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ORIGINAL ARTICLE

Fairness Perceptions of Wealth Inequality in Europe

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ABSTRACT

Wealth inequality exceeds income inequality in all European countries, raising the question of whether people perceive such disparities as fair. This paper examines fairness perceptions of wealth distribution in 29 European countries by combining the European Social Survey (ESS) with data from the World Inequality Database (WID) and Eurostat. We estimate ordered logistic mixed-effects models to identify macro and micro variables that are linked to fairness assessments of wealth disparities. At the macro level, wealth inequality is perceived as more unfair where wealth concentration is higher, which contrasts with previous findings for income inequality. At the micro level, individuals who endorse principles of equality, equity, and need tend to oppose large wealth disparities. Additionally, individuals in higher social classes are more likely to perceive wealth inequality as unfair, supporting the status-legitimacy hypothesis.

JEL Classification: D31, D63

1 | Introduction

Social inequalities have been on the rise all over Europe in recent decades following a period of rather moderate levels in the mid-20th century (Piketty 2014; Milanović 2016). This begs the question whether societies perceive current levels of inequality as fair and acceptable or as unjust. Understanding people's views on the different forms of inequalities has thus become a well-established research field in the social sciences and numerous studies have analyzed assessments of fairness and social justice (Moya and Adriaans 2024; Roex et al. 2019; Schröder 2016; Gijsberts 2002; Kluegel and Smith 1981). So far, research has predominantly focused on income inequality due to the lack of reliable information on wealth in many countries. While the realms of income and wealth are often supposed to be closely related, wealth inequality exceeds income inequality by far in most countries, as Figure 1 shows.

The substantial differences between the distribution of income and wealth arise due to numerous reasons on the individual and societal level: First, on the individual level, saving rates increase with income, with households at the top of distribution being able to accumulate wealth and households at the bottom exhibiting a marginal propensity to consume of nearly one (Jappelli and Pistaferri 2014). Moreover, the rate of return on wealth positively correlates with the amount of wealth owned and thus amplifies wealth inequality (Fagereng et al. 2020). Besides income, a major source of wealth are unevenly distributed wealth transfers such as inheritances and gifts, which account for 50% to 60% of aggregate wealth in Europe (Alvaredo et al. 2017). Second, on the societal level, country-specific institutions, such as tax and transfer systems or collective bargaining regimes, are key for the differences between income and wealth. Distribution and redistribution often focus on the 'world of income': collective bargaining and active labour market policies are to balance the distribution of gross income, and taxation, social transfers, and the provision of social services aim at redistributing income and attenuating income inequalities. Universal welfare states do barely, however, prevent wealth inequality to increase as there are hardly any wealth taxes in these countries (OECD 2018). Welfare state

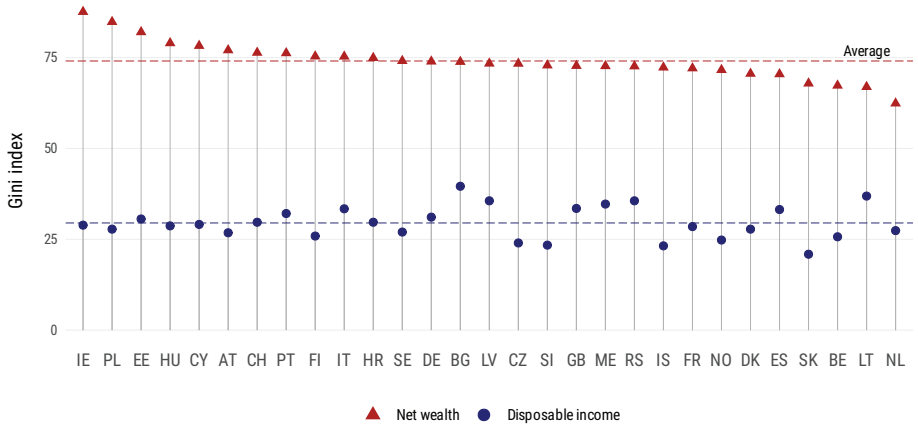

FIGURE 1 | Inequality of disposable household income and net wealth. *Note:* This figure shows the Gini index for net wealth taken from the World Inequality Database (triangles) and the Gini index for disposable income taken from the Eurostat database (circles) for the year 2018. Horizontal lines mark the respective average values across all 29 European countries in the sample.

benefits further reduce the need for precautionary private wealth accumulation. For instance, public pension systems diminish the need to build up wealth for old-age provision, and the provision of social housing to the lower and middle classes leaves them with lower housing wealth (Fessler and Schürz 2023). Advanced welfare states thus focus on the (re)distribution of income, but less so on the (re)distribution of wealth.

From a bird's eye perspective, wealth inequality thus is more than just a mirror of income inequality. However, it is yet unclear whether sentiments in the population towards wealth inequality diverge from assessments of income inequality, and whether the underlying factors associated with these assessments differ. Research shows that people struggle to clearly distinguish between income and wealth. A Dutch survey experiment suggests that people are unaware that wealth is much more unequally distributed than income and use their perceived income position to make predictions about their wealth position (Douenne et al. 2024). Nonetheless, studies find strong disapproval of high degrees of wealth inequality and favor much more equal distributions than the actual levels of wealth disparities (Norton and Ariely 2011; Savani and Rattan 2012; Rowlingson and McKay 2013).

With respect to income inequality, attitude research has shown that both individual factors, like gender, social origin, and adherence to norms, and macroeconomic factors, such as objective levels of inequality and national welfare state arrangements, tend to have an influence on people's views (Bucca 2016; Janmaat 2013; Roex et al. 2019). Following a simple model based on theoretical reflections and state-of-the art empirical literature, this paper aims to identify the macro and micro variables that are associated with perceptions of fairness in the wealth distribution. While previous literature has focused on perceptions of the level of wealth inequality (Gimpelson and Treisman 2018; Hauser and Norton 2017; Norton and Ariely 2011), in particular whether people's beliefs about the extent of disparities are accurate, we investigate whether people perceive these disparities as fair or unfair. Our findings suggest that wealth inequality is considered more unfair where wealth concentration is actually higher. Moreover, the adherence of individuals to justice principles based on norms of equality, equity, and social needs as well as belonging to a higher social class is associated with an aversion to large wealth disparities.

The contribution of this article is threefold. First, we show distinct differences not only between objective measures, but also between subjective fairness perceptions of income and wealth inequality. Second, we investigate the association between fairness perceptions and objective inequality measures by combining micro data from the European Social Survey 2018 (ESS Round 9) and macro data from the World Inequality Database (WID) for 29 European countries. Third, we test a series of individual characteristics and attitudes for their relation with sentiments towards wealth disparities. We apply ordered logistic mixed-effects models to observe the associations of macro and micro variables jointly while retaining the categorical nature of survey responses on fairness perceptions. Finally, we check the robustness of the results with alternative wealth inequality indicators from the Household Finance and Consumption Survey (HFCS), different transformations of the fairness perception variable, and a fixed-effects model to capture individual factors.

2 | How Do Individuals Form Fairness Perceptions of Wealth Inequality?

Attitudes towards income inequality belong to the standard programme of many international surveys. However, there is little evidence on sentiments towards wealth inequality, mainly focusing on the beliefs about the extent of wealth inequality (Gimpelson and Treisman 2018; Norton and Ariely 2011), preferences for wealth taxation (Stantcheva 2021; Rowlingson et al. 2021), and attitudes towards the very rich (McCall 2013; Horwitz and Dovidio 2015; Bucca 2016). These studies show that attitudes are shaped by beliefs about justice, opportunity, and merit as well as concerns about rising inequality. In contrast to the existing literature, we do not study perceptions of the level of wealth inequality but whether wealth distribution is regarded as fair.

