because individuals often do not know the actual level of inequality in their country. Leveraging data from the 2016 Life in Transition Survey, which includes unique information on individuals' inequality perceptions, we find a positive association between these perceptions and life satisfaction across 33 countries. Individuals who believe that inequality has increased in the previous 4 years are on average 8% less satisfied with their life (on a 1-5 scale) compared to respondents who perceive no increase in inequality. The magnitude of the estimate is sizeable, being twice as large as the influence of unemployment. Taking actual inequality levels and changes into account does not alter the conclusions, suggesting that inequality perception matters for life satisfaction above and beyond actual inequality. Our findings survive a battery of robustness checks, including an instrumental variables approach and addressing common method variance bias. We also find that mobility expectations and fairness perceptions cushion but do not fully offset the negative association between perceived inequality increases and life satisfaction. Our findings imply that understanding the role of inequality perceptions can be key to improving social cohesion and individual and societal well-being.

JEL Classification: D63, E31, I31
Keywords: inequality, perceptions, life satisfaction, subjective well-being

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1 Introduction

Despite a century-long downward trend, within-country economic inequality has been rising within many developed countries, due to factors such as automation and globalization (Colantone & Stanig, 2019; Jaimovich & Siu, 2019; Moll et al., 2022). Rising inequality has contributed to a perception of injustice among substantial segments of the populace in developed nations. This perception has manifested in events, such as Brexit, the electoral wins of populists, and the Yellow Vests protests. Understanding the personal significance of economic disparity and its correlation with societal outcomes is therefore crucial to constructing policies aimed at maintaining social harmony and the integrity of the social fabric.

Given the importance of inequality in society, a large body of literature has focused on the effect of inequality on Gross Domestic Product (GDP) growth (Banerjee & Duflo, 2003; Kuznets, 2022; Neves & Silva, 2014). While Gross Domestic Product (GDP) growth remains a key indicator of economic performance, a nation's prosperity includes more than just income and wealth. A fuller understanding of a country's overall development also requires consideration of additional factors, such as subjective well-being (SWB), which encompasses the various dimensions of life quality as experienced and evaluated by individuals themselves (Fleurbaey & Blanchet, 2013; Graham, 2011; MacKerron, 2012; Nikolova, 2018; Nikolova & Graham, 2022; Organisation for Economic Co-operation and Development, 2011).

This paper studies the link between subjective well-being (SWB) and inequality perceptions. Subjective well-being, encompassing aspects such as happiness and life satisfaction, serves as a vital gauge of individual prosperity and societal health.[1] It captures the nuances of people's lived experiences and perceived realities, reflecting both their tangible conditions and personal evaluations. Because happiness and well-being are goals that many

[1] We use subjective well-being as a broad concept that includes both life satisfaction and happiness. Our empirical analysis relies on a life satisfaction measure.

individuals strive for, SWB provides insight into the quality of life that extends beyond objective economic indicators. Exploring the influence of (perceived) inequality on subjective well-being (SWB) is essential given the substantial body of research indicating SWB's impact on various societal and individual outcomes including productivity, health, income, and political engagement, including voter turnout and preferences (De Neve et al., 2013; Liberini et al., 2017; Oswald et al., 2015; Ward, 2019). Additionally, variables such as political stability, voting behaviors, and trust in others or institutions are not only correlated with SWB but also with income inequality (Dabla-Norris et al., 2015; Pickett & Wilkinson, 2010), These correlations hint at a web of complex interactions between these factors, making the study of inequality's effect on SWB particularly relevant for both policy formulation and academic inquiry.

The relationship between income inequality and subjective well-being (SWB) has garnered significant academic focus, with scholars proposing four primary explanations on why income disparity might influence SWB: self-interest, inequality aversion, externalities, and reference group (Benabou & Ok, 2001; Clark & D'Ambrosio, 2015; Ferrer-i-Carbonell & Ramos, 2021; Pickett & Wilkinson, 2010). The self-interest hypothesis suggests individuals may react to inequality based on how it affects their own economic position. The inequality aversion theory posits that people may inherently dislike unequal distributions of income. The externalities concept refers to how one's SWB is impacted by the societal consequences of income inequality, such as crime rates or social trust. Lastly, the reference group theory examines how individuals compare their income to that of others in their community or social circle, suggesting that widening gaps with the reference group negatively affect SWB.

Yet, the large scholarship on inequality and SWB has yielded mixed or insignificant results (Ngamaba et al., 2018). Research in this body of literature tends to rely on macro-level inequality measures, such as the Gini coefficient, and assume that individuals are well aware of such information. However, scholars have questioned individuals' knowledge of inequality levels and trends in their countries (e.g., Gimpelson & Treisman, 2018).

Simply put, the concept of the Gini coefficient might not be widely known outside of economics circles, and its specific values are likely unfamiliar to the general public. Surveys asking people about their perceptions of income inequality in their country often reveal a discrepancy between the actual and perceived levels of inequality (Gimpelson & Treisman, 2018). This indicates a disconnect between the public's awareness of certain economic indicators and the real economic situation and highlights the need to consider both perceived and actual measures of inequality to better understand their societal ramifications. Furthermore, the fact that individuals are largely unaware of the true inequality levels in their country may in part explain the lack of a clear relationship between inequality and SWB suggesting that what matters is perceived inequality, rather than its actual level.

Despite the importance of perceived inequality, there is a dearth of studies linking it to subjective well-being. To our knowledge, only two studies have explicitly investigated the relationship between inequality and SWB relying on measures of inequality perceptions. First, Schneider (2012) uses German survey data asking respondents to estimate the wages of managers relative to unskilled workers in Germany to capture inequality perception and investigate its association with life satisfaction. As such, the measure of inequality perceptions is perceptions of relative occupational income gaps. Second, Schalembier (2019) calculates a subjective Gini coefficient based on survey answers related to five diagrams depicting different types of society – e.g., a small elite at the top vs. a great mass at the bottom in one diagram and one describing a society with most people in the middle. The diagrams do not specifically refer to income inequality, but about “types of” society and the survey dataset does not contain information on life satisfaction, which the author obtains from a different source.

Our study substantively extends these contributions by utilizing a direct individual-level measure of income inequality perceptions. We rely on individual-level self-reported data from the 2016 Life in Transition Survey (LITS), a country-level representative poll in 34 countries

implemented by the European Bank for Reconstruction and Development and the World Bank.[2] This survey has the unique feature of including *both* a question on life satisfaction, our dependent variable, and inequality perception, measured using respondents' assessment of whether the gap between the rich and the poor in their country has changed in the previous year. This allows us to directly investigate the relationship between (perceived) inequality and SWB at the individual level.

This paper makes several substantive contributions. The measure of perceived inequality at the individual level is one of the key contributions of our paper to the literature, which has so far struggled to convincingly analyze the inequality-SWB relationship at the individual level. The use of country-level measures, such as the Gini coefficient, has three main limitations. First, the theoretical explanations for why inequality influences SWB are centered around mechanisms that operate at the individual level. For example, relative deprivation and social comparisons are linked to the individual's position within a reference group that is person-specific. As a result, a measure of inequality at the national level may not effectively capture such dynamics. In contrast, individual perceptions of inequality are more likely to reflect personal aspirations, cognitive processes, and individual contemplations. This type of measure inherently encapsulates mechanisms, such as social comparison, that are integral to an individual's response to questions about perceptions of inequality. Second, country-level measures of perceived or actual inequality imply large reductions in variation unless a large sample of countries is used. These limited country samples and the lack of variation can explain the mixed and nil results in the inequality-SWB literature so far. Third, measures of actual inequality are constructed by researchers, and, as such, they are subject to a certain level of subjectivity. For example, there is no consensus on whether individuals care more about the overall income distribution or the concentration at the top, and different measures of income inequality (e.g., Gini coefficient, top shares) capture different aspects of

[2] While the LITS collected data in 34 countries, our analysis uses 33 countries as inequality perceptions information is unavailable for Uzbekistan.

inequality. Conversely, our self-reported approach to (perceived) inequality directly solicits individuals' evaluations of inequality. The individual herself determines what aspects are important when assessing inequality, which renders the measure less susceptible to the researchers' biases regarding what constitutes the most pertinent measure of subjective or objective inequality. Thus, by relying on an individual-level measure of inequality, our paper deals with three of the main limitations of the previous literature.

Furthermore, our paper also contributes to the scholarship on the determinants of life satisfaction by providing empirical evidence on the role of perceived inequality, which the literature has so far largely ignored. We also add to the scholarly work on the role of perceptions as important predictors of economic and political behavior (e.g., Blendon et al., 1997; Evans & Andersen, 2006; Janssen, 2004; Stevenson & Duch, 2013; Weber et al., 2022) and preferences for redistribution (e.g., Alesina et al., 2004; Bussolo et al., 2021; Cruces et al., 2013). Understanding the consequences of perceived income inequality on the demand for redistributive policies and individual and societal well-being is crucial for developing and implementing policies to prevent the disruption of the social fabric and further polarization.

Our main hypothesis is that inequality perceptions are relevant for individuals' life satisfaction above and beyond the level or change in actual inequality in the country. To test this hypothesis, we regress life satisfaction on the country-level income inequality measures and a set of individual characteristics. Because the actual values of income inequality are often unknown to individuals, we include in our specification an individual-level measure of perceived inequality.

Our results provide support for our main hypothesis. First, we find very little evidence for an association between the levels or changes in the Gini coefficient or other measures of inequality, on the one hand, and individual life satisfaction, on the other. Changes in actual inequality become marginally statistically significant only after controlling for perceived inequality. Second, inequality perceptions are associated with life satisfaction, regardless of whether we control for (changes in) actual inequality. More specifically, compared with individuals who

perceive no inequality changes in the past four years, those who perceived an increase in inequality are 0.26 points less satisfied with their life (on a 1-5 scale, mean=3.21), while the life satisfaction of those who perceived a decrease is on average 0.13 points higher. The magnitudes we estimate are also economically meaningful: the coefficient estimate on perceiving an increase in inequality is twice as large as that for unemployment, one of the strongest determinants of life satisfaction (Suppa, 2021). These findings suggest that perceived within-country income inequality matters for people's life satisfaction above and beyond actual inequality. Overall, the perception of income inequality emerges as a significant factor influencing a person's overall contentment with life.

In addition, building on previous studies (Alesina et al., 2004; Bjørnskov et al., 2013), we investigate whether the inequality-SWB relationship depends on perceived social mobility and fairness. We expect that individuals who consider their country to be fair and believe in their own opportunities for upward mobility to be more willing to accept higher inequality. We therefore interact our main explanatory variable, inequality perception, with measures of perceived social mobility and fairness. We find that those who believe in mobility (fairness) are more satisfied with their life when they perceive an increase in inequality compared to those who find their country less mobile (unfair). We also find support for the hypothesis that perceived social mobility and fairness partially moderate the relationship between inequality perception and life satisfaction by cushioning some of the negative consequences of inequality.

Our results are robust to a battery of sensitivity checks, including instrumental variable estimations, selection on unobservables, common method variance, and accounting for the risk of reversibility (Bond & Lang, 2019). We furthermore document that our findings are robust to the inclusion of measures of inequality aversion, trust, and risk aversion. Finally, our findings are consistent across income groups, biological sex, and country regions (e.g., EU countries, former Soviet Union, Balkan countries).

2 Related literature

2.1 Inequality and SWB

A relatively large body of literature has investigated the effects of income inequality on subjective well-being and has found contrasting results. In one of the earliest empirical papers on the topic, Morawetz *et al.* (1977) rely on the unique setup of Israeli moshavim to compare settlements with very similar characteristics except for inequality and find that more equal settlements were on average happier.

Subsequent studies, however, present different results. For instance, Alesina *et al.* (2004) use data from the General Social Survey for the US (1981-96) and the Eurobarometer (1975-92) and find significant associations between inequality, measured with the Gini coefficient, and self-assessed happiness. They only find a negative association among the rich in the US and the poor or left voters in Europe. Conversely, Lutmer (2005) uses data from the National Survey of Families and Households (1987-94) and finds no effect of Gini at the local level on self-assessed happiness in the US. Furthermore, Ludwig *et al.* (2012) rely on the random assignment to the household mobility experiment Moving to Opportunity (MTO) in the US to look at the effects of moving to a different neighborhood on subjective well-being in a 10 to 15-year period. Interestingly, their estimates show that those who moved to a richer neighborhood had higher levels of self-reported happiness even without improving their economic situation. Moreover, Ngamaba *et al.* (2018) analyzed 39 empirical studies on inequality and subjective well-being and performed a meta-analysis of 24 of them. They conclude that no clear pattern has emerged in the literature so far. Some papers find a positive association, some a negative one, and still others – an insignificant effect, regardless of the measures of actual inequality and subjective well-being (Clark & D'Ambrosio, 2015; Ferrer-i-Carbonell & Ramos, 2021; Ngamaba et al., 2018).

2.2 The role of fairness and mobility

Several studies on inequality and SWB account for perceived fairness and mobility to explain why inequality affects the life satisfaction of certain individuals more or less than that of others. For example, Alesina *et al.* (2004), Alesina and Angeletos (2005), and Alesina and Giuliano (2011) suggest that the differences in the effect of inequality on happiness (and demand for redistributive policies) between the US and Europe are due to different perceptions of social mobility. While Americans believed in the so-called American Dream–the idea that success is the reward for talent and effort–Europeans were not as optimistic about mobility. Similarly, Oishi *et al.* (2011, 2018) suggest that the US may have experienced rising GDP without a corresponding increase in happiness because of the negative effect that the increase in inequality had on perceived fairness and trust in the country, which, in turn, affects subjective well-being. Finally, Bjørnskov *et al.* (2009, 2013) use data from the World Value Survey to proxy fairness perception with opinions on the role of hard work to succeed, statements about whether poverty is due to laziness, the chances of upward mobility, and ideology. Using perceived fairness as a moderator in the relationship between inequality and life satisfaction, they conclude that the ambiguous results in the literature are attributable to the role of fairness perceptions.