Literature, in particular the streams focusing on income inequality, has identified numerous factors that drive people's fairness

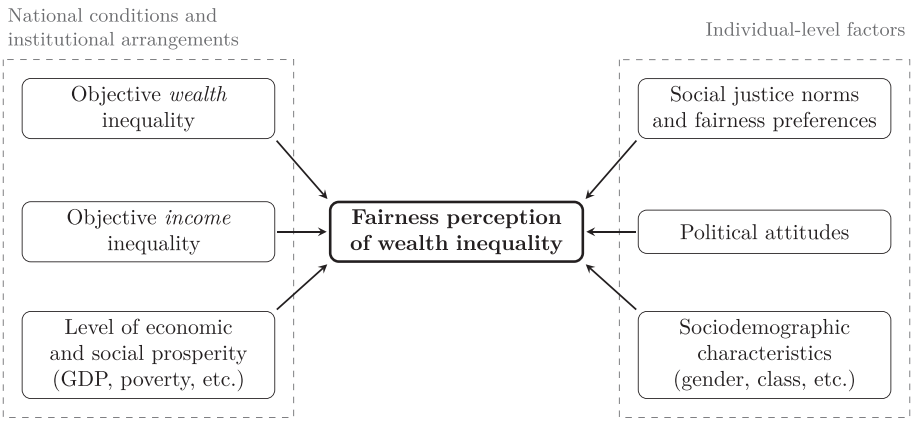

FIGURE 2 | Model of fairness perceptions of wealth inequality. *Note:* This figure shows a simple model of factors that are linked to fairness perceptions of wealth inequality, where we distinguish between national conditions and institutional arrangements, and individual-level factors.

attitudes, whereof some have a direct effect and can easily be included in an empirical study, like one's own social status (Hvidberg et al. 2023). Others, such as a cultural understanding of inequality in a society, are hard to measure and exert an indirect effect on fairness perceptions. Studies mainly conceive fairness perceptions as a product of (1) an individual's location in and perceptions of the social structure, and (2) influences which operate at the macro level of society (Kluegel and Smith 1981). Thus, we build a simple model in Figure 2 that includes both areas: its first pillar—the macro-level factors and institutions—consists of national social and economic conditions as well as institutional arrangements, since structural conditions are strongly interdependent with national welfare state regimes. The second pillar comprises individual-level factors such as socio-economic characteristics as well as political and social attitudes. In empirical studies the relative importance of these two pillars is far from clear: While some studies find a distinct effect of individual indicators and a declining role of macro-level factors (e.g., Gijsberts 2002; Verwiebe and Wegener 2000), others stress the persistent role of macro institutions (e.g., Svallfors 2004; Arts and Gelissen 2001).

2.1 | National Conditions and Institutional Arrangements

A major theoretical strand highlights the question whether attitudes towards inequalities in general reflect actual levels of inequality in a country. The assumption is that the higher the objective inequality in a country, the more people criticize it (Kluegel and Smith 1981; Hadler 2005; Gijsberts 2002). Given that people might not be fully aware of the contrast between the levels of income and wealth inequality in their country, they presumably use all available inequality information to assess the level of wealth inequality in their country. For instance, poverty rates (which are usually measured in terms of income) may also affect assessments in the realm of wealth, as the more people in a country are exposed to adverse social conditions, the more the richness of a few might become a contested issue (Bussolo et al. 2021; Hufe et al. 2022; Du and King 2022).

So far research (mainly on income inequality) has shown that there is no general inequality aversion, but rather an objection against inequalities that violate predominant allocation rules based on fairness (Trump 2020). Individuals might thus accept or object high levels of inequality based on their assessment whether the distribution meets their demand for fairness. Some papers observe an 'inequality paradox', finding that citizens in more unequal societies are even less concerned about inequality due to the popular belief that disparities are meritocratically deserved and based on performance (Mijs 2021; Schröder 2016). Other studies suggest that actual inequality has hardly any effect on the assessment of disparities in income and wealth (Bucca 2016; Keller et al. 2010; Lübker 2004). When interpreting these findings, it has to be noted that individuals on average misperceive—typically underestimate—current levels of inequality (Trump 2023; Gimpelson and Treisman 2018; Hauser and Norton 2017) or do not observe the entire distribution (Knell and Stix 2020). Thus, the evidence on the relation between fairness perceptions and objective measures of inequality is mixed, and the question remains whether this nexus even exists for the fairness assessment of wealth inequality and in which direction it is heading.

Moreover, popular beliefs and preferences of fairness cannot be considered separately from the underlying cultural understanding of inequality, and the 'moral economy of welfare states' plays an important role (Taylor-Gooby et al. 2019). Against this background, inequality is seen as a threat for society if it endangers the social bond. Welfare state arrangements are far from normatively neutral, as they transmit a specific mindset including explicit and implicit valuations about social justice to their citizens (Sachweh 2012). For our study, this means that welfare states with varying degrees of stratification and decommodification might not only shape the distribution of wealth but also affect attitudes towards wealth inequalities. The literature states that different welfare state regimes have different cultural understandings of how much inequality is acceptable (Esping-Andersen 1990; Heuer et al. 2018). People from Nordic welfare states usually prefer less (income) inequality than people from liberal and conservative welfare states (Schröder 2016; Svallfors 1997). Yet, it is unclear whether these patterns also hold for the fairness assessment of wealth inequalities (Beckert 2024). The linkage between welfare state arrangements and wealth inequalities is complex, as the significance of private wealth is associated with the degree of decommodification of a welfare regime. For instance, universal

provision of public welfare, health care, old-age benefits, and social housing reduce the necessity for private wealth accumulation. This is one major reason why countries with higher welfare state expenditures typically feature lower average net wealth but higher net wealth inequality (Fessler and Schürz 2018). As the general prosperity level is high in well-equipped welfare states, there might also be less concerns about wealth inequalities. From a theoretical perspective, welfare state arrangements may thus have quite different impacts on people's attitudes towards wealth inequalities, and it is still an open empirical question which pattern has the greatest effect.

2.2 | Individual-Level Factors

The role of socio-demographic characteristics for inequality perceptions is well-documented. Several studies have shown a clear gender effect: women are generally more inequality-averse than men (Carlsson et al. 2005). They have a higher awareness concerning the detrimental effects of poverty and are more in favor of the welfare state and policies for redistribution (Gijsberts 2002). Thus, we expect them to be more critical toward wealth inequalities as well. As women have less wealth than men across European countries (Schneebaum et al. 2018), they might also have stronger sentiments of wealth inequality being unfair.

Empirical evidence on the role of one's social position is ambiguous. While some studies find a positive link between higher social status and perceptions of fairness, the status-legitimacy hypothesis in the system justification theory (SJT) argues that individuals from disadvantaged social classes rate social systems as more just than people in advantaged positions (Valdes et al. 2022; Caricati 2017). This hypothesis finds empirical support in the realm of income as individuals in lower socioeconomic positions are least likely to assess income differences as too large (Buchel et al. 2021). Considering that due to scarce data availability assessments of wealth distribution may be governed by information on income distribution, we expect the same pattern for the fairness assessment of wealth inequalities. Other studies show that one's exposure to adverse social conditions such as experiences with (long-term) unemployment affects assessments of inequality (Bussolo et al. 2021; Alesina and Giuliano 2011).

In the literature, one important determinant for the assessment of inequalities as (un)just is prevailing social norms and individual adherence to specific social justice principles (Cappelen et al. 2007; Hülle et al. 2018; Stantcheva 2021). Scholars distinguish four justice principles (Hülle et al. 2018; Liebig et al. 2016): the principle of equity and meritocracy, the principle of social needs and requirements, the principle of equality, and the principle of entitlement and social status via birth. This strand of literature finds that people largely favor the equity principle and the principle of social needs, are ambivalent towards the principle of equality, and tend to reject the principle of social status and entitlement. With respect to fairness perceptions, we expect people who favor social equality to take a more critical stance towards wealth inequality than people who adhere to the principle of entitlement. Concerning the principle of equity, studies have shown that wealth at the top is largely accumulated by intergenerational bequests rather than effort and own achievement (Alvaredo et al. 2017). At the same time, there are strong beliefs in the high performance of the rich (Mijs 2021; Sachweh 2012). It thus remains an open question if people who support the principle of equity tend to regard the wealth distribution as (un)fair. Besides social justice principles, assessments of other social inequalities might have an influence on people's attitudes towards wealth. In this context, fairness perceptions towards income inequality are of interest, as people struggle to distinguish between wealth and income and may transfer all information and sentiments based on income inequality to their assessment of wealth disparities.

Finally, the literature suggests that political attitudes are associated with opinions on economic inequality (Gijsberts 2002). Individuals who are satisfied with the state of democracy and trust the political system might have fewer objections against current levels of wealth inequality as they appear to be fair market outcomes. The link between trust in democracy and fairness perceptions can also unfold vice versa: Trust in political institutions erodes when existing inequalities are regarded as unfair (Bobzien 2023). As political attitudes represent a certain way of looking at social conditions, we expect similar patterns for the fairness assessment of wealth inequalities.

3 | Data and Method

The backbone of this study is the European Social Survey 2018 (ESS Round 9 Edition 3.1). The ESS is a representative biennial household survey with a focus on social and political attitudes and beliefs. The 2018 round includes a set of questions on perceptions of justice and fairness in 29 European countries. Our main variable of interest is the fairness assessment of wealth inequality which is recorded by the question '*In your opinion, are differences in wealth in [country] unfairly small, fair, or unfairly large?*'. Respondents are asked to choose on a 9-point scale from −4 (extremely unfair small differences) to +4 (extremely unfair large differences), with 0 being fair differences. While empirical studies regularly use Likert-type scales in linear regressions (e.g., Bobzien 2023; Kanitsar 2022), respondents might not perceive these scales as equidistant (Lantz 2013), and survey responses are sensitive to the measurement scale for a given question (Adriaans et al. 2022). We retain the categorical nature of this variable in our empirical approach, however, we also use a continuous and dichotomous transformation in the sensitivity analysis (see Section 5.1).

Starting at the macro level, we first include indicators of actual wealth inequality. These measures originate from the WID that combines tax data with household surveys and national accounts. Tax data comprises information from wealth taxes, estate taxes and capital income taxes that are used to recover the distribution of wealth (Garbinti et al. 2021). For countries where tax data is not available, WID relies on wealth survey data from the HFCS which is then rescaled to match the macroeconomic aggregates from national accounts (Blanchet and Martínez-Toledano 2022). In total, we obtain measures on household net wealth[1] inequality for 29 countries that include the Gini coefficient and wealth shares for the top 5% and 10% of the distribution.

As described in Section 2.1, we enrich our analysis with several macro variables taken from the Eurostat database that include

income-based variables, like GDP per capita, poverty rate, and income inequality, and expenditure on social protection as a proxy for welfare state arrangements. GDP per capita is measured in purchasing power parities (PPP) and expressed in relation to the average of the European Union (EU 27). As an indicator for poverty, we use the Europe 2020 indicator for the risk of poverty or social exclusion. This corresponds to the share of persons who are at risk of poverty (earning less than 60% of the national median equivalised disposable income) or severely materially deprived or living in households with very low work intensity. The Gini coefficient of equivalised disposable household income serves as a measure for income inequality. Expenditure on social protection as a share of GDP mainly consists of social benefits in cash or in kind and administration costs.

Following the considerations in Section 2.2, we include three blocks of micro variables from ESS to find factors that are associated with fairness perceptions of wealth inequality. First, we add socio-demographic information such as gender, age, income position, social class, and unemployment experience. For the income position, we split the household net income distribution into three parts: the bottom 3 deciles, the middle 4 deciles as reference group, and the top 3 deciles. For the measurement of social class, we follow Mijs (2021) and distinguish three broad social classes: lower or working class, lower middle class or middle class, upper middle class or upper class. Therefore, we first transform the ISCO information from the ESS data into the five-level classification proposed by Oesch (2006), and subsume classes 4 and 5 to working class, classes 2 and 3 to (lower) middle class, and class 1 to upper (middle) class. The unemployment variable records occurrences of long-term unemployment lasting longer than 12 months over the course of life. The second group of variables comprises the respondent's approval of four social justice principles—equality, equity, need, and entitlement—and the fairness perception of income disparities. The questionnaire asks whether respondents agree that a society is fair '*when income and wealth are equally distributed among all people*' (equality), '*when hardworking people earn more than others*' (equity), '*when it takes care of those who are poor and in need regardless of what they give back to society*' (need), and '*when people from families with high social status enjoy privileges in their lives*' (entitlement). The 5-level response scale for these questions ranges from 'agree strongly' to 'disagree strongly'. Unfortunately, fairness perceptions of income and wealth inequality are recorded differently in ESS. While respondents report on '*differences in wealth*', the income-related question is not about '*differences in income*' but whether the income of the top 10% is regarded as (un)fair. We include a dummy variable measuring whether individuals perceive top incomes as unfair. Finally, we add two dummy variables that measure the respondents' trust in parliament (8 or higher on a scale of 10) and satisfaction with democracy (8 or higher on a scale of 10) in their country.

Our final dataset comprises 31,435 individual observations from 29 countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Montenegro, the Netherlands, Norway, Poland, Portugal, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. The 29 countries can be assigned to different welfare state regimes. We use the typologies by Esping-Andersen (1990, 1999) and Blossfeld et al. (2008) which include the following regime types: social-democratic (DK, FI, IS, NO, SE), conservative (AT, BE, DE, FR, NL), family-oriented (CY, ES, IT, PT), liberal (IE, GB, CH) and post-socialist (BG, CZ, EE, HR, HU, LT, LV, ME, PL, RS, SI, SK). These welfare regimes differ in the degree of stratification and decommodification, which both are linked to the distribution of private household wealth (Hadjar and Kotitschke 2021). Descriptive sample statistics for all variables used in this analysis are available in Table 1.

We estimate mixed-effects (multilevel) models to account for the nested structure of the data. These models allow for the incorporation of hierarchical structures, for instance individuals and countries, with random effects that allow for country-specific intercepts and slopes in a regression. Both the mixed-effects model and its fixed-effects alternative come with advantages and drawbacks (Möhring 2012). Fixed-effects models capture all heterogeneity that arises from country-specific factors and counteract omitted variable bias. Mixed-effects models, in contrast, are prone to omitted variable bias and may suffer from a small number of observations at the macro level that reduce the degrees of freedom. Studies suggest, however, that mixed-effects models are reliable even for a small number of levels in the grouping variable (Oberpriller et al. 2022). Moreover, these models are able to *explain* the country-level variation, whereas fixed-effects models only *control* for this variation and are thus less informative. Finally, data limitations prevent us from properly running a fixed-effects model that controls for all time-invariant country-specific factors as such estimation requires a panel rather than the available cross-sectional data.

We estimate an ordered logistic mixed-effects model in the form of

$$logit\big(P\big(Y_{ij} \leq k\big)\big) = \theta_k - \beta_1 x_{ij} - \beta_2 X_j - u_i \qquad (1)$$

where Y_{ij} is the fairness perception of wealth inequality of individual i in country j with k possible ordinal categories, θ_k represents the threshold parameters for the ordinal response, x_{ij} is a set of individual variables, X_j is a vector of country-level variables, and u_j is the country-specific random effect. For the calculation of the ordered logistic model, we rescale the macro variables by subtracting the mean and dividing by the standard deviation. All calculations use a combination of population size weights and post-stratification weights provided by ESS. A replication archive including data and code files is provided in the Supporting Information.

4 | Results

4.1 | Descriptive Evidence

The cross-country perspective shows strong criticism of wealth concentration in most countries. Figure 3 displays the shares of respondents who perceive wealth differences as unfairly large, including all four response categories ranging from 'slightly unfair' to 'extremely unfair'. In 12 out of 29 countries in our sample, more than two thirds of the respondents deem wealth disparities to be unfairly large, in most other countries, the share is well above 50%. There are only four exceptions:

TABLE 1 | Descriptive statistics.

	Source	Mean	S.D.	Min.	Max.
Dependent variable					
Perception of wealth differences	ESS	1.1	2.3	−4	4
Macro variables					
Top 5% wealth share	WID	45.1	5.5	32.6	55.7
Top 10% wealth share	WID	58	5.1	46.2	67
Wealth Gini	WID	74.1	5.2	62.4	87.6
GDP per capita (PPP)	Eurostat	99.4	35.1	40	190
Social expenditure	Eurostat	23.1	5.8	14.2	33.7
Poverty rate	Eurostat	21.2	6.8	11.3	41.2
Income Gini coefficient	Eurostat	29.5	4.5	20.9	39.6
Micro variables					
Gender (female)	ESS	0.5	0.5	0	1
Age	ESS	51.9	17.3	15	90
Income: Middle 4 deciles	ESS	0.4	0.5	0	1
Income: Top 3 deciles	ESS	0.3	0.4	0	1
Social class: lower middle	ESS	0.3	0.4	0	1
Social class: upper middle	ESS	0.2	0.4	0	1
Experience with long-term unempl.	ESS	0.1	0.3	0	1
Justice principle: Equality	ESS	3.2	1.2	1	5
Justice principle: Equity	ESS	4	0.8	1	5
Justice principle: Need	ESS	3.9	0.9	1	5
Justice principle: Entitlement	ESS	2.2	1	1	5
Top income perceived unfair	ESS	0.5	0.5	0	1
Trust in parliament	ESS	0.1	0.4	0	1
Satisfied with democracy	ESS	0.2	0.4	0	1

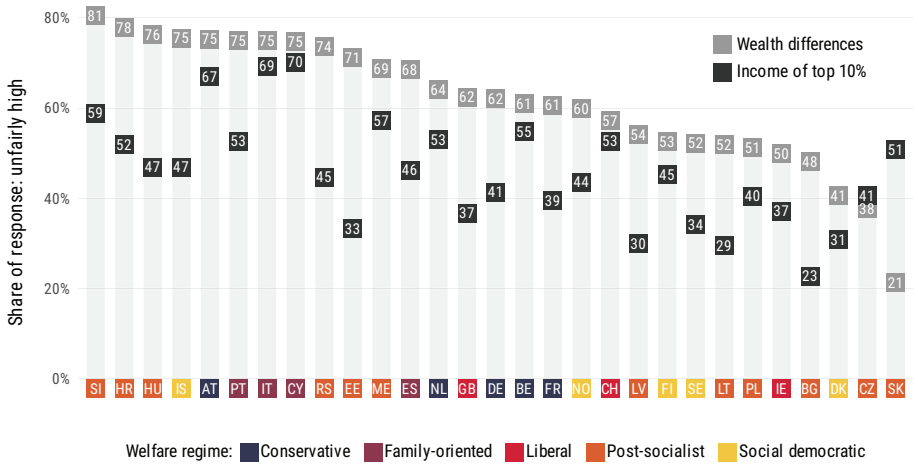

FIGURE 3 | Perceptions of unfairness of income and wealth inequalities. *Note:* This figure shows the share of respondents in the European Social Survey (ESS) 2018 who assess the income of the top 10% (black rectangles) and wealth differences (gray rectangles) as unfairly large. The response categories 'slightly unfair', 'somewhat unfair', 'very unfair', and 'extremely unfair' are pooled as 'unfair'. The countries are colored according to their affiliations to welfare regimes.