2.3 Perceived vs. actual inequality

Part of the reason for the lack of statistical significance in the results of the SWB-inequality relationship is because each individual forms her own beliefs about income inequality, which might differ from the actual inequality level. Simply put, the Gini coefficient might be a well-known indicator among social scientists but a meaningless word for laypeople.

In fact, there is quite a broad consensus in the literature that individuals' perception of inequality can significantly differ from country-wide measures of inequality (Bussolo et al., 2021; Gimpelson & Treisman, 2018; Hauser & Norton, 2017; Knell & Stix, 2020). The magnitude of this difference varies among individuals and countries. Gimpelson and Treisman (2018) examine

different measures of perceived inequality (e.g., perceived Gini coefficients based on the ISSP question on income distribution diagrams, self-position on the ladder using the LiTS data, perceived change in the gap between the rich and the poor from the Pew Global Attitudes Project), compare them with the actual levels and conclude that individuals are mostly wrong.

Building on these results, recent studies have started to investigate the reasons that can explain the determinants of inequality perceptions and the characteristics of individuals who are more likely to incorrectly assess inequality. For instance, Hauser & and Norton (2017) summarize some of the factors associated with inequality perceptions, including the social environment, media, and personal beliefs about economic mobility and meritocracy. Furthermore, using the ISSP data, Knell and Stix (2020) show that individuals at the low end of the income distribution perceive inequality to be higher than those at the top. Faggian *et al.* (2023) exploit data from a 2017 Special Eurobarometer survey[3] and demonstrate that poor households, left-wing voters, men, and highly educated individuals tend to perceive higher levels of inequality.

Finally, the role of actual inequality in shaping inequality perceptions is unclear. While Faggian *et al.* (2023) find a negative association between actual and perceived inequality, other studies suggest no statistically significant association between the two (Gimpelson & Treisman, 2018; Trump, 2023).

Studies on the determinants of the demand for redistributive policies have paid increasing attention to the role of the perception of inequality. The standard model to explain the effect of inequality on demand for redistribution (Meltzer & Richard, 1981) predicts that individuals with an income below the median favor higher redistribution. However, empirical research has failed to confirm this hypothesis. Gimpelson and Treisman (2018) suggest that the reason why the model fails is that it relies on the wrong assumption that people are fully aware of the actual inequality level. Overall, there is an emerging scientific consensus that inequality perception is relevant in

[3] The inequality perception question asks respondents to indicate the pie slices owned by the richest and poorest 20% of the population (Faggian et al., 2023).

shaping the demand for redistribution, while the actual level of inequality does not play a direct role (Bussolo et al., 2021; Choi, 2021; Engelhardt & Wagener, 2014; Niehues, 2014; Ranaldi & Milanović, 2022).

2.4 Perceived inequality and SWB

Although the above-mentioned studies show how perceptions can largely differ from reality and how measures of inequality can be significant determinants of other economic outcomes (e.g., redistribution), to the best of our knowledge, only two studies have specifically used measures of inequality perceptions in relation to life satisfaction. Schneider (2012) uses German data from ISJP to investigate the link between perceived inequality, measured as the ratio between the perceived average wages of managers versus unskilled workers, and life satisfaction. She finds a significant, negative association only when the analysis includes a measure of *preferences* for inequality, i.e., the ratio between what individuals consider to be the just remuneration of managers and unskilled workers. In addition, she finds that the results hold especially for those in the upper part of the income distribution. Furthermore, Schalembier (2019) uses ISSP data to construct a country-level subjective Gini coefficient based on individuals' answers about the type of society they live in. His specification includes both observed and subjective Gini and finds only the former to be a significant determinant of life satisfaction. However, when he interacts subjective inequality with preferences for inequality,[4] income, and perceived mobility,[5] the association between life satisfaction and subjective inequality becomes significant and dependent on income and perceived mobility. Being at the bottom of the income distribution and perceiving low mobility makes the negative effect of perceived inequality on life satisfaction stronger.

[4] Preferences for inequality come from the European Value Survey, where Individuals are asked to give a value between 1 and 10, where 1 = incomes should be made more equal, and 10 = there should be greater incentives for individual effort.

[5] Individuals who perceive the country to be mobile are those who think laziness and lack of willpower are the reason why individuals are in need. Data come from the European Value Survey.

Our paper builds on and substantively extends Schneider (2012) and Schalembier (2019) in studying the link between perceived inequality on subjective well-being while also taking into account actual inequality levels. Unlike Schneider (2012) who uses a measure of the perceived gap between high- and low-status occupations, we focus on an individual-level measure of the perceived change in the gap between the rich and the poor in 33 countries. Moreover, unlike Schalembier (2019), our analysis is at the individual level, which allows us to exploit individual-level variation and study individual-level mechanisms. Finally, we build on the pioneering work by Alesina et al. (2004) and test how the association between perceived inequality and life satisfaction depends on perceived mobility and fairness.

3 Conceptual framework and hypotheses development

Previous work on inequality and well-being proposed several channels explaining the relationship between income inequality and life satisfaction: i) self-interest, ii) inequality aversion, iii) externalities, and iv) reference group (e.g., Ferrer-i-Carbonell & Ramos, 2021).

First, people's attitudes toward income inequality are shaped by their personal interests and life experiences. Events like economic downturns or significant political shifts can influence whether they view income disparity as a threat to their future security or a gateway to potential prosperity. As a result, self-interest can justify both appreciation and dislike of inequality.

When people associate inequality with possible negative outcomes, they tend to have less tolerance for it. This perspective is more common in those who are more risk-averse, as they fear falling into less favorable circumstances due to unpredictable events (Benabou & Ok, 2001). Conversely, individuals might be accepting of inequality if they see that it offers them opportunities for upward mobility. For those who are at the bottom of the income distribution, inequality may signal the chance of getting in a better position in the future, if they think upward mobility is possible (Benabou & Ok, 2001). Moreover, personal history and experiences of hardship or shocks while growing up play a role in shaping these attitudes. Experiencing economic or political

shocks can increase a person's risk aversion, leading them to be more concerned about income inequality due to the fear of losing what they have and falling further behind in the income distribution. This concern is particularly acute for those who believe they might move down the economic ladder, prompting them to favor a more equitable income distribution. Therefore, depending on one's characteristics, self-interest explains a positive or a negative association between inequality and life satisfaction (Ferrer-i-Carbonell & Ramos, 2021).

Second, research suggests that individuals with strong preferences for equality experience a decline in SWB when inequality levels are high or inequality is increasing. This happens, in particular, when they perceive the economic process leading to the distribution of income as unfair (Ferrer-i-Carbonell & Ramos, 2021). It is important to distinguish inequality aversion and preferences from inequality perceptions because while the latter refers to a descriptive understanding of the world, inequality aversion or preferences imply a normative element.

Third, individuals might believe that inequality generates negative externalities, such as social and political instability, lack of trust, violence, and crime. In this case, inequality indirectly negatively affects their life (Ferrer-i-Carbonell & Ramos, 2021; Pickett & Wilkinson, 2010). Gallego (2016) relies on a survey experiment with Dutch data to show how, especially among the poor, inequality perceptions influence trust through a decrease in optimism and sense of belonging.

Finally, a large body of literature shows the importance of relative concerns and social comparisons (see e.g., Senik, 2021 & Clark et al., 2008, for an overview). For example, the Esterlin Paradox – the contradiction that at a point in time, happiness varies directly with income among and within nations, but over time, long-term growth rates of happiness and income are not significantly related –arises mainly due to social comparisons (Easterlin & O'Connor, 2022). At any given moment, those with higher incomes are typically happier because they compare their income to those with lower incomes. Conversely, those with lower incomes are less happy when comparing themselves to those who are better off. However, as incomes rise across the

population over time, the incomes of one's comparison group also increase. This general increase in income levels dilutes the potential positive effect that personal income growth might otherwise have on happiness.

Clark and D'Ambrosio (2015) detailed that people's perspectives on inequality are influenced by the groups they compare themselves to; this includes both groups they are part of, such as colleagues (e.g., Senik, 2021), and groups they hope to join in the future. Social comparison can explain positive and negative inequality-SWB relationships. Individuals may feel relative deprivation or satisfaction when they compare their incomes to others in their reference group, with empirical evidence suggesting that deprivation usually has a more substantial impact (Clark & D'Ambrosio, 2015). Nevertheless, a positive association between inequality and life satisfaction can persist under relative deprivation if observing others' better conditions provides insight into potential future advancements, known as the "tunnel effect." Additionally, the reference group's role extends beyond mere comparisons; it constitutes the social fabric where individuals develop values and gauge the fairness of the income distribution, also influencing the establishment of societal norms and attitudes.

While we cannot test the individual contribution of each of the four channels, we can explore their net effect on life satisfaction. The mechanisms suggested in the literature to explain the relationship between inequality and SWB do not only work for actual inequality. We can still apply the same arguments to inequality perceptions. For example, if the effect of inequality on life satisfaction is due to the self-interest channel, individuals will rely on their perception to assess whether their current condition can benefit or lose from what they think inequality is. In general, individuals form their beliefs based on personal experiences and what they can observe. It is what we feel and think about an event that determines our behaviors in relation to it. Therefore, we expect that what really affects life satisfaction is the perception of inequality, regardless of the level of variation of observed income inequality and whether such perception is correct or wrong. Therefore, our first hypothesis is:

H1: *Perceived inequality is associated with life satisfaction even after controlling for actual inequality.*

Furthermore, the association between perceived inequality and life satisfaction might depend on individuals' opinions about social mobility and fairness. For example, the relationship between life satisfaction and perceived inequality is likely to be negative among individuals who are inequality-averse and who believe that the system is unfair. Alternatively, the relationship between inequality and subjective well-being may be positive among individuals who believe that they may advance in the income distribution (self-interest mechanism).

In general, regardless of the mechanism, we expect people to be willing to accept higher levels of inequality, and consequently be more satisfied with their lives, if they meet two related criteria: i) they expect that they will be upwardly mobile in the future, and ii) they perceive their country to be fair, meaning that people expect hard work to be adequately rewarded.

H2: *The association between perceived inequality and life satisfaction depends on the perception of fairness and mobility of the society.*

Those who expect to move up in the income distribution are more likely to accept high inequality because they are optimistic about their future position. Similarly, individuals who believe that hard work and effort pay off, are more likely to accept high levels of inequality, hoping that a fair society will reward them with an adequate income.

4 Empirical framework

The relationship between the life satisfaction of person *i* in country *c* is typically modeled as a function of that country's income inequality (e.g., the Gini coefficient) and other individual-level characteristics (X_i):

$$LifeSat_{ic} = \alpha + \delta Gini_c + X_{ic}'\gamma + \varepsilon_{ic} \quad (1)$$

Two primary concerns emerge from this specification. First, the measure of inequality is at the national level, which may notably reduce variation, which could account for the non-statistically significant findings observed in some of the earlier research findings. Additionally, the mechanisms we outlined above, such as social comparisons, operate at the individual level: Individuals use a specific reference group for comparison, which shapes their personal experience of inequality. Second, model (1) implicitly assumes that individuals know the level of economic inequality in their country, and, consequently, are more or less satisfied with their lives because of it, which recent research findings have challenged (See Section 2.3).

To test our main hypothesis and also account for the fact that individual perceptions matter, we regress life satisfaction on both actual and perceived inequality.[6] Adding to the specification a measure of inequality perceptions allows us to simultaneously take into account an individual-level perspective and address the potential lack of awareness about inequality.

$$LifeSat_{ic} = \alpha + \delta Gini_c + PerceivedIneq'_{ic}\beta + X'_{ic}\gamma + Z'_c\,\zeta + \varepsilon_{ic} \quad (2)$$

where $LifeSat_{ic}$ is the self-reported life satisfaction of individual *i* living in country *c*. $PerceivedIneq'_{ic}$ is a categorical variable indicating how individual *i* perceived the change in income inequality in country *c* in the previous four years (stayed the same, increased, decreased, don't know/refusal, with stayed the same being the reference category), $Gini_c$ is the country-level pre-tax Gini coefficient. In alternative specifications, we rely on a categorical measure of the *change* in the Gini coefficient. This variable takes the value of 1 when the Gini coefficient stayed the same over the previous 4 years, 2 when it increased, and 3 when it decreased. In robustness checks, we also alternative measures of inequality, such as the top income shares.

[6] We also report results from estimations that include actual inequality and perceived inequality without simultaneously including also the other measure.

Furthermore, X_{ic} is a standard set of individual-level controls: biological sex, age, age squared, height, religion, income tertiles, marital status, household size, tertiary education, unemployment, living in an urban area, longitude and latitude. Additionally, Z_c is a vector of country-level controls (rule of law, political stability, corruption, and GDP per capita), and ε_{ic} is the idiosyncratic error. When we do not include actual inequality in our analysis, we replace the country-level controls with country fixed effects.

The parameter of interest—β —captures the association between perceived inequality and life satisfaction. If what matters for individuals is the perception of the change in inequality rather than true inequality, we expect a significant estimate for β, regardless of the presence of the country-level Gini coefficient.

Following Ferrer-i-Carbonell & Frijters (2004), we estimate equation (2) using an Ordinary Least Squares (OLS) estimator, but in robustness checks, we also present results from an ordered probit estimator. We use standard errors robust to heteroskedasticity and we cluster them at the primary sampling unit to account for the non-independence between individuals in the same locality.

To test hypothesis H2, we interact perceived income inequality with measures of expected mobility and perceived fairness of the economy. To simplify the interpretation of the results, perceived inequality is in this specification a dummy for perceiving an increase in inequality. If believing in high social mobility (or in the fairness of the economy) leads to higher tolerance towards inequality, we expect a positive coefficient of the interaction term. This, in turn, would imply that the effect of perceiving an increase in inequality is moderated by the perception of upward mobility (or fairness). In other words, individuals who expect to have a substantial chance of improving their circumstances (or those who believe the system is fair) are more satisfied with life when faced with rising inequality, compared to those who foresee fewer opportunities to improve (or believe the system is not fairly rewarding effort).