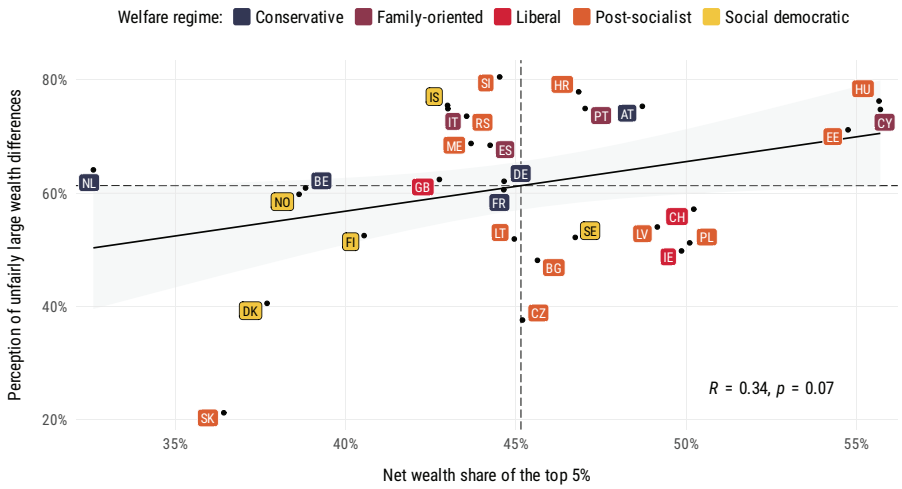

FIGURE 4 | Net wealth inequality and perceptions of unfairly large wealth differences. *Note:* This figure shows the net wealth share of the top 5% taken from the World Inequality Database (WID) and the share of respondents who assess wealth differences as unfairly large in the European Social Survey (ESS) for the year 2018. The solid line displays a linear regression and the shaded area shows the 90% confidence interval. The dashed lines represent the respective means.

Bulgaria (48%), Denmark (41%), Czech Republic (38%) and Slovakia (21%).

Wealth disparities are perceived more often as unfair than high incomes[2] in all countries except for the Czech Republic and Slovakia. These perceptions mirror the observation that wealth inequality actually exceeds income inequality in all countries (see Figure 1) and shows that people are at least to some extent able to differ between assessments of wealth and income inequalities which underlines the necessity to study both topics separately. The shares of negative perceptions of wealth and income inequality are closer in Austria, Italy, Cyprus, Belgium, Switzerland, and the Czech Republic, but wide apart in countries like Hungary, Bulgaria, Iceland, Serbia, and Estonia.

Concerning the differences between welfare state regimes, Figure 3 shows only vague patterns. Wealth disparities are seen as rather unfair in family-oriented welfare states (less so in Spain), while critique is lower in social democratic welfare states (except for Iceland). Conservative welfare states are rather found in the middle (except for Austria), liberal welfare states in the bottom half, and post-socialist countries are spread across the distribution (constituting the top 3 and bottom 2 countries). These results only partially reflect the disparities between welfare regimes, for instance that private wealth accumulation plays a more important role in (residual) family-oriented welfare states than in (universal) social democratic welfare states.

To dive deeper into the complex relation between objective wealth inequalities, institutional arrangements, and cultural understandings of inequalities, Figure 4 shows a scatter plot for objective wealth concentration in terms of the wealth share of the top 5% and the share of respondents who perceive wealth differences as unfairly large. The moderate but statistically significant positive correlation interestingly contrasts with the negative correlation found in related work for income inequality (Mijs 2021). Several countries with lower top 5% shares, like Slovakia and most Scandinavian countries, display below-average rates of unfairness perceptions in the wealth distribution. On the other hand, more people tend to assess wealth disparities as unfair in countries with the highest top 5% shares, such as Cyprus, Estonia, and Hungary. However, the picture is not entirely clear-cut as there is a notable countertrend in the middle of the graph.

With respect to welfare regimes, the pattern becomes even less clear than in Figure 3. For instance, there are considerable differences among the social democratic welfare state regimes with regard to top wealth shares, especially as Sweden exhibits higher wealth inequality than the others. While some conservative countries, like France, Germany, and Austria, are close together, others, like the Netherlands and Belgium, are far off. Liberal welfare states such as the UK and Ireland are rather found in the middle; so are family-oriented welfare states, except for Cyprus, which ranks at the top. Again, post-socialist welfare states are located across the entire distribution. This could very well be an outcome of different pathways in the transition process after 1989 and distinct institutional differences.

This mixed picture regarding the role of welfare state regimes raises the question whether the established models for welfare state regimes are the adequate unit of analysis to work out cultural understandings towards wealth inequalities or whether the 'world of wealth' needs distinct models or at least an adaption for institutional regimes. The descriptive evidence suggests, however, that country-specific factors are pivotal to study differences in attitudes towards wealth inequality. In the econometric exercise, we thus test whether the relation between objective wealth inequality and perceptions of unfairness prevails when controlling for a series of covariates.[3]

4.2 | Mixed-Effects Model

Table 2 presents the results of the ordered logistic mixed-effects model based on the categorical dependent variable, that is, the

TABLE 2 | Results for the ordered logistic mixed-effects model.

	Dependent variable: Perception of differences in wealth (9-level Likert scale)				
	(1)	(2)	(3)	(4)	(5)
Macro variables					
Top 5% wealth share	0.357**	0.281**	0.270*		
	(0.121)	(0.107)	(0.111)		
Top 10% wealth share				0.274*	
				(0.107)	
Wealth Gini					0.174
					(0.104)
GDP per capita (PPP)	−0.094	−0.068	−0.062	−0.101	−0.104
	(0.126)	(0.111)	(0.115)	(0.115)	(0.121)
Social expenditure	0.321*	0.202	0.189	0.200	0.139
	(0.132)	(0.117)	(0.121)	(0.119)	(0.120)
Poverty rate	0.486	0.403	0.339	0.309	0.253
	(0.257)	(0.231)	(0.237)	(0.231)	(0.231)
Income Gini coefficient	−0.259	−0.166	−0.115	−0.103	−0.020
	(0.222)	(0.198)	(0.204)	(0.200)	(0.196)
Micro variables					
Gender (female)	0.109***	0.082***	0.074***	0.080***	0.079***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Age	0.002**	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.051	0.099***	0.106***	0.101***	0.103***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Income: Top 3 deciles	0.006	0.145***	0.153***	0.152***	0.152***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Social class: lower middle	0.034	0.100***	0.106***	0.099***	0.101***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Social class: upper middle	0.110***	0.178***	0.191***	0.190***	0.185***
	(0.031)	(0.032)	(0.032)	(0.032)	(0.032)
Experience with long-term unempl.	0.197***	0.163***	0.159***	0.163***	0.161***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Justice principle: Equality		0.127***	0.125***	0.125***	0.125***
		(0.011)	(0.011)	(0.011)	(0.011)
Justice principle: Equity		0.061***	0.062***	0.061***	0.062***
		(0.014)	(0.014)	(0.014)	(0.014)
Justice principle: Need		0.096***	0.102***	0.104***	0.101***
		(0.014)	(0.014)	(0.014)	(0.014)
Justice principle: Entitlement		−0.244***	−0.241***	−0.241***	−0.243***
		(0.012)	(0.012)	(0.012)	(0.012)
Top income perceived unfair		0.864***	0.859***	0.862***	0.860***
		(0.024)	(0.024)	(0.024)	(0.024)
Trust in parliament			−0.022	−0.024	−0.025
			(0.035)	(0.035)	(0.035)
Satisfied with democracy			−0.122***	−0.122***	−0.118***
			(0.029)	(0.029)	(0.029)

(Continues)

TABLE 2 | (Continued)

	Dependent variable: Perception of differences in wealth (9-level Likert scale)				
	(1)	(2)	(3)	(4)	(5)
AIC	104578.053	102231.814	102214.883	102214.380	102218.011
BIC	104749.365	102443.914	102443.298	102442.796	102446.427
Log Likelihood	−52268.027	−51089.907	−51079.441	−51079.190	−51081.006
Num. obs	31,435	31,435	31,435	31,435	31,435
Num. Groups: cntry	29	29	29	29	29
Var: cntry (Intercept)	0.253	0.195	0.209	0.207	0.222

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

fairness perception of wealth differences. The table shows the logs of the odds for country-level variables in the top panel and individual-level variables in the bottom panel. The intraclass correlation coefficient (ICC) from the null model not shown in the table, measures the share of between-group variation (0.39) in total variation (3.68) and amounts to roughly 11%, thus favoring the use of a hierarchical model.