5 Methodological challenges and remedies

Our estimation strategy faces several endogeneity concerns. First, reverse causality could be affecting our results. Specifically, the life satisfaction of an individual may influence the way she perceives society and the economy, including inequality. Thus, the direction of the inequality-happiness relationship remains unclear. Second, omitted variables bias is potentially a problem due to common method variance (CMV) and selection on unobservables. Both life satisfaction and perceived inequality are self-assessed measures collected from the same survey, requiring similar cognitive effort from the respondent. Therefore, some individuals may answer these questions following a pattern, e.g., leaning towards more or less positive responses. Likewise, unobservable characteristics, e.g., personality traits or unobserved ability, may influence both inequality perceptions and life satisfaction.

The first strategy we use to deal with endogeneity is an instrumental variable approach. We instrument our main explanatory variable – a binary measure of the perception of an increase in income inequality – using cohort averages. For each observation, we take the share of individuals in her cohort, excluding herself, who perceived an increase in inequality and use it as an instrument for her perception. We construct cohorts comprising at least 50 individuals based on their country of residence, birth year, biological sex, and religion. The motivation behind the choice of this instrument is that peers, i.e., individuals within the same reference group, influence each other's beliefs and perceptions. Consequently, we anticipate that the perception of inequality within one's cohort will significantly influence an individual's own perception of inequality.

The exclusion restriction requires that our instrument only affects life satisfaction through inequality perception and it is uncorrelated with the error term in equation (2). One possible violation of the exclusion restriction could lie in the existence of unobservable cultural values that are correlated with both life satisfaction and the cohort's average perception. However, the inclusion of country fixed effects accounts for common values shared among individuals in the same country. An effective instrument allows us to tackle endogeneity due to both reverse

causality and omitted variables bias. The instrumental variable also mitigates CMV since, by construction, our instrument excludes the individual of interest from her cohort when we compute the share of the perceived increase in inequality. Therefore, by relying on the answers given by other individuals, we should be able to avoid bias due to self-assessment by the same person of both dependent and independent variables.

Following the literature, we mitigate CMV issues by controlling for two additional sets of regressors. First, we include two measures of ideology, namely opinions on political and economic systems, to capture unobservable characteristics related to ideology that might be correlated with both self-reported life satisfaction and inequality perception. For example, dissatisfaction with the current economic system influences an individual's assessment of both dependent and explanatory variables (Bussolo et al., 2021). Second, following Prati (2023), we control for other self-assessed measures: assessment of current health, job satisfaction, and satisfaction with the financial situation, which are correlated with life satisfaction. These variables likely capture the same patterns in answering questions related to self-assessed conditions and perceptions that underpin CMV. If our results hold after including these variables, we can rule out the possibility that CMV is entirely driving the main findings.

We next assess the severity of selection on unobservables and attempt to mitigate it through three strategies. First, we rely on entropy balancing (Hainmueller, 2012). As a first step, we create weights to balance covariates between the treatment (those who perceive an increase in inequality) and comparison (those who do not perceive an increase in inequality) groups. This makes the groups more comparable in terms of observable characteristics.[7] To generate the weights, we rely on the first and second moments of strictly exogenous variables: age, biological sex, and religion. In the second step, we run our main specifications with the weights generated

[7] We do so by using the Stata command `ebalance`, developed by Hainmueller and Xu (2013).

in the first stage (Marcus, 2013; Nikolova, 2019). If our estimations suffer from selection issues, the estimations with and without weights would show significant differences.

Second, we follow Otrachshenko et al. (2023) in adding parental education, parental occupation, and the number of books while growing up as additional controls. We use these measures to account for human capital, social status, and family environment while growing up and the potential selection into forming inequality perceptions based on these characteristics.

Third, we perform the Oster check, which allows us to assess the size of the bias coming from unobservables that would nullify the main coefficient estimates (Oster, 2019). Assuming a value of $R^2_{max} = 1.3 * \widehat{R^2}$, i.e., a hypothetical R-squared from an estimation including both observables and unobservables, we use the Stata command psacalc (Oster, 2016) to compute a delta such that the coefficient of interest equals zero. In other words, the delta shows how large the selection issues would have to be to render the coefficient estimated on inequality perception equal to zero (a delta value of 1 suggests observables are at least as influential as unobservables).

Finally, we also acknowledge the risk of reversibility highlighted by Bond and Lang (2019), implying that the signs of the coefficients from the OLS regressions might be reversed by recoding the distance between the answers and response categories on the life satisfaction scale. Therefore, in robustness checks, we perform our main specifications using an Ordered Probit estimator and separate probit regressions, whereby the dependent variable is recorded as separate dummies taking the value of one for each of the possible values of life satisfaction (Kaiser & Vendrik, 2019).

6 Data and variables

The main individual-level data source is the 2016 Life in Transition Survey (LiTS III),[8] a large nationally representative survey implemented by the European Bank for Reconstruction and Development and the World Bank. The survey includes questions about individual beliefs, perceptions, and attitudes. The LiTS III covers about 1500 individuals per country providing information about their households in 34 countries (30 transition countries,[9] Cyprus, Greece, Germany, and Italy).

The LiTS is our source of information for both the dependent variable, life satisfaction, and the main independent variable of interest, perception of inequality, as well as a large set of individual controls. To the best of our knowledge, this is the only survey that includes information on both inequality perceptions and life satisfaction for a large sample of individuals from different countries. This is unique in allowing us to study the relationship between perception of inequality and subjective well-being at the individual level, and in explicitly including a measure of perceived income inequality.

Our dependent variable relies on the answer to the question "To what extent do you agree with the following statements? All things considered, I am satisfied with my life now", where the values range from 1, "strongly disagree", to 5, "strongly agree". Life satisfaction is a cognitive measure of overall well-being that reflects one's life circumstances (Nikolova & Graham, 2022; Organisation for Economic Co-operation and Development, 2011). The validity of this measure has a wide consensus in the literature (Di Tella & MacCulloch, 2006; Nikolova & Graham, 2022; Organisation for Economic Co-operation and Development, 2011; Stone & Mackie, 2013). In our

[8] More information about the EBRD's Life in Transition Survey III is available at https://www.ebrd.com/what-we-do/economic-research-and-data/data/lits.html.

[9] Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, FYR Macedonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyz Rep., Latvia, Lithuania, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Rep., Slovenia, Tajikistan, Turkey, and Ukraine. We exclude Uzbekistan, for which we do not have data on inequality perception.

robustness checks, we additionally create 5 dummies, one for each of the values of life satisfaction, to use in probit models to address the risk of reversibility.

Our key explanatory variable is individual-level perceived inequality, which captures the perceived change in income inequality (See Table A1 for variable definitions). The LiTS III asked the respondents the question: "Do you think the gap between rich and poor in the past 4 years has stayed the same, become larger, or become smaller in [COUNTRY]?" The answers are coded 1 if the respondent perceived the gap to have "Stayed the same," 2 for "Became Larger", 3 for "Became Smaller", 4 for "Don't know", and 5 for "Refusal." Stayed the same is the reference category. Appendix Table A2 demonstrates the individual characteristics of respondents associated with the probability of giving each answer to the inequality perception question based on a multinomial regression. In particular, individuals who answered with "Don't know" are different in several characteristics (e.g., age, opinions on the economics system) from those who answered "Stayed the same." Therefore, we treat each answer as a different category: same, larger, smaller, and don't know/refusal.[10]

To analyze whether inequality perceptions matter above and beyond actual inequality, we also include country-level measures of actual income inequality. In the main analysis, we rely on the 2014 pre-tax Gini coefficient of national income from the World Inequality Database (WID), and in alternative specifications, we construct a categorical measure of the *change* in income inequality that takes the value of 1 when the Gini coefficient stayed the same during the 4 years before the survey,[11] 2 if there was an increase in inequality, and 3 if it decreased. In the robustness checks, we also rely on different measures of economic inequality such as the post-tax Gini

[10] We combine the "Don't know" and "Refusal" answers in one category since the latter represents less than 1% of the responses.

[11] Following Gimpelson and Treisman (2018), we consider variation within +/- 1 percentage point as "no change." A negative (positive) change larger than 1 percentage point is considered as a decrease (increase) in income inequality. In robustness checks, we also use different measures of actual inequality and different thresholds to construct the categorical measure of change in actual inequality.

coefficient and the shares of income received by the top 1%, top 10%, and bottom 50% of the population.

Table 1 displays the answers to the inequality perception question in each analysis country, excluding Uzbekistan where inequality perceptions were not collected. The last two columns report the Gini coefficient in 2014 and the actual change in the Gini coefficient in the previous 4 years. Across all countries, two-thirds (66%) of respondents think that the gap between the rich and the poor increased in the previous 4 years, 23% that it remained the same, and 5% that it increased. However, there is significant heterogeneity between the countries in the analysis sample. In Albania, for example, the share of those who perceived an increase in inequality is approximately equal to the share of those who perceived no change. Cyprus represents one extreme case where almost the whole population perceived an increase in the gap between the rich and the poor. In Tajikistan, on the other hand, only around 20% of the individuals perceived an increase, while more than 40% perceived a decrease.

Table 1: Actual and perceived inequality in countries in the analysis sample

Country	**Inequality perception**				**Actual inequality**	
	Same	Increase	Decrease	DK/Refusal	Gini	Gini change
Albania	0.41	0.42	0.11	0.06	0.48	0.031
Armenia	0.16	0.78	0.04	0.02	0.50	0.001
Azerbaijan	0.16	0.54	0.09	0.21	0.48	0.009
Belarus	0.37	0.55	0.04	0.04	0.44	-0.015
Bosnia and Herz.	0.26	0.68	0.01	0.05	0.48	0.006
Bulgaria	0.21	0.69	0.02	0.08	0.49	0.023
Croatia	0.28	0.66	0.02	0.04	0.48	0.011
Cyprus	0.04	0.94	0.01	0.01	0.50	0.042
Czech Rep.	0.27	0.69	0.02	0.03	0.39	0.002
Estonia	0.25	0.62	0.03	0.10	0.52	0.030
FYR Macedonia	0.22	0.67	0.04	0.07	0.45	-0.028
Georgia	0.27	0.55	0.11	0.07	0.58	0.001
Germany	0.18	0.66	0.04	0.12	0.50	0.019
Greece	0.14	0.85	0.01	0.01	0.49	0.021
Hungary	0.15	0.77	0.04	0.04	0.42	-0.003
Italy	0.21	0.77	0.02	0.01	0.43	0.003

Kazakhstan	0.22	0.67	0.06	0.04	0.50	-0.034
Kosovo	0.27	0.57	0.09	0.07	0.47	-0.023
Kyrgyz Rep.	0.31	0.54	0.09	0.05	0.47	-0.040
Latvia	0.32	0.58	0.05	0.05	0.49	0.009
Lithuania	0.23	0.71	0.03	0.03	0.53	0.061
Moldova	0.25	0.64	0.03	0.08	0.49	-0.014
Mongolia	0.14	0.84	0.02	0.01	0.57	0.004
Montenegro	0.29	0.56	0.03	0.11	0.49	-0.002
Poland	0.32	0.49	0.06	0.13	0.48	0.003
Romania	0.23	0.66	0.03	0.08	0.54	0.028
Russia	0.22	0.70	0.02	0.06	0.55	-0.005
Serbia	0.24	0.62	0.06	0.08	0.56	0.045
Slovak Rep.	0.17	0.77	0.01	0.05	0.39	-0.025
Slovenia	0.06	0.89	0.01	0.03	0.42	0.004
Tajikistan	0.29	0.22	0.42	0.07	0.53	-0.002
Turkey	0.26	0.61	0.08	0.04	0.59	0.000
Ukraine	0.17	0.77	0.03	0.02	0.40	-0.004
Total	**0.23**	**0.66**	**0.05**	**0.06**	**0.49**	**0.022**

N=42,616

Unlike previous research which has erroneously used inequality *perception* and inequality *aversion*, we distinguish between the two concepts. While measures of inequality aversion (i.e., questions such as “Do you think that the gap between the rich and the poor should be reduced?” or “Do you think the government should tax the rich more?”) are normative, the correct measure of perceived inequality should be positive and not normative (i.e., “Do you think income inequality has increased/decreased/stayed the same?” or “Which income distribution do you think best resembles the one in your country?”). In other words, the correct measure of inequality perceptions does not capture opinions regarding a preference, but one that elicits an assessment of the current levels or changes. In robustness checks, we add to our main specification a measure of inequality aversion that reflects individuals’ agreement, on a 1 to 5 scale, with the statement “The gap between the rich and the poor should be reduced”.[12] Similarly, our measure

[12] In our sample, the correlation coefficient between the dummy for perceiving an increase in inequality and inequality aversion is equal to 0.129.

of inequality perception is different from measures of the perception of fairness in income distribution. Again, the latter contains a normative component in asking the individual to express an opinion about the current state, instead of a simple description of it.

Following the literature on the determinants of life satisfaction, we include a standard set of individual characteristics as additional controls (Nikolova & Graham, 2022): biological sex, age, age squared, height, religion (i.e., a dummy for being Christian), income tertiles, marital status, household size, tertiary education, unemployment, living in an urban area, longitude and latitude (See Table A1 for variable definitions and Table A3 for summary statistics). Supplementary controls used in additional specifications include family and parental characteristics while growing up, perceptions of fairness and mobility, and others (see Table A4 for summary statistics).

Following Otrachshenko *et al*. (2023), in certain specifications, we also include country-level controls based on data from the Varieties of Democracy (V-Dem) database that capture the rule of law, political stability, corruption, and GDP per capita in 2014. Table A5 in the Appendix provides summary statistics for these additional country-level variables.

7 Results

7.1 Main results

Table 2 reports the results of estimating Equation (2). All regressions are estimated using OLS and the dependent variable in all models is life satisfaction.