Columns (1) to (3) display the estimations for attitudes towards wealth inequalities based on the net wealth share of the top 5%, before we vary the variables for objective wealth disparities in columns (4) and (5). The measures for top wealth concentration – the net wealth share of the top 5% and the top 10% – show a positive and statistically significant correlation with perceptions of unfairness concerning wealth differences: the higher wealth concentration at the top, the stronger the perception of its unfairness. As already noted, this contrasts with the inverse relationship found for income (Mijs 2021). The Gini coefficient measuring overall wealth inequality rather than concentration does not show a statistically significant association with perceptions. However, in alternative specifications further below, we find a positive link for the Gini as well.

The top panel of Table 2 presents the results for the country-specific variables. There is almost no statistically significant association between other macro factors and fairness perceptions. Interestingly, objective income inequality is not significantly associated with the attitudes towards wealth inequality neither is the share of people at risk of poverty. The 'world of income' seems to be interpreted quite different from a 'world of wealth'. That is reflected by the result that more criticism of wealth inequality is not necessarily a feature of countries with higher income inequality. Finally, we find no significant relationship between attitudes towards wealth inequality and relative GDP per capita. In column (1), social expenditure as a percentage of GDP is positively correlated with perceptions of unfairness in the wealth distribution. The positive relationship may appear counterintuitive at first glance, given that high levels of social expenditure and universal welfare states have traditionally emerged as a means of counteracting inequalities and promoting more balanced societies. However, high social expenditure could also be indicative of stronger expectations among the population for greater social equality. Consequently, the concentration of wealth might be perceived as unacceptable due to its deviation from the prevailing social equality norms and the impropriety of substantial private wealth accumulation in well-developed welfare states.

The bottom panel of Table 2 shows the regression results at the micro level with a stepwise addition of blocks of variables. We first analyze the influence of individual characteristics such as gender, age, income group, social class, and unemployment experience. Similar to income inequalities, a distinct gender aspect is also visible for wealth inequalities: women experience the problems of wealth inequality more intensely than men. However, the odds ratio of roughly 1.08 (exp (0.080)) indicates that the probability of being in a higher response category is not much higher for women than for men. On average, the fairness perception of wealth inequality is 1.17 for women and 1.07 for men. The variables capturing the own social position, with working class as the reference category, show a positive association with perceptions of unfairness in the wealth distribution. This indicates additional support for the status-legitimacy hypothesis that is observed for income differences: the higher the social position as measured by the income decile and the social class variable, the stronger the perceptions of unfairness. The positive relation of long-term unemployment does not seem to correspond to this hypothesis; however, long periods of unemployment often come along with experience of indigence and marginalization, which might sharpen the eye for inequality and unfairness.

Columns (2) and (3) augment the specification with measures of subjective value judgments and political attitudes. We first add people's adherence to social justice principles. The impact of these principles is marked and statistically significant throughout our estimations. There is a strong and—unsurprisingly—positive correlation between people favoring equality as a norm for structuring societies and the perception of unfair wealth inequalities. The concentration of wealth stands in stark contrast to the general principle of equality. Differences in wealth levels might be ascribed to chance and luck, as private wealth is also determined by bequests and therefore by social status which does not fit in the principle of equality. In line with prior research (Mijs 2021), the role of the principle of equity is less pronounced and thus insignificant. On the one hand, large wealth differences might not be perceived as caused by differences in effort or performances, on the other hand, there are still strong beliefs in the high performance of the rich. Not surprisingly, the principle of social needs stands also in stark

TABLE 3 | Linear and binomial logistic mixed-effects model.

	OLS			Binomial logit		
	(1)	(2)	(3)	(4)	(5)	(6)
Macro variables						
Top 5% wealth share	0.067**			0.064***		
	(0.023)			(0.019)		
Top 10% wealth share		0.072**			0.067***	
		(0.024)			(0.020)	
Wealth Gini			0.047*			0.045*
			(0.024)			(0.021)
GDP per capita (PPP)	0.001	−0.001	−0.001	−0.001	−0.002	−0.003
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)
Social expenditure	0.053*	0.053*	0.040	0.044*	0.043*	0.031
	(0.024)	(0.023)	(0.024)	(0.020)	(0.020)	(0.021)
Poverty rate	0.065	0.060	0.040	0.038	0.032	0.014
	(0.039)	(0.038)	(0.039)	(0.030)	(0.030)	(0.031)
Income Gini coefficient	−0.043	−0.039	−0.005	−0.019	−0.014	0.017
	(0.050)	(0.050)	(0.050)	(0.041)	(0.040)	(0.042)
Micro variables						
Gender (female)	0.104***	0.104***	0.104***	0.091***	0.091***	0.091***
	(0.025)	(0.025)	(0.025)	(0.026)	(0.026)	(0.026)
Age	0.000	0.000	0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.174***	0.174***	0.174***	0.195***	0.195***	0.195***
	(0.031)	(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Income: Top 3 deciles	0.254***	0.254***	0.254***	0.245***	0.245***	0.245***
	(0.036)	(0.036)	(0.036)	(0.038)	(0.038)	(0.038)
Social class: lower middle	0.142***	0.142***	0.142***	0.197***	0.197***	0.197***
	(0.030)	(0.030)	(0.030)	(0.031)	(0.031)	(0.031)
Social class: upper middle	0.260***	0.260***	0.260***	0.207***	0.207***	0.207***
	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
Experience with long-term unempl.	0.130***	0.130***	0.130***	0.161***	0.161***	0.160***
	(0.036)	(0.036)	(0.036)	(0.039)	(0.039)	(0.039)
Justice principle: Equality	0.067***	0.067***	0.067***	0.107***	0.107***	0.107***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Justice principle: Equity	0.077***	0.077***	0.077***	0.053***	0.053***	0.053***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Justice principle: Need	0.086***	0.086***	0.086***	0.119***	0.119***	0.119***
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.016)
Justice principle: Entitlement	−0.218***	−0.218***	−0.218***	−0.225***	−0.225***	−0.225***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Top income perceived unfair	1.071***	1.071***	1.071***	1.227***	1.227***	1.227***
	(0.026)	(0.026)	(0.026)	(0.028)	(0.028)	(0.028)
Trust in parliament	0.012	0.012	0.012	−0.093*	−0.093*	−0.093*
	(0.041)	(0.041)	(0.041)	(0.039)	(0.039)	(0.039)
Satisfied with democracy	−0.081*	−0.081*	−0.081*	−0.152***	−0.152***	−0.152***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)

(Continues)

TABLE 3 | (Continued)

	OLS			Binomial logit		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	−4.501**	−5.489**	−5.052*	−4.748***	−5.620***	−5.248**
	(1.464)	(1.682)	(2.119)	(1.244)	(1.449)	(1.914)
AIC	163881.990	163881.602	163885.906	36519.369	36519.294	36524.227
BIC	164065.815	164065.427	164069.731	36694.839	36694.763	36699.696
Log likelihood	−81918.995	−81918.801	−81920.953	−18238.685	−18238.647	−18241.114
Num. obs.	31,435	31,435	31,435	31,435	31,435	31,435
Num. Groups: cntry	29	29	29	29	29	29
Var: cntry (Intercept)	0.270	0.266	0.309	0.203	0.202	0.241
Var: Residual	3.958	3.958	3.958			

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

contrast to wealth concentration. People who favor orientation on the social needs of the poor and other disadvantaged groups perceive wealth concentration as unfair. Respondents adhering to the principle of entitlement, however, regard wealth inequality less unfair indicated by strong negative and statistically significant estimate. The underlying social justice principles are thus of major importance for the perception of fairness in wealth distribution. The perception of top incomes being unfairly high shows a particularly strong positive correlation with unfairness perceptions in wealth disparities. This suggests that individuals tend to criticize both wealth and income distribution, and—in contrast to the findings at the macro level—might not distinguish between the 'world of wealth' and the 'world of income'. In column (3), we introduce two variables concerning people's attitudes towards the political system in their country. Satisfaction with democracy has a negative coefficient indicating that wealth disparities are rather perceived as justified when respondents have positive sentiments towards the political system in general. The coefficient for trust in parliament is negative as well but not statistically significant.