Table 2: The association between (perceived) inequality and life satisfaction

	(1) Life satisfaction	(2) Life satisfaction	(3) Life satisfaction	(4) Life satisfaction	(5) Life satisfaction	(6) Life satisfaction
Gini	-0.474		-0.752**			
	(0.290)		(0.282)			

Gini increase				0.059*		
				(0.026)		
Gini decrease				0.060		
				(0.032)		
Perceived increase		-0.323***	-0.327***	-0.322***	-0.261***	-0.258***
		(0.017)	(0.017)	(0.017)	(0.016)	(0.015)
Perceived decrease		0.234***	0.236***	0.238***	0.133***	
		(0.033)	(0.033)	(0.033)	(0.029)	
Adj. R^2	0.051	0.074	0.074	0.074	0.175	0.173
N	42,616	42,616	42,616	42,616	42,616	42,616
Individual controls	exog	exog	exog	exog	all	all
Country FEs	no	no	no	no	yes	yes

Notes: Results are OLS estimates. The dependent variable is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). Standard errors (in parenthesis) are clustered at the primary sampling unit level. Exogenous individual-level controls: male, age, age^2, height, Christian, longitude, and latitude. Additional individual-level controls: income, marital status, household size, education, unemployment, and urban location. When country fixed effects are not included, we use country-level controls: rule of law, political stability, corruption, and GDP per capita.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2 reports only the main coefficients of interest, but full econometric output is available in Appendix Table A6. In the first column, we investigate the association between the Gini coefficient[13] and individual-level life satisfaction. In addition to actual inequality, Model (1) includes exogenous individual-level controls, i.e., biological sex, age, age squared, height, religion, longitude and latitude, and the country-level controls. The coefficient estimates on the individual-level controls (See Table A6) are in line with the literature on the determinants of life

[13] We also use alternative measures of actual inequality: post-tax Gini, the share of income in the hands of the top 10%, top 1%, and bottom 50% of the population and find similar results. Results from these estimations are available upon request. The coefficient estimates of perceiving an increase in inequality in regressions with alternative measures of actual inequality are part of the Specification Curve Analysis in section 8.3.

satisfaction (Nikolova & Graham, 2022). The coefficient estimate on the Gini variable is statistically insignificant, suggesting that the inequality level in the country does not influence individuals' life satisfaction. In our sample of transition economies, these results seem to confirm the conclusions in the most recent review articles and meta-analysis on inequality and subjective well-being, where no consistent evidence of a clear association between actual inequality and subjective well-being emerges across different countries (Ngamaba et al., 2018).

In the second column of Table 2, we replace the Gini with perceived inequality using the same set of controls as in Column 1 of Table 2. The main coefficients of interest are the dummies for perceiving an increase or a decrease in inequality, whereas the dummy for perceiving no inequality changes is the baseline. The regression also includes a dummy for "Don't Know/Refusal" answers to preserve the number of observations (See Table A6 for econometric output). All coefficient estimates are statistically significant. The life satisfaction of individuals who perceived an increase in inequality is on average 0.33 points lower than those who perceived no change, while people who perceived a decrease in inequality are 0.24 points more satisfied with their lives than those who reported no change.

In column 3 of Table 2, we include both actual and perceived inequality. The coefficient of the Gini index is marginally statistically significant and negative.[14] The coefficients of perceived inequality are still highly statistically significant and in line with those in column 2.

Given that our measure of perceived inequality is based on the perception of a change in inequality, specification (4) relies on the categorical variable for the change in country-level inequality. The baseline here is no change in the Gini coefficient. We find that the coefficient for an increase in the Gini coefficient is marginally significant and negatively associated with life satisfaction, compared to no change in inequality, while a decrease in the Gini is not significantly associated with life satisfaction. The results for inequality perceptions are in line with the previous

[14] We test for the significance in the differences between the coefficient estimates of Gini in the two specifications and reject the null hypothesis of equal estimates (χ^2 = 39.42, p-value = 0.000).

specification (column 3 of Table 2), where actual inequality enters in levels. Therefore, inequality perception matters for individuals' life satisfaction regardless of whether we control for actual inequality and whether this is in levels or changes.

In column 5 of Table 2, we only focus on perceived inequality. We add all the individual-level controls and country fixed effects, which take into account country characteristics, culture, and institutions. The coefficient estimates for perceiving an increase (-0.261) and a decrease in inequality (0.133) are smaller in magnitude compared to the previous specifications, but they remain statistically significant at the 1% level. The substantive significance of the coefficient estimates is relatively big: estimated at the sample mean of 3.21, the perceived increase in inequality implies a life satisfaction drop of 8% and the perceived fall in inequality implies a 4% increase in life satisfaction. We benchmark these results by comparing them to the coefficient estimate for being unemployed (-0.114, see Table A6) implies a life satisfaction loss of 3.4%, while belonging to the highest tertile of the income distribution is associated with 0.52 points (16%) average increase in life satisfaction relative to those in the first tertile. As such, the magnitudes of the perceived inequality variables are economically meaningful.

Finally, the last column of Table 2 reports the estimates from a specification where perceived inequality is measured as a dummy for perceiving an increase in inequality (the variable is coded as 0 for all other answers to the inequality perception question, including don’t know or refused). The results in Column 6 of Table 2, which also include individual-level controls and country dummies, provide a baseline for the specifications and robustness checks in the rest of the paper. The findings show that those who perceived an increase in inequality are 0.26 points less satisfied with their life on average, compared to everyone else. Again, this accounts for about an 8% drop in life satisfaction. In general, the results of Table 2 suggest that inequality perception matters for life satisfaction, above and beyond the influence of actual inequality. These results show evidence in support of H1 that the perception of inequality matters for explaining subjective well-being independently of actual inequality levels.

Our findings largely differ from those of Schalembier (2019) and Schneider (2012). Specifically, in our sample of mostly transition economies and with a different, individual-level measure of perceived inequality based on the perception of a change in the gap between the rich and the poor, we find perceived inequality to be a significant determinant of life satisfaction even when we do not include the preferences for inequality in the specification (Schneider, 2012) or inequality perception is not interacted with income or perceived mobility (Schalembier, 2019), as shown in the next section.

7.2 Perceived mobility and fairness

The extant literature suggests that social mobility and fairness of the economic system can affect the way inequality is associated with life satisfaction, which is at the core of our hypothesis H2, which we test by including in our main specification (column 6 of Table 2) measures of perceived mobility and fairness and their interaction with the dummy for perceiving an increase in inequality.

Table 3: The association between perceived inequality and life satisfaction, accounting for mobility and fairness

	(1) Mobility	(2) Fairness	(3) Fairness
Perceived increase	-0.273***	-0.280***	-0.265***
	(0.025)	(0.019)	(0.017)
Mobility (poor-rich)	0.263***		
	(0.036)		
Mobility (rich-poor)	0.249***		
	(0.036)		
Mobility (rich-rich)	0.522***		
	(0.026)		
Perceived increase * Mobility (poor-rich)	0.096*		
	(0.044)		
Perceived increase * Mobility (rich-poor)	0.046		
	(0.042)		
Perceived increase * Mobility (rich-rich)	0.100***		
	(0.030)		

Fair (rich = hard work)		0.095***	
		(0.020)	
Perceived increase * Fair (rich = hard work)		0.073**	
		(0.024)	
Fair (poor = lazy)			0.191***
			(0.021)
Perceived increase * Fair (poor = lazy)			0.093***
			(0.027)
Adj. R^2	0.217	0.177	0.182
N	42,616	42,616	42,616

Notes: Results are OLS estimates. The dependent variable is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). Standard errors (in parenthesis) are clustered at the primary sampling unit level. All specifications include country fixed effects. Individual-level controls: male, age, age^2, height, Christian, longitude, latitude, income, marital status, household size, education, unemployment, urban.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

First, following Cojocaru (2014), we construct a measure of expected individual mobility based on the answers to the LiTS questions about i) one's position on a 1 to 10 income ladder in the future[15] and ii) self-positioning on a 1 to 10 ladder in the present. We create four dummies: the first one for self-positioning below the country average both in the present and the future (poor-poor), the second one for below average now and above average in the future (poor-rich), the third one for those who believe they are now rich but expect to be poor in the future (rich-poor), and the last one for self-positioning above average in the present and in the future (rich-rich).[16]

Second, following Bjørnskov *et al.* (2009), we proxy perceived fairness in the country's income distribution using two variables: i) an indicator equal to one for those who believe effort and hard work are the main way to succeed and ii) a variable equal to one if respondents believed that laziness is the main reason for having poor people in the society.[17]

[15] The survey asks the respondents to position themselves on a 1-10 scale in 4 years.
[16] To preserve the sample size, we include also a dummy for the missing observations (not reported in the regression table).
[17] Further information about the construction of the variables is available in the appendix Table A1.

Table 3 reports the results for the main coefficients of interest for mobility (Column 1) and fairness (Columns 2 and 3). Column 1 demonstrates as expected, that people who believe in their upward social mobility (poor-rich) seem to be more willing to accept an increase in inequality compared to those who expect to remain in the bottom half of the distribution, which is the omitted category. Turning to the interaction terms between perceived inequality increases and mobility, the coefficient estimates are positive, albeit not always statistically significant. This suggests that in line with the self-interest hypothesis, those who expect upward mobility or to remain at the top of the income distribution are more likely to be accepting of inequality. However, the magnitude of the coefficient estimates for the interaction term between mobility perceptions and perceived inequality increases are relatively small and not enough to fully offset the negative association between perceiving an increase in inequality and life satisfaction. These results suggest that perceived social mobility partially moderates the inequality-happiness relationship in that it cushions the negative effect of inequality when an individual thinks she will move up or remain in a good position. As such, these results are in line with H2.

The next two columns of Table 3 report the estimations with the two dummy variables of perceived fairness of the economy and their interaction with perceived inequality increases. As expected, the coefficient estimates of both fairness variables are positive and statistically significant. Individuals who perceive the economy to be fair in rewarding effort and hard work and punishing laziness are more satisfied with their lives. We next turn to the coefficient estimates of the interactions between fairness and inequality perceptions. Since both measures of perceived fairness are dummy variables, the coefficient of perceived inequality increase represents the marginal effect for those who do not consider society as fair. The marginal effect of a perceived increase in inequality on life satisfaction for those who find society to be fair is cushioned by the positive coefficient of the interaction term. In column 3 of Table 3, the marginal effect is -0.21 (-0.280+0.073), while in column 4 it is -0.16. Again, we see that perceiving an increase in inequality is not as detrimental to the life satisfaction of those who perceive society as fair. Yet, the

perception of a fair system only partially offsets the negative association between perceived inequality and life satisfaction.

Our findings are not fully in line with those of Schalembier (2019) who first finds no significant effect of perceived inequality (country-level subjective Gini) on life satisfaction. However, in estimations where perceived inequality is interacted with a measure of perceived fairness, he finds that the life satisfaction of those who do not believe the system is fair is lower for higher levels of perceived inequality.[18]

We find statistical support for hypothesis H2 that the association between perceived inequality and life satisfaction depends on perceived fairness and mobility. The negative correlation between a perceived increase in inequality and life satisfaction is smaller for those who believe in mobility and fairness. However, the magnitude of the interaction terms is insufficient to offset the negative association between perceived inequality and life satisfaction. Overall, perceiving an increase in inequality is detrimental to individuals' life satisfaction, even for those who find society to be fair and mobile.

8 Robustness checks and heterogeneity

8.1 Endogeneity

One of the main concerns regarding our empirical strategy is the risk of endogeneity due to reverse causality and omitted variable bias because, for example, of common method variance. Table 4 reports the results from a set of approaches used to tackle these issues.

[18] Shalembier (2019) uses a dummy for those who believe that the main reasons for people to be in need are laziness and lack of willpower as a proxy for perceiving the country as mobile. We call it here perceived fairness because in this paper we rely on similar questions to measure perceived fairness.

Table 4: The association between perceived inequality and life satisfaction, robustness checks

	(1) IV	(2) Entropy balancing weights	(3) Human capital controls	(4) Ideology controls	(5) Other satisfaction controls
Perceived increase	-1.582**	-0.257***	-0.260***	-0.257***	-0.0861***
	(-3.22)	(-17.00)	(-17.32)	(-16.95)	(-7.54)
Adj. R^2		0.174	0.178	0.177	0.478
N	39234	42616	42616	42616	32965
Estimation	2SLS	OLS	OLS	OLS	OLS
Entropy balance		yes			
Parental education			yes		
Parental occupation			yes		
Books			yes		
Preferences for democracy and market economy				yes	
Other satisfaction					yes

Notes: The dependent variable is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). Standard errors (in parenthesis) are clustered at the primary sampling unit level. All specifications include country fixed effects. Individual-level controls: male, age, age^2, height, Christian, longitude, latitude, income, marital status, household size, education, unemployment, urban. In column (1) perceived increase is instrumented using the cohort average.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

First, we use a 2SLS estimator and instrument the dummy for perceiving an increase in the gap between the rich and the poor with the share of peers perceiving an increase in inequality within the cohort, excluding the individual of interest. Each cohort includes at least 50 individuals who share the same country, year of birth range, biological sex, and religion. Appendix Table A7 displays the first and second-stage results from four different IV estimations, where we construct different cohorts (instruments). For all of them, we find a statistically significant and positive correlation between the instrument and the respondent's own inequality perceptions, confirming the idea that peers' perceptions shape individual perceptions. Except for the estimation in Columns 1 and 2, where the cohort construction relies on the full set of variables, resulting in relatively small cohort size and overall sample size, the F-statistic from the first-stage regressions is above the usual threshold of 10, which suggests that our instrument is strong.

Column 1 of Table 4 reports the second stage coefficient of instrumented inequality perception using an instrument based on country, birth cohorts of 5 years apart, and biological sex. Since our dependent variable is binary, while our instrument is not, the second-stage coefficients can be inflated and the interpretation of their size is not possible (Angrist & Pischke, 2009). However, we can still observe the statistical significance and the direction of the association. The IV estimates (Column 1 of Table 4) confirm the validity of our main specification. Similarly to our baseline estimate (Column 6 of Table 2), we find a negative, statistically significant association between perceiving an increase in inequality and life satisfaction.

Second, to check the extent to which the selection on unobservables drives our results, we use three techniques: i) entropy balancing, ii) inclusion of additional controls for human capital, social status, and family environment, and iii) Oster check. Column 2 of Table 4 presents the results with entropy balancing weights. All the coefficient estimates, including the one for perceiving an increase in inequality, are very close to the ones in the baseline regression (column 6 of Table 2), suggesting that selection on unobservable is not the main driver of our findings.

Furthermore, Column 3 of Table 4 reports the estimates for regressions where we add parental occupation and education, and the number of books at home while growing up as additional covariates. The coefficients for the perceived inequality increase are almost unchanged.[19] We report here only the specification where all these additional controls are included, but we also enter each of them separately and the result does not change, providing additional support to our main conclusion. Finally, we compute the Oster delta (Oster, 2019) and assume $R^2_{max} = 1.3 * \widehat{R^2}$, where $\widehat{R^2}$ is the R^2 from our main specification (column 6 of Table 2). Oster's delta is in our case 6.18, which suggests that the impact of unobservable characteristics

[19] We test for the difference in the coefficents estimates of the main estimation (Column 6 of Table 2) and the one with the additional controls in Column 3 of Table 4. We cannot reject the hypothesis of equal coefficient (χ^2 = 2.31, p-value = 0.128).

needs to be six times as large as the impact of the included controls to nullify the estimated association between perceptions of inequality and SWB.

Third, we present two additional ways of addressing the risk of CMV between our dependent variable and inequality perception. In column 4 of Table 4, we add to our main specification, two measures of ideology, namely, the preferences for democracy and market economy (see Table A1 for variable definitions). The coefficient estimate for perceiving an increase in inequality does not change after including these economic and political preferences. In the last column of Table 4, we include three additional self-assessed measures, i.e., self-reported health, job satisfaction, and satisfaction with own financial situation. The direction of the association between our main explanatory variable and life satisfaction remains consistent with the main specification, however, the size of the coefficient estimate of perceiving an increase in inequality is significantly smaller. This is in line with our expectations since these additional controls are very likely to be highly correlated with life satisfaction and with each other, and they might capture unobservable behaviors in the respondents' way of answering self-assessed questions, that is CMV. However, the fact that the statistical significance and the direction of the association between inequality perception and life satisfaction is unchanged suggests that CMV is not the main driver of the findings.

8.2 Reversibility

Table 5: The association between perceived inequality and life satisfaction, ordered probit and probit estimations

	(1) Ordered probit	(2) Probit Life satisfactio n=1	(3) Probit Life satisfactio n =2	(4) Probit Life satisfactio n =3	(5) Probit Life satisfactio n =4	(6) Probit Life satisfactio n =5
Perceived increase	-0.268***	0.279***	0.247***	0.016	-0.185***	-0.205***
	(0.016)	(0.027)	(0.021)	(0.018)	(0.018)	(0.024)
/						
cut1	-2.114***					
	(0.268)					

cut2	-1.288***					
	(0.268)					
cut3	-0.565*					
	(0.267)					
cut4	0.914***					
	(0.267)					
Pseudo R^2	0.065	0.131	0.060	0.019	0.064	0.076
N	42,616	42,616	42,616	42,616	42,616	42,616

Notes: The dependent variable in Column 1 is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). In columns 2-6 the dependent variables are dummies for reporting each value (1-5) of life satisfaction. Standard errors (in parenthesis) are clustered at the primary sampling unit level. All specifications include country fixed effects. Individual-level controls: male, age, age^2, height, Christian, longitude, latitude, income, marital status, household size, education, unemployment, urban.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In section 5, we acknowledged the risk of reversibility highlighted in Bond and Lang (2019). To address this potential issue, we re-estimate our main specification relying on an Ordered Probit estimator and five separate probit estimations where the dependent variables are dummies for having one of the five values taken by our measure of life satisfaction against any other value. Table 5 shows the results from these estimations.

Column 1 of Table 5 is based on an ordered probit regression and the results for the perceived increase in inequality are in line with our main specification. Computing the marginal effects for each of the 5 possible outcomes of our dependent variable, we find that perceiving an increase in inequality is associated with a higher probability of reporting lower levels of life satisfaction (life satisfaction = 1, 2, or 3)[20] and a lower probability of reporting high levels of life satisfaction (life satisfaction = 4 or 5).[21]

Columns 2 to 6 of Table 5 show the results for the five probit estimations using different life satisfaction dummies as dependent variables. For example, in Column 2, the dependent variable

[20] The marginal effects of perceiving an increase in inequality are equal to 0.036 for life satisfaction = 1, 0.042 for life satisfaction = 2, and 0.019 for life satisfaction = 3.
[21] The marginal effects of perceiving an increase in inequality are equal to -0.057 for life satisfaction = 4, and -0.039 for life satisfaction = 5.

is coded as 1 if the value of life satisfaction is 1 and 0 for all other values. In Column 3, it is coded as 1 if the value of life satisfaction is 2 and is set to 0 for all other values.

The probability of reporting lower values of life satisfaction (life satisfaction = 1 in Column 2 or 2 in Column 3)[22] is higher for those who perceived an increase in inequality, and, similarly, the probability of having higher values of life satisfaction (life satisfaction = 4 or 5)[23] is lower for those who perceived an increase in inequality. Perceived inequality is unassociated with the middle category of life satisfaction (Column 3). Overall these results suggest that our main findings are not affected by reversibility and confirm our conclusion: perceiving an increase in inequality is, on average, associated with lower life satisfaction relative to any other perception i.e., perceiving an increase or no change in inequality.

8.3 Model selection

We also perform checks about whether our results depend on the choice of the control variables or are driven by specific subgroups within the analysis sample. Figure 1 displays the results of a specification curve analysis (Simonsohn et al., 2020),[24] a technique that allows visualizing how the choice of the model affects the main coefficient estimate of perceiving an increase in inequality. In the upper part of Figure 1, we show the coefficient estimates and the confidence intervals, while in the bottom part, we highlight the variables that are included or removed from each estimation.

We start by regressing life satisfaction over the binary indicator for perceiving an increase in inequality and country fixed effects only. We first add exogenous controls (biological sex, age, age squared, height, religion, longitude, and latitude) and then present the main specification, in red, with the additional set of standard controls (income tertiles, marital status, household size, tertiary education, unemployment, living in an urban area). We also enter, one at a time, three

[22] Marginal effects equal to 0.037 and 0.059, respectively.
[23] Marginal effects equal to -0.067 and -0.031, respectively.
[24] The SCA is implemented in Stata using the `speccurve` command developed by M.E. Andresen.

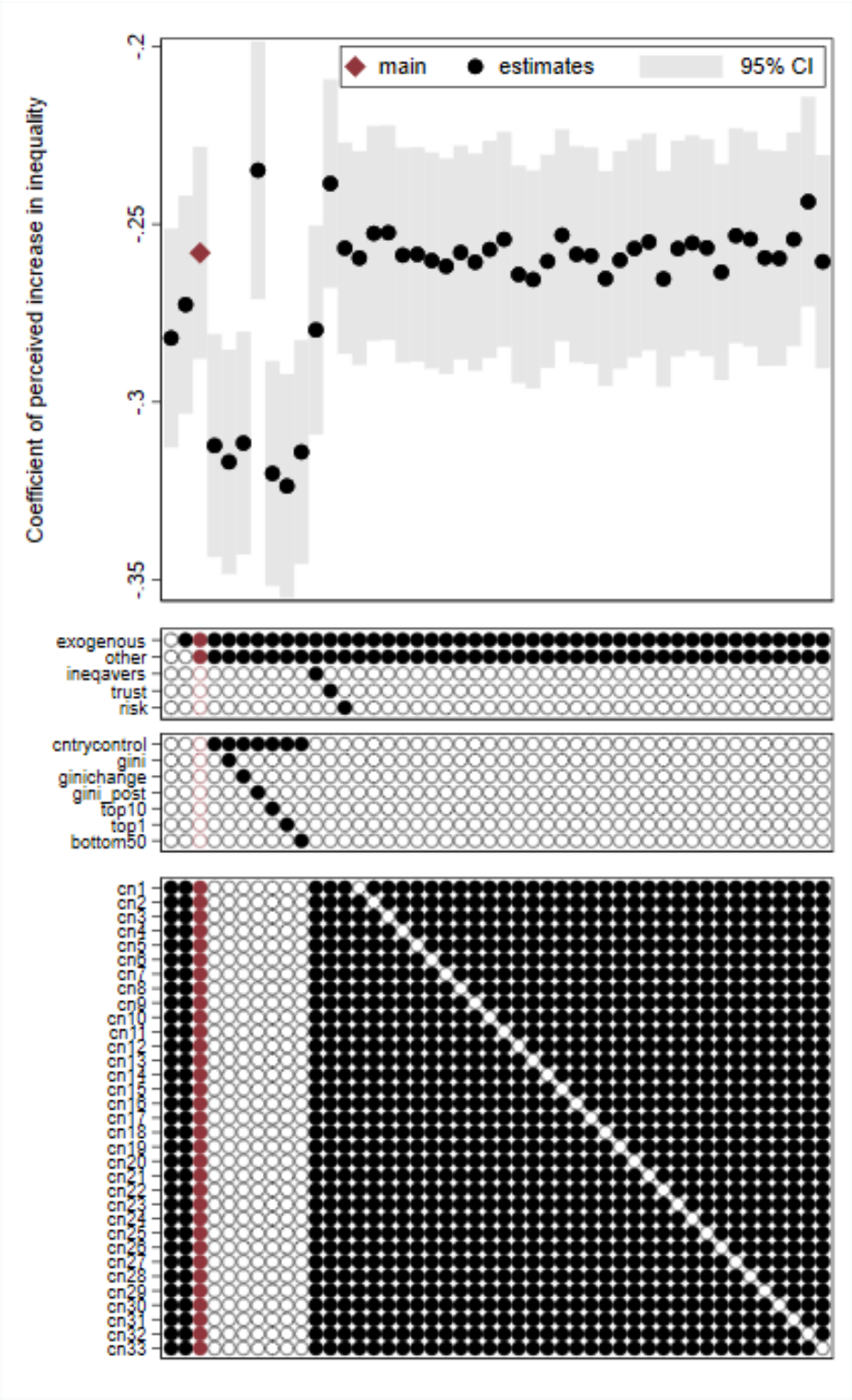
additional controls that are of particular interest to us given their potential role in explaining the inequality-SWB relationship: inequality aversion, trust, and risk preference. Next, we show the results from a specification where we use our set of country-level controls (rule of law, political stability, corruption, and GDP per capita) instead of country fixed effects. We include different measures of actual inequality one by one: Gini coefficient in levels, change in the Gini coefficient in the previous 4 years, Gini post taxes, and shares held by the top 1%, top 10%, and bottom 50% of the population. Finally, we replicate our main specification by removing one country at a time.

Figure 1 details that the coefficient estimates for perceiving an increase in inequality are always negative and statistically significant. The large majority of the coefficients are within the range of -0.23 and -0.29, which is similar to what we find in Model 6 of Table 2. As expected, the largest deviations from the main results are when we exclude the individual-level controls and when we replace the country fixed effects with country-level controls (including different measures of actual inequality). Likely, this latter set of controls does not fully capture all the country characteristics that are associated with both inequality perception and life satisfaction, biasing the coefficient of interest.

The results for the estimations that include inequality aversion, trust, and risk aversion are also in line with the main specification. When we include inequality aversion, the coefficient estimate of perceiving an increase in inequality does not significantly change. This result contradicts one of the findings in Schneider (2012), where inequality perception is significantly associated with life satisfaction after controlling for inequality preferences. In our sample, not only do we find inequality perception to matter for life satisfaction regardless of the inclusion inequality aversion, but also this association does not change when we enter inequality aversion. Similarly, the relationship between inequality perception and life satisfaction is robust to the inclusion of measures of trust and risk aversion. Overall, the specification curve analysis suggests that our

results are consistent across specifications. The main findings do not depend on the choice of the model and the inclusion or exclusion of specific variables or countries.

Figure 1 – Specification Curve Analysis



8.4 Heterogeneity

Finally, we investigate whether our results are consistent among subgroups of our sample. In particular, we examine potential heterogeneities based on income group, biological sex, and macro-region. Table 6 replicates the main specification from column 6 of Table 2 for each subsample.

In the first three columns of Table 6, we split the sample according to whether the respondent belongs to the bottom, middle, and top tertile of the income distribution within their country. In columns 4 and 5, we distinguish between females and males. Finally, in the last three columns, we investigate the relationship between inequality perception and life satisfaction across three geographic regions: the former Soviet Union, Balkan countries, and countries belonging to the EU.[25] We find that the coefficient estimate on inequality perceptions does not vary significantly across subgroups.[26] Regardless of the subsample, perceiving an increase in inequality is always negatively associated with life satisfaction.

The consistently negative association across income groups is an interesting finding. Both Schneider (2012) and Schalembier (2019) find the relationship between perceived inequality and life satisfaction to depend on income. Schneider (2012) only reports a significant association when inequality perception is interacted with income, while the rich are driving the negative results in Schalembier (2019). Conversely, Table 6 suggests that perceiving an increase in inequality is equally negatively associated across income groups. This finding provides indirect evidence that

[25] The three regions are not alternative to each other, some countries belong to more than one. Post-Soviet countries = Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine, Uzbekistan; Balkan countries = Albania, Bosnia and Herzegovina, Bulgaria, Croatia, North Macedonia, Kosovo, Montenegro, Romania, Serbia, and Slovenia; EU countries = Czech Republic, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, and Slovak Republic (Bulgaria, Croatia, Romania, and Slovenia are excluded from the EU sample to avoid overlaps with the Balkan coutries).