To sum up, our main findings suggest (a) that actual wealth concentration and perceptions of unfairness are positively associated; (b) that individuals from a lower social class show stronger perceptions of fairness in the wealth distribution; (c) that despite substantial differences in objective inequality measures between the 'world of income' and the 'world of wealth', individual fairness perceptions are positively correlated for both distributions; (d) that prevailing justice principles and fairness preferences are important factors for fairness perceptions.

5 | Sensitivity Analysis

5.1 | Transformation of the Dependent Variable

First, we check whether the results hold for different transformations of the dependent variable and corresponding estimation methods. ESS records fairness perceptions of wealth differences on a 9-level ordinal scale by a combination of verbal and numerical responses. Respondents are asked to choose a value between 'extremely unfair small differences (−4)' and 'extremely unfair large differences (+4)'. We thus analyze the robustness of results when the variable is interpreted as interval scale in a linear regression model denoted by

$$Y_{ij} = \beta_0 + \beta_1 x_{ij} + \beta_2 X_j + u_j + \varepsilon_{ij} \quad (2)$$

where Y is the fairness perception of wealth inequality of individual i in country j, x_{ij} is a set of individual variables, X_j is a vector of country-level variables, u_j is the country-specific error term, and ε_{ij} is the individual error term. Furthermore, we check the robustness of results when focusing on respondents who perceive wealth differences as unfairly large. We construct a dichotomous variable, with 1 for all responses rating wealth disparities unfairly large (i.e., the response categories 'slightly unfair', 'somewhat unfair', 'very unfair', and 'extremely unfair' are pooled as 'unfair'), and 0 otherwise. We apply mixed-effects binomial logistic regressions in the same specification as in Equation (2) with $y_{ij} = I\left(Y_{ij} > 0\right)$ and converge it with bound optimization by quadratic approximation (BOBYQA). The results of the linear mixed-effects model are presented in the left panel (columns 1 to 3) and the results of the binomial mixed-effects model in the right panel (columns 4 to 6) of Table 3. Full results are available in Appendix tables A1 and A2.

The interpretation of the findings is largely robust to the alternative specification of the dependent variable, even though the effect size cannot be directly compared between the models as linear regressions present marginal effects and logistic regressions present odds. First and foremost, the correlations with the top wealth shares are stable and, in contrast to the baseline results, the Gini coefficient now shows a statistically significant positive association with perceptions of unfairness. At the micro level, there are only minor changes. In the binomial logistic regression, we find a significant negative association for trust in parliament which correlates with lower perceptions of unfairness. All in all, this robustness check confirms the findings from the baseline ordered logistic specification.

5.2 | HFCS Data

As described in the data section, WID inequality indicators are based on a combination of tax data, household surveys, and

TABLE 4 | HFCS data and macro trend (2016–2018).

	HFCS data			Macro trend		
	(1)	(2)	(3)	(4)	(5)	(6)
Macro variables						
Top 5% wealth share	0.288*			−0.076		
	(0.122)			(0.054)		
Top 10% wealth share		0.269*			−0.071	
		(0.131)			(0.069)	
Wealth Gini			0.267			−0.021
			(0.148)			(0.091)
GDP per capita (PPP)	−0.127	−0.160	−0.208	0.046	0.045	0.075
	(0.127)	(0.137)	(0.153)	(0.063)	(0.067)	(0.073)
Social expenditure	0.008	−0.005	−0.062	−0.053	−0.060	−0.056
	(0.114)	(0.119)	(0.123)	(0.061)	(0.063)	(0.069)
Poverty rate	−0.161	−0.136	−0.078	0.017	0.016	0.015
	(0.430)	(0.457)	(0.488)	(0.022)	(0.022)	(0.024)
Income Gini coefficient	0.191	0.167	0.142	0.015	0.018	0.022
	(0.301)	(0.324)	(0.345)	(0.042)	(0.042)	(0.045)
Micro variables						
Gender (female)	0.100***	0.099***	0.098***	0.079***	0.077***	0.076***
	(0.026)	(0.026)	(0.026)	(0.022)	(0.022)	(0.022)
Age	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.089**	0.087**	0.092**	0.102***	0.100***	0.104***
	(0.033)	(0.032)	(0.032)	(0.028)	(0.028)	(0.028)
Income: Top 3 deciles	0.150***	0.148***	0.156***	0.147***	0.149***	0.149***
	(0.038)	(0.038)	(0.038)	(0.032)	(0.032)	(0.032)
Social class: lower middle	0.125***	0.124***	0.120***	0.101***	0.101***	0.102***
	(0.030)	(0.030)	(0.030)	(0.026)	(0.026)	(0.026)
Social class: upper middle	0.224***	0.224***	0.222***	0.186***	0.185***	0.185***
	(0.038)	(0.038)	(0.038)	(0.032)	(0.032)	(0.032)
Experience with long-term unempl.	0.152***	0.155***	0.156***	0.162***	0.161***	0.162***
	(0.036)	(0.036)	(0.036)	(0.033)	(0.033)	(0.033)
Justice principle: Equality	0.112***	0.111***	0.114***	0.125***	0.126***	0.126***
	(0.013)	(0.013)	(0.013)	(0.011)	(0.011)	(0.011)
Justice principle: Equity	0.087***	0.087***	0.087***	0.062***	0.061***	0.063***
	(0.016)	(0.016)	(0.016)	(0.014)	(0.014)	(0.014)
Justice principle: Need	0.078***	0.078***	0.076***	0.100***	0.100***	0.100***
	(0.016)	(0.016)	(0.016)	(0.014)	(0.014)	(0.014)
Justice principle: Entitlement	−0.234***	−0.233***	−0.234***	−0.244***	−0.243***	−0.244***
	(0.014)	(0.014)	(0.014)	(0.012)	(0.012)	(0.012)
Top income perceived unfair	0.845***	0.845***	0.844***	0.859***	0.859***	0.855***
	(0.027)	(0.027)	(0.027)	(0.024)	(0.024)	(0.024)
Trust in parliament	−0.004	−0.006	−0.010	−0.027	−0.028	−0.032
	(0.042)	(0.042)	(0.042)	(0.035)	(0.035)	(0.035)
Satisfied with democracy	−0.127***	−0.124***	−0.130***	−0.119***	−0.119***	−0.120***
	(0.034)	(0.034)	(0.034)	(0.029)	(0.029)	(0.029)

(Continues)

TABLE 4 | HFCS data and macro trend (2016–2018).

	HFCS data			Macro trend		
	(1)	(2)	(3)	(4)	(5)	(6)
Log likelihood	−37850.539	−37851.030	−37851.761	−51082.080	−51082.489	−51083.166
AIC	75757.078	75758.061	75759.522	102220.161	102220.978	102222.331
BIC	75977.205	75978.188	75979.649	102448.576	102449.394	102450.747
Num. obs.	19,181	19,181	19,181	25,789	25,789	25,789
Groups (cntry)	19	19	19	29	29	29
Variance: cntry: (Intercept)	0.180	0.201	0.221	0.242	0.249	0.286

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

national accounts. While the data provider is striving to ensure comparability of the information, the underlying methodology varies between countries. We thus carry out a robustness check by using the best harmonized wealth data available, which is the HFCS. As mentioned above, this survey is based on a harmonized household questionnaire for all Euro area countries, and hence our sample decreases from 29 to 19 countries (European Central Bank 2020). The wealth inequality measures are calculated with data from the 2017 wave of HFCS, which is 1 year ahead of the ESS data. A well-known shortcoming of survey data is that very rich households are absent from the sample and thus, the distributional information serves as a lower bound of actual inequality (Bach et al. 2019; Vermeulen 2016). The results for the robustness check with HFCS data in an ordered logistic mixed-effects model are presented in the left panel of Table 4 (columns 1 to 3). Full results are available in Appendix table A3.

The results with alternative wealth inequality measures from HFCS data are robust to the baseline with WID data. The top wealth shares show a statistically significant positive association with subjective unfairness perceptions of wealth inequality and the effect sizes are similar to the corresponding estimates in Table 2. It has to be noted, however, that the inequality measures in the raw HFCS data are substantially lower than in the WID data as there is almost no adjustment for the massive underreporting at the top of the wealth distribution in the HFCS survey. The HFCS sample average for the top 5% share is 37% while it is 46% with WID data for the same country sample. Like in the baseline specification, we do not find statistically significant correlations with the wealth Gini coefficient and the other macro variables in Table 4. At the micro level, the results are remarkably stable even though the sample is reduced by roughly one third in countries and observations. We conclude from the robustness check that reducing the sample to Euro area countries and using alternative measures of wealth inequality from the HFCS does not substantially alter the main results.