[26] We test for the significance in the differences of the coefficient estimates across income groups using Paternoster et al., (1998). We cannot reject the hypothesis of equal coefficient estimates in any case.

the externalities channel may be at play, and that inequality erodes the quality of the social fabric more generally, which leads to tangible declines in life satisfaction. [27]

Similarly, we find no statistically significant difference in the coefficient estimate of perceiving an increase in inequality between males and females and across subsamples of countries belonging to the Balkans, the EU, and the former Soviet Union. This latter result is in line with Grosfeld and Senik (2010) in showing that positive attitudes towards inequality, as a consequence of the end of the socialist regimes, faded over the years. In our sample, we find no significant differences in the association between perceived inequality and life satisfaction when we compare former Soviet countries and EU countries.

Table 6: The association between perceived inequality and life satisfaction, heterogeneity analysis

	Respondent Income			Sex		Country-subsample		
	(1) 1st tertile	(2) 2nd tertile	(3) 3rd tertile	(4) Female	(5) Male	(6) Post Soviet	(7) Balkan	(8) EU
Perceived increase	-0.245***	-0.242***	-0.230***	-0.248***	-0.270***	-0.248***	-0.221***	-0.247***
	(0.026)	(0.024)	(0.023)	(0.018)	(0.019)	(0.027)	(0.028)	(0.020)
Adj. R^2	0.164	0.141	0.136	0.172	0.178	0.216	0.138	0.204
N	11,309	11,506	11,571	23,694	18,922	12,657	12,591	13,282

Notes: The results are OLS estimates. The dependent variable is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). Standard errors (in parenthesis) are clustered at the primary sampling unit level. All specifications include country fixed effects. Individual-level controls: male, age, age^2, height, Christian, longitude, latitude, income, marital status, household size, education, unemployment, urban. Post-Soviet countries = Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine, Uzbekistan; Balkan countries = Albania, Bosnia and Herzegovina, Bulgaria, Croatia, North Macedonia, Kosovo, Montenegro, Romania, Serbia, and Slovenia; EU countries = Czech Republic, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, and Slovak Republic (Bulgaria, Croatia, Romania, and Slovenia are excluded from the EU sample to avoid overlaps with the Balkan countries).
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[27] In separate regressions, which are available upon request, we also interact our measure of inequality perception with the income groups and find no changes in our results.

9 Discussion and conclusion

This paper studies the relationship between inequality perceptions and subjective well-being. We find that the perception of inequality matters for individuals' life satisfaction regardless of what actual inequality is. By relying on individual-level measures from the Life in Transition Survey, we estimate that those who perceive an increase in inequality are less satisfied with their lives compared to those who do not perceive an increase.

The extant literature demonstrates that individuals form their own beliefs about the prevailing levels of inequality in their country, and perceptions may not always align with objective measures (e.g., Gimpelson & Treisman, 2018). People's perceptions can be shaped by many factors, including personal experiences, media influence, and the social environment. Subjective beliefs, whether accurate or not, play a crucial role in driving individual behaviors (e.g., Kahneman, 2011; Rigotti et al., 2008; Stevenson & Duch, 2013; Weber et al., 2022). Therefore, recent literature (e.g., Bussolo et al., 2021; Choi, 2021; Niehues, 2014) has started to rely on measures of inequality perception in addition, or as an alternative, to standard measures of inequality like the Gini coefficient.

We add to this literature by testing the hypothesis that perceived inequality is associated with life satisfaction regardless of actual inequality. In our sample of mostly transition economies, we find very little empirical evidence of an impact of actual inequality (Gini coefficient) on life satisfaction, while perceived inequality is highly correlated with it. More specifically, relative to those who perceive no change in the gap between the rich and the poor in their country in the previous 4 years, individuals perceiving an increase are 8% less satisfied with their lives. This effect size is considerable, as it is more than twice the negative impact on life satisfaction of experiencing unemployment. Additionally, those who think inequality has decreased are 4% more satisfied. These results hold regardless of the inclusion of a measure of actual inequality at the country level, providing evidence of the role of inequality perceptions as a determinant of life satisfaction above and beyond actual inequality.

In addition, we find support for the hypothesis that the association between perceived inequality and life satisfaction depends on perceptions of upward mobility and fairness of the economic system. Perceiving an increase in inequality is associated with a slightly smaller reduction in life satisfaction for those who believe their country is fair (or, to a lesser extent, mobile). However, the moderating effect of fairness and mobility is not large enough to fully offset the negative association between a perceived increase in inequality and life satisfaction. We also find no changes in our results when a measure of inequality aversion is included in the analysis, which is in contrast with some of the findings in the previous literature. These results, overall, support the idea that perceived inequality is *per se* a relevant determinant of life satisfaction.

We perform a battery of sensitivity checks to address, in particular, the risk of endogeneity due to reverse causality, selection on unobservables, and common method variance: IV estimations, entropy balancing, an Oster check, inclusion of additional relevant controls, and specification curve analyses. Our main results hold across all these checks. We also test for the heterogeneities among subpopulations and demonstrate that our findings are consistent across income groups, biological sex, and country regions.

Our results support the hypothesis that individual-level perceived inequality matters for SWB. This confirms that a comprehensive analysis of this relationship needs to take place at the individual level to avoid a loss of variation due to the aggregation at the country level and the subjectivity of the choice of a measure of actual inequality. An analysis at the individual level, based on individual beliefs and perceptions, is crucial to properly capture the mechanisms suggested in the literature to explain the link between inequality and SWB, such as social comparisons and self-interest. Future work on inequality and life satisfaction should focus on measures of perception to explicitly estimate these channels.

Moreover, our findings reinforce the importance of perceptions as relevant factors in economic research, as they can be key determinants of relevant societal outcomes. The fact that individual beliefs and perceptions, in our context perceived inequality (rather than or in addition

to actual inequality), affect SWB is of great interest to policymakers. In a time of polarization, populism, and a decrease in social cohesion, policies should account for the role of perceptions and beliefs as relevant indicators of the state of the society. Future work should also take a step back and investigate the determinants of inequality perceptions, e.g., media, social environment, and political agenda, to provide a better understanding of how perceptions form and provide insights for adequate policies.

Our paper has several limitations, which open up fruitful avenues for future research and data collection efforts. One important limitation of this study is the lack of a longitudinal dimension in our analysis. To the best of our knowledge, no survey provides information on both life satisfaction and inequality perception for the same individuals repeatedly over time. A better understanding of a possible causal effect of inequality perception on life satisfaction will require panel data to better address the endogeneity risk. In addition, our analyses are based on 33 countries only, limiting the geographic generalizability of the research. Finally, our paper focused on economic inequality, while there are other types of inequalities, including inequality of opportunities, which deserve scholarly attention in future work.

The fact that perceived, rather than actual, inequality can affect life satisfaction highlights the necessity for policies that consider public perceptions as reliable indicators of societal well-being. In an era where misinformation can easily distort public perception, understanding the genesis of these beliefs becomes as crucial as addressing the inequalities themselves.

Data Sources

European Bank for Reconstruction and Development, World Bank. Life in Transition Survey 2016 (LITS III), Retrieved from: https://www.ebrd.com/what-we-do/economic-researchand-data/data/lits.html

Coppedge M, Gerring J, Knutsen CH, Lindberg SI, Teorell J, Alizada N et al (2021). V-Dem Dataset v11. 1. Varieties of Democracy (V-Dem) Project (2021). Retrieved from https://doi.org/10.23696/vdemds21

Pemstein, D. (2022). "The V-Dem Measurement Model: Latent Variable Analysis for Cross-National and Cross-Temporal Expert-Coded Data". V-Dem Working Paper No. 21. 7th Edition. University of Gothenburg: Varieties of Democracy Institute.

World Inequality Database. (2023). Global Income Inequality Data [Data set]. Retrieved from https://wid.world/data/

References

Alesina, A., & Angeletos, G.-M. (2005). Fairness and Redistribution. *American Economic Review*, *95*(4), 960–980. https://doi.org/10.1257/0002828054825655

Alesina, A., Di Tella, R., & MacCulloch, R. (2004). Inequality and happiness: Are Europeans and Americans different? *Journal of Public Economics*, *88*(9–10), 2009–2042. https://doi.org/10.1016/j.jpubeco.2003.07.006

Alesina, A., & Giuliano, P. (2011). Preferences for Redistribution. In *Handbook of Social Economics* (Vol. 1, pp. 93–131). Elsevier. https://doi.org/10.1016/B978-0-444-53187-2.00004-8

Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.

Banerjee, A. V., & Duflo, E. (2003). Inequality and Growth: What Can the Data Say? *Journal of Economic Growth*, *8*, 267–299.

Benabou, R., & Ok, E. A. (2001). Social mobility and the demand for redistribution: The POUM hypothesis. *The Quarterly Journal of Economics*, *116*(2), 447–487.

Bjørnskov, C., Dreher, A., Fischer, J. A. V., & Schnellenbach, J. (2009). On the relation between income inequality and happiness: Do fairness perceptions matter? *CEGE Discussions Paper*, *91*.

Bjørnskov, C., Dreher, A., Fischer, J. A. V., Schnellenbach, J., & Gehring, K. (2013). Inequality and happiness: When perceived social mobility and economic reality do not match. *Journal of Economic Behavior & Organization*, *91*, 75–92. https://doi.org/10.1016/j.jebo.2013.03.017

Blendon, R. J., Benson, J. M., Brodie, M., Morin, R., Altman, D. E., Gitterman, D., Brossard, M., & James, M. (1997). Bridging the Gap Between the Public's and Economists' Views of the Economy. *Journal of Economic Perspectives*, *11*(3), 105–118. https://doi.org/10.1257/jep.11.3.105

Bond, T. N., & Lang, K. (2019). The Sad Truth about Happiness Scales. *Journal of Political Economy*, *127*(4), 1629–1640.

Bussolo, M., Ferrer-i-Carbonell, A., Giolbas, A., & Torre, I. (2021). I Perceive Therefore I Demand: The Formation of Inequality Perceptions and Demand for Redistribution. *Review of Income and Wealth*, *67*(4), 835–871. https://doi.org/10.1111/roiw.12497

Choi, G. (2021). Individuals' socioeconomic position, inequality perceptions, and redistributive preferences in OECD countries. *The Journal of Economic Inequality*, *19*(2), 239–264. https://doi.org/10.1007/s10888-020-09471-6

Clark, A. E., & D'Ambrosio, C. (2015). Attitudes to Income Inequality. In *Handbook of Income Distribution* (Vol. 2, pp. 1147–1208). Elsevier. https://doi.org/10.1016/B978-0-444-59428-0.00014-X

Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative Income, Happiness, and Utility: An Explanation for the Easterlin Paradox and Other Puzzles. *Journal of Economic Literature*, *46*(1), 95–144. https://doi.org/10.1257/jel.46.1.95

Cojocaru, A. (2014). Prospects of upward mobility and preferences for redistribution: Evidence from the Life in Transition Survey. *European Journal of Political Economy*, *34*, 300–314.

Colantone, I., & Stanig, P. (2019). The Surge of Economic Nationalism in Western Europe. *Journal of Economic Perspectives*, *33*(4), 128–151. https://doi.org/10.1257/jep.33.4.128

Cruces, G., Perez-Truglia, R., & Tetaz, M. (2013). Biased perceptions of income distribution and preferences for redistribution: Evidence from a survey experiment. *Journal of Public Economics*, *98*, 100–112. https://doi.org/10.1016/j.jpubeco.2012.10.009

Dabla-Norris, M. E., Kochhar, M. K., Suphaphiphat, M. N., Ricka, M. F., & Tsounta, M. E. (2015). *Causes and consequences of income inequality: A global perspective*. International Monetary Fund.

De Neve, J., Atia, E., Tay, L., & Xuereb, C. (2013). The objective benefits of subjective well-being. *World Happiness Report*.

Di Tella, R., & MacCulloch, R. (2006). Some uses of happiness data in economics. *Journal of Economic Perspectives*, *20*(1), 25–46.

Easterlin, R. A., & O'Connor, K. J. (2022). The Easterlin Paradox. In K. F. Zimmermann (Ed.), *Handbook of Labor, Human Resources and Population Economics* (pp. 1–25). Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_184-2

Engelhardt, C., & Wagener, A. (2014). Biased Perceptions of Income Inequality and Redistribution. *CESifo Working Paper Series*, *4838*.

Evans, G., & Andersen, R. (2006). The Political Conditioning of Economic Perceptions. *The Journal of Politics*, *68*(1), 194–207. https://doi.org/10.1111/j.1468-2508.2006.00380.x

Faggian, A., Michelangeli, A., & Tkach, K. (2023). Income inequality in Europe: Reality, perceptions, and hopes. *Research in Globalization*, *6*, 100118. https://doi.org/10.1016/j.resglo.2023.100118

Ferrer-i-Carbonell, A., & Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness. *The Economic Journal*, *114*(497), 641–659.

Ferrer-i-Carbonell, A., & Ramos, X. (2021). Inequality and Happiness. In K. F. Zimmermann (Ed.), *Handbook of Labor, Human Resources and Population Economics* (pp. 1–17). Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_185-1

Fleurbaey, M., & Blanchet, D. (2013). Beyond GDP: Measuring welfare and assessing sustainability. *Oxford University Press*.

Gallego, A. (2016). Inequality and the erosion of trust among the poor: Experimental evidence. *Socio-Economic Review*, mww010. https://doi.org/10.1093/ser/mww010

Gimpelson, V., & Treisman, D. (2018). Misperceiving inequality. *Economics & Politics*, *30*(1), 27–54. https://doi.org/10.1111/ecpo.12103

Graham, C. (2011). Adaptation amidst Prosperity and Adversity: Insights from Happiness Studies from around the World. *The World Bank Research Observer*, *26*(1), 105–137. https://doi.org/10.1093/wbro/lkq004

Grosfeld, I., & Senik, C. (2010). The emerging aversion to inequality: *Evidence from subjective data* [1]. *Economics of Transition*, *18*(1), 1–26. https://doi.org/10.1111/j.1468-0351.2009.00376.x

Hainmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis*, *20*(1), 25–46.