5.3 | Trending Macro Variables

Furthermore, a third sensitivity analysis concerns the question whether perceptions are linked to levels or changes in the macroeconomic variables. Assessments of inequality could be driven by changes in the objective measures, for instance when disparities are growing and people start worrying more. We thus calculate three-year averages (2016–2018) of the relative changes in the macro variables prior to the observation of unfairness perceptions. The results are shown in the right panel of Table 4 (columns 4 to 6). Full results are available in Appendix table A4.

The evident difference to the baseline specification is that the trends in the wealth inequality measures, while showing a negative sign, do not exhibit a statistically significant relation with unfairness perceptions. This finding suggests that it is the levels rather than the short-term trends in the wealth inequality measures that are linked to assessments of wealth disparities. However, these variables, in general, do not change strongly within such short observation periods.

5.4 | Fixed-Effects Estimation

Finally, we test the robustness of the individual-level results by including country-fixed effects in the regression. Since data availability is restricted to a cross-sectional sample rather than panel data, there is no possibility to observe relationships of changes in the variables, however, we are able to absorb country-specific differences such as cultural, institutional, or economic factors. Table 5 presents results for the different transformations of the dependent variable and the corresponding estimation methods. Again, the linear estimation shows marginal effects, while the logit specifications display odds. The main findings remain valid: women assess wealth disparities more often as unfairly high than men, higher-class individuals have stronger perceptions of unfairness in wealth inequality, perceptions of unfairness in income and wealth inequalities correlate, and social justice principles based on equality, equity, and need are associated with stronger sentiments of unfairness.

6 | Conclusion

In times of growing social inequalities, research on their fairness assessment among the population becomes a very timely research topic. The extent to which social inequalities are accepted or criticized provides insights into the degree to which a given social order is accepted or contested. Until now, the bulk of research has mainly focused on attitudes towards income inequalities. While the realms of income and wealth are often supposed to be closely related, wealth inequality exceeds income inequality by far in most countries. Thus, wealth inequality is more

TABLE 5 | Country-fixed-effects estimation for individual-level variables.

	Ordered logit	OLS	Binomial logit
Gender (female)	0.078***	0.104***	0.098***
	(0.022)	(0.025)	(0.028)
Age	0.001	0.000	−0.001
	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.101***	0.174***	0.211***
	(0.028)	(0.031)	(0.035)
Income: Top 3 deciles	0.148***	0.254***	0.269***
	(0.032)	(0.036)	(0.041)
Social class: lower middle	0.101***	0.142***	0.186***
	(0.026)	(0.030)	(0.033)
Social class: upper middle	0.186***	0.260***	0.349***
	(0.032)	(0.036)	(0.041)
Experience with long-term unempl.	0.159***	0.129***	0.099*
	(0.033)	(0.036)	(0.041)
Justice principle: Equality	0.125***	0.067***	0.104***
	(0.011)	(0.012)	(0.013)
Justice principle: Equity	0.061***	0.077***	0.062***
	(0.014)	(0.016)	(0.018)
Justice principle: Need	0.100***	0.085***	0.108***
	(0.014)	(0.015)	(0.017)
Justice principle: Entitlement	−0.243***	−0.217***	−0.251***
	(0.012)	(0.013)	(0.015)
Top income perceived unfair	0.859***	1.070***	1.218***
	(0.024)	(0.026)	(0.030)
Trust in parliament	−0.027	0.012	−0.062
	(0.035)	(0.041)	(0.045)
Satisfied with democracy	−0.118***	−0.081*	−0.091*
	(0.029)	(0.034)	(0.037)
Constant		−0.013	−0.512***
		(0.115)	(0.130)
Country FE	Yes	Yes	Yes
AIC	102135.525		27456.516
BIC	102543.410		27815.810
Log likelihood	−51017.763		−13685.258
Num. Obs.	25,789	31,435	31,435
R^2		0.106	
Adj. R^2		0.105	

*$p < 0.05$. ***$p < 0.001$.

than just a mirror of income inequality and requires stand-alone research. Literature shows that it is hard for people to distinguish between income and wealth on a personal level (Douenne et al. 2024); however, the discontent with wealth inequality is more pronounced than with income inequality. This underlines the need to analyze the fundamental factors for fairness perceptions towards wealth.

Our paper provides novel insights into the fairness sentiments towards wealth inequality and provides four major findings: First, in contrast to previous findings for income inequality (Mijs 2021), we find a positive association between objective measures of wealth inequality and perceptions of unfairness in wealth disparities. In light of this finding, we presume that the population is aware of the considerable wealth inequality and considers it to

be an unjustly high disparity. Interestingly, we do not find links between fairness perceptions of wealth inequality and objective measures for income inequality. Second, in line with the status-legitimacy hypothesis, we find that a lower social class correlates with stronger perceptions of fairness in wealth inequality. Moreover, those experiencing long-term unemployment and women are more likely to perceive wealth inequality as unfair. This indicates that socio-economic attributes and social status are associated with assessments of fairness as well, alongside with actual inequalities and personal value systems. Third, while objective inequality measures suggest that the 'world of wealth' differs from the 'world of income', people's views are ambiguous: Individuals who perceive top incomes as unfair also tend to perceive wealth differences more unfair. However, higher objective measures of income inequality do not correlate with higher unfairness perceptions of wealth inequality. Forth, the adherence to general justice principles is significantly linked to fairness perceptions of wealth inequality, even when controlling for objective inequality measures. Compliance with social justice principles such as equality or social needs boosts assessments of unfairness. Subjective perceptions of fairness are thus susceptible to being influenced not only by objective measures of inequality but also by personal value systems.

The findings in this paper are robust to alternative wealth measures from HFCS data and complementary specifications with linear and binomial transformations of the dependent variable. Additional sensitivity analysis suggests that it is the (high) levels of wealth inequality that correlate with perceptions of unfairness rather than short-term changes in inequality. This phenomenon can be attributed to the observation that inequality measures, in general, do not change significantly in the short term, while the levels of these measures are more prevalent in public discourse. The publication of new data on wealth inequality, such as WID and HFCS data, has served to draw the attention of the media and the general public to this issue in recent years.

These results have important policy implications. In light of the high degree of wealth concentration and the considerable criticism it receives from the population, it is evident that policy measures addressing wealth inequality are of paramount importance. If people identify a growing gap between the inequality they observe and the inequality they are willing to accept, this could diminish their confidence in political institutions and democratic processes (Bobzien 2023). In this regard, our study also finds a robust correlation between higher perceptions of unfairness in wealth disparities and lower satisfaction with democracy. A growing body of scholarship examines the potential for alleviating these challenges posed by inequality through the implementation of taxation and redistribution policies (e.g., Bastani and Waldenström 2020; Guvenen et al. 2023). Nevertheless, there remains no consensus within the academic literature regarding the optimal approach to address wealth concentration and the associated consequences.

For future research, it might be interesting to take a more in-depth view of the dynamics between objective wealth inequalities, subjective perceptions, and the intermediating role of the welfare state. The inconclusive outcomes for the various welfare state regimes in our study prompt the question of whether the 'world of wealth' necessitates the development of alternative models of welfare states, or at the very least, adjustments when attempting to achieve a cultural understanding of perceptions regarding wealth inequalities.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available in European Social Survey at https://www.europeansocialsurvey.org/, Eurostat at https://ec.europa.eu/eurostat, World Inequality Database at https://wid.world/, and Household Finance and Consumption Survey at https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

Endnotes

[1] The definition of private wealth closely follows the OECD guidelines, where net wealth is the monetary value of all tangible and financial assets owned by a household, less the value of all its liabilities at a particular point in time (OECD 2013). This definition excludes public pension claims as they can be neither liquidated nor transferred, which is particularly relevant for cross-country analyses of wealth inequality (Fessler and Schürz 2018).

[2] Unfortunately, the assessment of wealth and income inequality is not aligned in the ESS questionnaire, as described in section 3. The question on wealth inequality concerns wealth differences, the question on income inequality focuses on the income of the top 10%.

[3] We include country-specific variables rather than welfare state regimes in the econometric analysis as mixed effects models bear the advantage to jointly include macro and micro variables into the analysis but are not suited to analyze differences between welfare regimes with only a few countries each.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1.**

Appendix A

TABLE A1 | Linear mixed-effects model.