Hainmueller, J., & Xu, Y. (2013). ebalance: A Stata Package for Entropy Balancing. *Journal of Statistical Software*, *54*(7).

Hauser, O. P., & Norton, M. I. (2017). (Mis)perceptions of inequality. *Current Opinion in Psychology*, *18*, 21–25. https://doi.org/10.1016/j.copsyc.2017.07.024

Jaimovich, N., & Siu, H. E. (2019). *How automation and other forms of IT affect the middle class: Assessing the estimates*.

Janssen, O. (2004). How fairness perceptions make innovative behavior more or less stressful. *Journal of Organizational Behavior*, *25*(2), 201–215. https://doi.org/10.1002/job.238

Kahneman, D. (2011). *Thinking, fast and slow*. macmillan.

Kaiser, C., & Vendrik, M. (2019). How threatening are transformations of reported happiness to subjective wellbeing research? *Center for Open Science*.

Knell, M., & Stix, H. (2020). Perceptions of inequality. *European Journal of Political Economy*, *65*, 101927. https://doi.org/10.1016/j.ejpoleco.2020.101927

Kuznets, S. (2022). *The American Economic Review*.

Liberini, F., Redoano, M., & Proto, E. (2017). Happy voters. *Journal of Public Economics*, *146*, 41–57. https://doi.org/10.1016/j.jpubeco.2016.11.013

Ludwig, J., Duncan, G. J., Gennetian, L. A., Katz, L. F., Kessler, R. C., Kling, J. R., & Sanbonmatsu, L. (2012). Neighborhood Effects on the Long-Term Well-Being of Low-Income Adults. *Science*, *337*(6101), 1505–1510. https://doi.org/10.1126/science.1224648

Luttmer, E. F. P. (2005). Neighbors as negatives: Relative earnings and well-being. *The Quarterly Journal of Economics*, *120*(3), 963–1002.

MacKerron, G. (2012). HAPPINESS ECONOMICS FROM 35 000 FEET. *Journal of Economic Surveys*, *26*(4), 705–735. https://doi.org/10.1111/j.1467-6419.2010.00672.x

Marcus, J. (2013). The effect of unemployment on the mental health of spouses – Evidence from plant closures in Germany. *Journal of Health Economics*, *32*(3), 546–558. https://doi.org/10.1016/j.jhealeco.2013.02.004

Meltzer, A. H., & Richard, S. F. (1981). A Rational Theory of the Size of Government. *Journal of Political Economy*, *89*(5), 914–927. https://doi.org/10.1086/261013

Moll, B., Rachel, L., & Restrepo, P. (2022). Uneven Growth: Automation's Impact on Income and Wealth Inequality. *Econometrica*, *90*(6), 2645–2683. https://doi.org/10.3982/ECTA19417

Morawetz, D., Atia, E., Bin-Nun, G., Felous, L., Gariplerden, Y., Harris, E., Soustiel, S., Tombros, G., & Zarfaty, Y. (1977). Income Distribution and Self-Rated Happiness: Some Empirical Evidence. *The Economic Journal*, *87*(347), 511. https://doi.org/10.2307/2231556

Neves, P. C., & Silva, S. M. T. (2014). Inequality and Growth: Uncovering the Main Conclusions from the Empirics. *The Journal of Development Studies*, *50*(1), 1–21. https://doi.org/10.1080/00220388.2013.841885

Ngamaba, K. H., Panagioti, M., & Armitage, C. J. (2018). Income inequality and subjective well-being: A systematic review and meta-analysis. *Quality of Life Research*, *27*(3), 577–596. https://doi.org/10.1007/s11136-017-1719-x

Niehues, J. (2014). Subjective Perceptions of Inequality and Redistributive Preferences: An International Comparison. *Cologne Institute for Economic Research. IW-TRENDS Discussion Paper*, *2*(1).

Nikolova, M. (2018). Happiness: Using subjective well-being metrics to gauge development. In *Routledge handbook of development ethics* (pp. 84–92). Routledge.

Nikolova, M. (2019). Switching to self-employment can be good for your health. *Journal of Business Venturing*, *34*(4), 664–691. https://doi.org/10.1016/j.jbusvent.2018.09.001

Nikolova, M., & Graham, C. (2022). The Economics of Happiness. In K. F. Zimmermann (Ed.), *Handbook of Labor, Human Resources and Population Economics* (pp. 1–33). Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_177-2

Oishi, S., Kesebir, S., & Diener, E. (2011). Income Inequality and Happiness. *Psychological Science*, *22*(9), 1095–1100. https://doi.org/10.1177/0956797611417262

Oishi, S., Kushlev, K., & Schimmack, U. (2018). Progressive taxation, income inequality, and happiness. *American Psychologist*, *73*(2), 157–168. https://doi.org/10.1037/amp0000166

Organisation for Economic Co-operation and Development. (2011). *How's Life? Measuring Well-Being*. OECD.

Oster, E. (2016). *PSACALC: Stata module to calculate treatment effects and relative degree of selection under proportional selection of observables and unobservables*.

Oster, E. (2019). Unobservable Selection and Coefficient Stability: Theory and Evidence. *Journal of Business & Economic Statistics*, *37*(2), 187–204. https://doi.org/10.1080/07350015.2016.1227711

Oswald, A. J., Proto, E., & Sgroi, D. (2015). Happiness and Productivity. *Journal of Labor Economics*, *33*(4), 789–822.

Otrachshenko, V., Nikolova, M., & Popova, O. (2023). Double-edged sword: Persistent effects of Communist regime affiliations on well-being and preferences. *Journal of Population Economics*, *36*(3), 1139–1185. https://doi.org/10.1007/s00148-022-00930-0

Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology*, *36*(4), 859–866.

Pickett, K., & Wilkinson, R. (2010). *The spirit level: Why equality is better for everyone*. Penguin UK.

Prati, A. (2023). The Well-Being Cost of Inflation Inequalities. *Review of Income and Wealth*, roiw.12631. https://doi.org/10.1111/roiw.12631

Ranaldi, M., & Milanović, B. (2022). Capitalist systems and income inequality. *Journal of Comparative Economics*, *50*(1), 20–32. https://doi.org/10.1016/j.jce.2021.07.005

Rigotti, L., Shannon, C., & Strzalecki, T. (2008). Subjective Beliefs and ex ante Trade. *Econometrica*, *76*(5), 1167–1190. https://doi.org/10.3982/ECTA7660

Schalembier, B. (2019). An Evaluation of Common Explanations for the Impact of Income Inequality on Life Satisfaction. *Journal of Happiness Studies*, *20*(3), 777–794. https://doi.org/10.1007/s10902-018-9970-6

Schneider, S. M. (2012). Income Inequality and its Consequences for Life Satisfaction: What Role do Social Cognitions Play? *Social Indicators Research*, *106*(3), 419–438. https://doi.org/10.1007/s11205-011-9816-7

Senik, C. (2021). Wage Satisfaction and Reference Wages. In K. F. Zimmermann (Ed.), *Handbook of Labor, Human Resources and Population Economics* (pp. 1–13). Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_180-2

Simonsohn, U., Simmons, J. P., & Nelson, L. D. (2020). Specification curve analysis. *Nature Human Behaviour*, *4*(11), 1208–1214.

Stevenson, R. T., & Duch, R. (2013). The meaning and use of subjective perceptions in studies of economic voting. *Electoral Studies*, *32*(2), 305–320. https://doi.org/10.1016/j.electstud.2013.02.002

Stone, A. A., & Mackie, C. E. (2013). *Subjective well-being: Measuring happiness, suffering, and other dimensions of experience*. National Academies Press.

Suppa, N. (2021). Unemployment and Subjective Well-Being. In K. F. Zimmermann (Ed.), *Handbook of Labor, Human Resources and Population Economics* (pp. 1–32). Springer International Publishing. https://doi.org/10.1007/978-3-319-57365-6_196-1

Trump, K. (2023). Income inequality is unrelated to perceived inequality and support for redistribution. *Social Science Quarterly*, *104*(2), 180–188. https://doi.org/10.1111/ssqu.13269

Ward, G. (2019). Happiness and voting behaviour. In *World Happiness Report 2019* (pp. 46–65).

Weber, M., D'Acunto, F., Gorodnichenko, Y., & Coibion, O. (2022). The Subjective Inflation Expectations of Households and Firms: Measurement, Determinants, and Implications. *Journal of Economic Perspectives*, *36*(3), 157–184. https://doi.org/10.1257/jep.36.3.157

Appendix

Table A1: Variable definitions

VARIABLE	DEFINITION	SOURCE
Dependent variable		
Life satisfaction	"All things considered, I am satisfied with my life now", 1 = strongly disagree, 5 = strongly agree	LiTS
Perceived inequality		
Inequality perception	Opinion about the change in the gap between the rich and the poor in the country in the previous 4 years, 1 = stayed the same, 2 = became larger, 3 = became smaller, 4 = don't know / refusal	LiTS
Perceived increase	Dummy for perceiving an increase in the gap between the rich and the poor in the country in the previous 4 years	LiTS
Actual inequality		
Gini	Pre-tax Gini coefficient of national income, 2014	WID
Gini post	Post-tax Gini coefficient of national income, 2014	WID
Top 1	Share of national income held by the richest 1% of the country's population	WID
Top 10	Share of national income held by the richest 10% of the country's population	WID
Bottom 50	Share of national income held by the poorest half of the country's population	WID
Inequality change	1 = Gini remained the same in the period 2011-2014 (change smaller than +/-0.01), 2 = Gini increased more than 0.01, 3 = Gini decreased more than 0.01	WID
Individual level controls		
Age	Age in years	LiTS
Male	Biological sex of the respondent, 1 = Male, 0 = Female	LiTS
Height	Tertile of the country's height distribution to which the respondent belongs	LiTS

Christian	Religion, 1 = Christian, 0 = any other religion or no religion	LiTS
Income	Tertile of the country's income distribution to which the household of the respondent belongs. Based on the household's net monthly income divided by the square root of the household size	LiTS
Marital status	1 = the respondent is currently married, 0 = the respondent is single/widowed/divorced/separated	LiTS
Household size	Number of members in the household	LiTS
Tertiary education	1 = the respondent has tertiary education, 0 = no tertiary education	LiTS
Employment status	1 = working in the previous 12 months, 2 = not working in the previous 12 months, 3 = missing	LiTS
Urban area	1 = the respondent lives in an urban area, 0 = a rural area	LiTS
Longitude	Longitude of the respondent's PSU	LiTS
Latitude	Latitude of the respondent's PSU	LiTS

Additional individual-level controls

Fairness (hard work)	1 = effort and hard work considered the most important factor to succeed, 0 = intelligence and skills, political connections, breaking the law, other	LiTS
Fairness (laziness)	1 = laziness and lack of willpower considered the main reason why there are people in need, 0 = bad luck, injustice, inevitable, other	LiTS
Mobility	Comparison between current and future (in 4 years) self-assessed position in the income distribution (1-10 ladder) relative to the country average. 1 = below country average now and in 4 years, 2 = below now and above in 4 years, 3 = above now and below in 4 years, 5 = above country average now and in 4 years, 5 = missing.	LiTS
Inequality aversion	The gap between the rich and the poor in the country should be reduced, 1 = strongly disagree, 5= strongly agree	LiTS
Risk aversion	Willingness to the risk, 1 = not willingness to the risks at all, 10 = very much willing to take risks	LiTS
Trust	Trust in people, 1 = complete distrust, 5 = complete trust	LiTS
Preferences for market economy	Preference regarding the economic system, 1 = a planned economy can be preferable to a market economy, 2 = it does not make a difference, 3 = market economy is the best economic system	LiTS

Preferences for democracy	Preference regarding the political system, 1 = an authoritarian system can be preferable to a market economy, 2 = it does not make a difference, 3 = democracy is the best political system	LiTS
Mother education	1 = the mother of the respondent has a tertiary education, 0 = no tertiary education	LiTS
Father education	1 = the father of the respondent has a tertiary education, 0 = no tertiary education	LiTS
Mother occupation	Sector of employment of the respondent's mother, 1 = Agriculture, Forestry, and Fishing, 2 = Mining, 3 = Construction, 4 = Manufacturing, 5 = Transportation and Public Utilities, 6 = Wholesale Trade, 7 = Retail Trade, 8 = Finance, Insurance, and Real Estate, 9 = Services, 10 = Public Administration, 11 = Non-classifiable Establishments, 12 = Never worked	LiTS
Father occupation	Sector of employment of the respondent's father 1 = Agriculture, Forestry, and Fishing, 2 = Mining, 3 = Construction, 4 = Manufacturing, 5 = Transportation and Public Utilities, 6 = Wholesale Trade, 7 = Retail Trade, 8 = Finance, Insurance, and Real Estate, 9 = Services, 10 = Public Administration, 11 = Non-classifiable Establishments, 12 = Never worked	LiTS
Number of books	Number of books in the childhood home, 1 = 0-10, 2 = 11-25, 3 = 26-100, 4 = 101-200, 5 =200+	LiTS
Health	Assessment of current health, 1 = very bad, 5 = very good	LiTS
Job satisfaction	"All things considered, I am satisfied with my job as a whole", 1 = strongly disagree, 5= strongly agree	LiTS
Financial satisfaction	Satisfaction with financial situation, 1 = strongly disagree, 5= strongly agree	LiTS

Additional country-level controls

GDP per capita	Natural log of GDP per capita	V-Dem
Rule of law	Combined index of transparency, independence, predictability, impartiality, and equal enforcement of laws in the country (0-1)	V-Dem
Political stability	Combined index of perceptions over the stability of the government (-2.02 - 1.04)	V-Dem
Corruption	Combined index of perceptions over the corruption in the public sector, 0 = highly corrupt, 100 = highly clean	V-Dem

Country dummies	Dummy variables for 33 countries: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Rep., Estonia, FYR Macedonia, Georgia, Germany, Greece, Hungary, Italy, Kazakhstan, Kosovo, Kyrgyz Rep., Latvia, Lithuania, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Rep., Slovenia, Tajikistan, Turkey, and Ukraine

Table A2: Determinants of perceived inequality

How do you think the gap between the rich and the poor changed? It became	Larger	Smaller	DK/refusal
Male	0.036	0.021	-0.081
	(0.030)	(0.059)	(0.062)
Age	0.028***	0.010	-0.023**
	(0.005)	(0.009)	(0.008)
Age^2	-0.022***	-0.009	0.029***
	(0.005)	(0.010)	(0.008)
Height: 2nd tertile	-0.062	0.138*	-0.059
	(0.034)	(0.067)	(0.069)
Height: 3rd tertile	-0.040	0.209**	0.100
	(0.042)	(0.078)	(0.082)
Christian	0.122*	-0.261**	-0.058
	(0.051)	(0.088)	(0.087)
Longitude	0.006	-0.010	0.003
	(0.005)	(0.016)	(0.010)
Latitude	-0.002	-0.010	0.002
	(0.016)	(0.032)	(0.023)
Income: 2nd tertile	-0.078*	-0.014	-0.101
	(0.039)	(0.079)	(0.078)
Income: 3rd tertile	-0.167***	0.036	-0.116
	(0.047)	(0.087)	(0.088)
Married	-0.076*	-0.013	-0.115
	(0.033)	(0.065)	(0.060)
Household size	0.030*	-0.017	-0.056*

	(0.012)	(0.020)	(0.025)
Tertiary education	0.019	-0.093	0.034
	(0.036)	(0.069)	(0.062)
Unemployed	0.070	0.102	0.066
	(0.039)	(0.078)	(0.072)
Urban area	0.129**	0.025	-0.045
	(0.049)	(0.083)	(0.087)
Economic system: same	-0.039	-0.146	0.382***
	(0.045)	(0.088)	(0.086)
Economic system: market	-0.245***	-0.266***	0.104
	(0.043)	(0.080)	(0.087)
Political system: same	-0.009	-0.036	0.230*
	(0.051)	(0.102)	(0.106)
Political system: democracy	-0.018	-0.279**	0.146
	(0.046)	(0.095)	(0.096)
Trust	-0.149***	0.071*	0.015
	(0.018)	(0.034)	(0.031)

N = 42,616. Pseudo R^2 = 0.083. The baseline is the perception that the gap between the rich and the poor remained the same. Country fixed effects are not reported.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Commentary related to the results of Table A2

Table A2 reports multinomial logistic estimates of the probability of giving a certain answer to the question “How do you think the gap between the rich and the poor changed in the last 4 years?” (it stayed the same, it became larger, it became smaller, I don’t know/refuse), where “stayed the same” is used as the baseline. All regressions include country dummies (not reported), and standard errors are clustered at the primary sampling unit level. Compared to the baseline, the people who perceive an increase in inequality are more likely to be older, Christian, living in a larger household and urban area, and they are less likely to be rich, believe in a market economy, and trust others. The individuals who perceive a decrease in inequality share more characteristics with the baseline, i.e., fewer variables are significant. However, they are more likely to be men

and less likely to be Christian and believe in a market economy and democracy. Finally, the people who replied "I don't know" or refused to answer the question differ from the baseline people in many aspects. They are more likely to be younger, indifferent to both the types of political and economic systems, and favor democracy. They are also less likely to be rich, married, and live in a large household. We conclude that these answers are associated with different sets of individuals and should, consequently, be kept separate from the rest of the analysis.

Table A3: Summary statistics, individual-level variables

	Mean	SD	Min	Max
Life satisfaction	3.21	1.11	1	5
Inequality perception				
Perceived same	0.23	0.42	0	1
Perceived increase	0.66	0.47	0	1
Perceived decrease	0.05	0.22	0	1
DK/refusal	0.06	0.23	0	1
Male	0.44	0.50	0	1
Age	48.26	17.33	18	95
Height				
Height: 1st tertile	0.34	0.47	0	1
Height: 2nd tertile	0.29	0.45	0	1
Height: 3rd tertile	0.28	0.45	0	1
Height: missing	0.09	0.28	0	1
Christian	0.65	0.48	0	1
Longitude	32.07	21.91	6	135
Latitude	45.82	5.80	14	67
Income				
Income: 1st tertile	0.27	0.44	0	1
Income: 2nd tertile	0.27	0.44	0	1
Income: 3rd tertile	0.27	0.44	0	1
Income: missing	0.19	0.39	0	1
Married	0.59	0.49	0	1
Household size	2.76	1.56	1	10
Tertiary education	0.25	0.44	0	1
Employment status				
Employed	0.51	0.50	0	1
Unemployed	0.29	0.45	0	1
Employment missing	0.20	0.40	0	1
Urban area	0.59	0.49	0	1

N=42,616

Table A4: Additional summary statistics, individual-level variables

	Mean	SD	Min	Max
Mobility	0.34	0.47	0.00	1.00
Mobility: poor-poor				
Mobility: poor-rich	0.07	0.25	0.00	1.00
Mobility: rich-poor	0.10	0.31	0.00	1.00
Mobility: rich-rich	0.37	0.48	0.00	1.00
Mobility: missing	0.12	0.33	0.00	1.00
Fairness				
Main reason for success: hard work	0.40	0.49	0.00	1.00
Main reason for poverty: laziness	0.22	0.42	0.00	1.00
Inequality aversion	4.01	1.01	1.00	5.00
Risk aversion	4.69	2.65	1.00	10.00
Trust	2.82	1.06	1.00	5.00
Economic system				
Economic system: planned	0.25	0.43	0.00	1.00
Economic system: same	0.28	0.45	0.00	1.00
Economic system: market	0.38	0.48	0.00	1.00
Economic system: missing	0.10	0.30	0.00	1.00
Political system				
Political system: authoritarian	0.19	0.39	0.00	1.00
Political system: same	0.22	0.42	0.00	1.00
Political system: democracy	0.52	0.50	0.00	1.00
Political system: missing	0.07	0.25	0.00	1.00
Father tertiary education	0.12	0.32	0.00	1.00
Mother tertiary education	0.09	0.29	0.00	1.00
Mother occupation				
Mother agriculture	0.30	0.46	0.00	1.00
Mother mining	0.01	0.08	0.00	1.00
Mother construction	0.02	0.13	0.00	1.00
Mother manufacturing	0.10	0.30	0.00	1.00
Mother transportation	0.02	0.13	0.00	1.00
Mother wholesale trade	0.02	0.13	0.00	1.00
Mother retail trade	0.06	0.24	0.00	1.00
Mother finance	0.02	0.14	0.00	1.00
Mother services	0.12	0.33	0.00	1.00
Mother PA	0.06	0.25	0.00	1.00
Mother nonclassifiable	0.05	0.22	0.00	1.00
Mother never worked	0.20	0.40	0.00	1.00
Mother missing	0.02	0.13	0.00	1.00
Father occupation				
Father agriculture	0.35	0.48	0.00	1.00
Father mining	0.03	0.17	0.00	1.00
Father construction	0.12	0.32	0.00	1.00
Father manufacturing	0.13	0.33	0.00	1.00
Father transportation	0.07	0.25	0.00	1.00
Father wholesale trade	0.02	0.12	0.00	1.00
Father retail trade	0.03	0.17	0.00	1.00
Father finance	0.02	0.12	0.00	1.00

Father services	0.09	0.29	0.00	1.00
Father PA	0.06	0.24	0.00	1.00
Father nonclassifiable	0.05	0.21	0.00	1.00
Father never worked	0.03	0.16	0.00	1.00
Father missing	0.02	0.14	0.00	1.00
Books				
Books 0-10	0.27	0.45	0.00	1.00
Books 11-25	0.27	0.45	0.00	1.00
Books 26-100	0.28	0.45	0.00	1.00
Books 101-200	0.10	0.30	0.00	1.00
Books 201+	0.07	0.26	0.00	1.00
Health satisfaction	3.54	0.93	1.00	5.00
Job satisfaction	3.26	1.12	1.00	5.00
Financial satisfaction	2.81	1.17	1.00	5.00

N=42,616

Table A5: Summary statistics, country-level control variables

	Mean	SD	Min	Max
Gini	0.49	0.05	0.39	0.59
Inequality change				
Gini same	0.48	0.50	0.00	1.00
Gini increase	0.31	0.46	0.00	1.00
Gini decrease	0.21	0.41	0.00	1.00
Rule of law	0.62	0.29	0.03	1.00
Political stability	0.13	0.70	-2.02	1.04
Corruption	44.12	13.06	23.00	79.00
GDP per capita	18.30	9.17	3.28	42.59

The data source for the inequality measures is the World Inequality Database (WID). The other variables come from the Varieties of Democracy (V-Dem) Project. All variables in levels refer to the year 2014, the measures of change in inequality refer to the absolute change between 2011 and 2014. The countries are: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, FYR Macedonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyz Rep., Latvia, Lithuania, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Rep., Slovenia, Tajikistan, Turkey, and Ukraine.

Table A6: Full econometric output related to Table 2

	(1) Life Satisfaction	(2) Life Satisfaction	(3) Life Satisfaction	(4) Life Satisfaction	(5) Life Satisfaction	(6) Life Satisfaction
Gini	-0.474		-0.752**			
	(0.290)		(0.282)			
Gini increase				0.059*		
				(0.026)		
Gini				0.060		

decrease						
				(0.032)		
Perceived increase		-0.323***	-0.327***	-0.322***	-0.261***	-0.258***
		(0.017)	(0.017)	(0.017)	(0.016)	(0.015)
Perceived decrease		0.234***	0.236***	0.238***	0.133***	
		(0.033)	(0.033)	(0.033)	(0.029)	
DK/refusal		-0.127***	-0.126***	-0.127***	-0.126***	
		(0.033)	(0.033)	(0.033)	(0.029)	
Male	-0.051***	-0.049***	-0.048***	-0.050***	-0.082***	-0.081***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.013)
Age	-0.019***	-0.017***	-0.017***	-0.017***	-0.031***	-0.031***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age^2	0.014***	0.013***	0.013***	0.013***	0.032***	0.031***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Height: 2nd tertile	0.067***	0.060***	0.061***	0.061***	0.036*	0.037**
	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)	(0.014)
Height: 3rd tertile	0.120***	0.112***	0.111***	0.112***	0.058***	0.059***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.017)	(0.017)
Height: missing	-0.040	-0.057	-0.054	-0.053	-0.062*	-0.067*
	(0.034)	(0.034)	(0.034)	(0.034)	(0.030)	(0.030)
Christian	-0.238***	-0.203***	-0.201***	-0.209***	0.022	0.020
	(0.023)	(0.022)	(0.023)	(0.023)	(0.022)	(0.022)
Longitude	0.004***	0.004***	0.005***	0.005***	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Latitude	0.008***	0.007***	0.007***	0.007***	-0.004	-0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.006)
Rule of law	-0.281***	-0.228**	-0.216**	-0.227**		
	(0.082)	(0.080)	(0.080)	(0.081)		
Political stability	0.155***	0.161***	0.143***	0.149***		
	(0.027)	(0.025)	(0.026)	(0.026)		

Corruption	0.008***	0.006***	0.008***	0.006***		
	(0.002)	(0.002)	(0.002)	(0.002)		
GDP pc	0.010***	0.013***	0.012***	0.013***		
	(0.002)	(0.002)	(0.002)	(0.002)		
Income: 2nd tertile					0.268***	0.268***
					(0.016)	(0.016)
Income: 3rd tertile					0.515***	0.516***
					(0.019)	(0.019)
Income: missing					0.307***	0.302***
					(0.022)	(0.022)
Married					0.166***	0.167***
					(0.013)	(0.013)
Household size					0.012*	0.012*
					(0.005)	(0.005)
Tertiary education					0.172***	0.172***
					(0.014)	(0.014)
Unemployed					-0.114***	-0.114***
					(0.016)	(0.016)
Unemp. missing					-0.071***	-0.070***
					(0.018)	(0.019)
Urban					-0.050*	-0.049*
					(0.020)	(0.020)
Constant	3.228***	3.170***	3.460***	3.108***	3.815***	3.818***
	(0.145)	(0.105)	(0.141)	(0.106)	(0.256)	(0.256)
N	42,616	42,616	42,616	42,616	42,616	42,616
Adj. R^2	0.051	0.074	0.074	0.074	0.175	0.173
Country FEs	no	no	no	no	yes	yes

Notes: Results are OLS estimates. The dependent variable is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). Standard errors (in parenthesis) are clustered at the primary sampling unit level.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A7: Instrumental variables regressions

	(1) first stage	(2) second stage	(3) first stage	(4) second stage	(5) first stage	(6) second stage	(7) first stage	(8) second stage
Instrument	0.146**		0.208***		0.330***		0.476***	
	(0.050)		(0.041)		(0.046)		(0.055)	
Perceived inequality increase		-2.854*		-1.582**		-1.490***		-1.270***
		(1.166)		(0.491)		(0.336)		(0.271)
N	2,7518	27,518	39,234	39,234	45,743	45,743	47,511	47,511
1st-stage F		8.610		25.830		51.063		74.724
Instrument (i.e., cohort) construction		Country, 5 years between years of birth, biological sex, religion		Country ,5 years between years of birth biological sex		Country 10 years between years of birth biological sex, religion		Country , 10 years between years of birth

Notes: The results are 2SLS estimates, first and second stages. The dependent variable in the first stage is the perceived increase in inequality. The dependent variable in the second stage is life satisfaction measured on a 1-5 scale (sample average 3.21, sd 1.11). The instrument is the share of individuals in the cohort that perceived an increase in inequality (excluding the individual of interest). Cohort type describes the criteria used to create the cohorts. Standard errors (in parenthesis) are clustered at the primary sampling unit level. Strictly exogenous individual-level controls: male, age, age^2, height, Christian, longitude, latitude. Additional individual-level controls: income, marital status, household size, education, unemployment, and urban.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$