	Dependent variable: Perception of differences in wealth (9-level Likert scale)				
	(1)	(2)	(3)	(4)	(5)
Macro variables					
Top 5% wealth share	0.081**	0.067**	0.067**		
	(0.026)	(0.023)	(0.023)		
Top 10% wealth share				0.072**	
				(0.024)	
Wealth Gini					0.047*
					(0.024)
GDP per capita (PPP)	−0.000	0.000	0.001	−0.001	−0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Social expenditure	0.073**	0.053*	0.053*	0.053*	0.040
	(0.027)	(0.024)	(0.024)	(0.023)	(0.024)
Poverty rate	0.079	0.066	0.065	0.060	0.040
	(0.044)	(0.039)	(0.039)	(0.038)	(0.039)
Income Gini coefficient	−0.068	−0.043	−0.043	−0.039	−0.005
	(0.057)	(0.050)	(0.050)	(0.050)	(0.050)
Micro variables					
Gender (female)	0.132***	0.106***	0.104***	0.104***	0.104***
	(0.026)	(0.025)	(0.025)	(0.025)	(0.025)
Age	0.001	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.116***	0.173***	0.174***	0.174***	0.174***
	(0.032)	(0.031)	(0.031)	(0.031)	(0.031)
Income: Top 3 deciles	0.094*	0.253***	0.254***	0.254***	0.254***
	(0.037)	(0.036)	(0.036)	(0.036)	(0.036)
Social class: lower middle	0.065*	0.141***	0.142***	0.142***	0.142***
	(0.031)	(0.030)	(0.030)	(0.030)	(0.030)
Social class: upper middle	0.186***	0.257***	0.260***	0.260***	0.260***
	(0.037)	(0.036)	(0.036)	(0.036)	(0.036)
Experience with long-term unempl.	0.162***	0.131***	0.130***	0.130***	0.130***
	(0.037)	(0.036)	(0.036)	(0.036)	(0.036)
Justice principle: Equality		0.068***	0.067***	0.067***	0.067***
		(0.012)	(0.012)	(0.012)	(0.012)
Justice principle: Equity		0.077***	0.077***	0.077***	0.077***
		(0.016)	(0.016)	(0.016)	(0.016)
Justice principle: Need		0.083***	0.086***	0.086***	0.086***
		(0.015)	(0.015)	(0.015)	(0.015)
Justice principle: Entitlement		−0.218***	−0.218***	−0.218***	−0.218***
		(0.013)	(0.013)	(0.013)	(0.013)
Top income perceived unfair		1.074***	1.071***	1.071***	1.071***
		(0.026)	(0.026)	(0.026)	(0.026)
Trust in parliament			0.012	0.012	0.012
			(0.041)	(0.041)	(0.041)
Satisfied with democracy			−0.081*	−0.081*	−0.081*
			(0.034)	(0.034)	(0.034)
Constant	−4.129*	−4.478**	−4.501**	−5.489**	−5.052*
	(1.661)	(1.465)	(1.464)	(1.682)	(2.119)
AIC	166146.869	163883.990	163881.990	163881.602	163885.906
BIC	166272.205	164051.104	164065.815	164065.427	164069.731
Log Likelihood	−83058.435	−81921.995	−81918.995	−81918.801	−81920.953
Num. obs.	31,435	31,435	31,435	31,435	31,435
Num. groups: cntry	29	29	29	29	29
Var: cntry (Intercept)	0.352	0.270	0.270	0.266	0.309
Var: Residual	4.254	3.958	3.958	3.958	3.958

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

TABLE A2 | Binomial logistic mixed-effects model.

	Dependent variable: Unfair perception of wealth differences (binomial variable)				
	(1)	(2)	(3)	(4)	(5)
Macro variables					
Top 5% wealth share	0.072***	0.348**	0.064***		
	(0.022)	(0.107)	(0.019)		
Top 10% wealth share				0.067***	
				(0.020)	
Wealth Gini					0.045*
					(0.021)
GDP per capita (PPP)	−0.002	−0.061	−0.001	−0.002	−0.003
	(0.004)	(0.112)	(0.003)	(0.003)	(0.004)
Social expenditure	0.059**	0.244*	0.044*	0.043*	0.031
	(0.023)	(0.117)	(0.020)	(0.020)	(0.021)
Poverty rate	0.048	0.249	0.038	0.032	0.014
	(0.034)	(0.207)	(0.030)	(0.030)	(0.031)
Income Gini coefficient	−0.047	−0.080	−0.019	−0.014	0.017
	(0.046)	(0.186)	(0.041)	(0.040)	(0.042)
Micro variables					
Gender (female)	0.137***	0.097***	0.091***	0.091***	0.091***
	(0.024)	(0.026)	(0.026)	(0.026)	(0.026)
Age	0.001	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.126***	0.192***	0.195***	0.195***	0.195***
	(0.030)	(0.032)	(0.032)	(0.032)	(0.032)
Income: Top 3 deciles	0.036	0.235***	0.245***	0.245***	0.245***
	(0.035)	(0.038)	(0.038)	(0.038)	(0.038)
Social class: lower middle	0.102***	0.194***	0.197***	0.197***	0.197***
	(0.030)	(0.031)	(0.031)	(0.031)	(0.031)
Social class: upper middle	0.085*	0.194***	0.207***	0.207***	0.207***
	(0.034)	(0.036)	(0.036)	(0.036)	(0.036)
Experience with long-term unempl.	0.222***	0.167***	0.161***	0.161***	0.160***
	(0.037)	(0.039)	(0.039)	(0.039)	(0.039)
Justice principle: Equality		0.110***	0.107***	0.107***	0.107***
		(0.012)	(0.012)	(0.012)	(0.012)
Justice principle: Equity		0.052**	0.053***	0.053***	0.053***
		(0.016)	(0.016)	(0.016)	(0.016)
Justice principle: Need		0.113***	0.119***	0.119***	0.119***
		(0.016)	(0.016)	(0.016)	(0.016)
Justice principle: Entitlement		−0.228***	−0.225***	−0.225***	−0.225***
		(0.013)	(0.013)	(0.013)	(0.013)
Top income perceived unfair		1.232***	1.227***	1.227***	1.227***
		(0.028)	(0.028)	(0.028)	(0.028)
Trust in parliament			−0.093*	−0.093*	−0.093*
			(0.039)	(0.039)	(0.039)
Satisfied with democracy			−0.152***	−0.152***	−0.152***
			(0.034)	(0.034)	(0.034)
Constant	−3.742**	−0.757***	−4.748***	−5.620***	−5.248**
	(1.413)	(0.134)	(1.244)	(1.449)	(1.914)
AIC	39441.565	36551.830	36519.369	36519.294	36524.227
BIC	39558.545	36710.588	36694.839	36694.763	36699.696
Log Likelihood	−19706.783	−18256.915	−18238.685	−18238.647	−18241.114
Num. obs.	31,435	31,435	31,435	31,435	31,435
Num. groups: cntry	29	29	29	29	29
Var: cntry (Intercept)	0.254	0.206	0.203	0.202	0.241

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

TABLE A3 | Ordered logistic mixed-effects model with HFCS data.

	Dependent variable: Perception of differences in wealth (9-level Likert scale)				
	(1)	(2)	(3)	(4)	(5)
Macro variables					
Top 5% wealth share	0.308*	0.286*	0.288*		
	(0.145)	(0.123)	(0.122)		
Top 10% wealth share				0.269*	
				(0.131)	
Wealth Gini					0.267
					(0.148)
GDP per capita (PPP)	−0.166	−0.133	−0.127	−0.160	−0.208
	(0.151)	(0.128)	(0.127)	(0.137)	(0.153)
Social expenditure	0.107	0.007	0.008	−0.005	−0.062
	(0.136)	(0.115)	(0.114)	(0.119)	(0.123)
Poverty rate	−0.107	−0.144	−0.161	−0.136	−0.078
	(0.518)	(0.433)	(0.430)	(0.457)	(0.488)
Income Gini coefficient	0.145	0.182	0.191	0.167	0.142
	(0.362)	(0.303)	(0.301)	(0.324)	(0.345)
Micro variables					
Gender (female)	0.123***	0.105***	0.100***	0.099***	0.098***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Age	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.048	0.087**	0.089**	0.087**	0.092**
	(0.032)	(0.033)	(0.033)	(0.032)	(0.032)
Income: Top 3 deciles	0.006	0.147***	0.150***	0.148***	0.156***
	(0.037)	(0.038)	(0.038)	(0.038)	(0.038)
Social class: lower middle	0.057	0.124***	0.125***	0.124***	0.120***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Social class: upper middle	0.137***	0.218***	0.224***	0.224***	0.222***
	(0.037)	(0.038)	(0.038)	(0.038)	(0.038)
Experience with long-term unempl.	0.190***	0.154***	0.152***	0.155***	0.156***
	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
Justice principle: Equality		0.114***	0.112***	0.111***	0.114***
		(0.013)	(0.013)	(0.013)	(0.013)
Justice principle: Equity		0.087***	0.087***	0.087***	0.087***
		(0.016)	(0.016)	(0.016)	(0.016)
Justice principle: Need		0.074***	0.078***	0.078***	0.076***
		(0.016)	(0.016)	(0.016)	(0.016)
Justice principle: Entitlement		−0.235***	−0.234***	−0.233***	−0.234***
		(0.014)	(0.014)	(0.014)	(0.014)
Top income perceived unfair		0.848***	0.845***	0.845***	0.844***
		(0.027)	(0.027)	(0.027)	(0.027)
Trust in parliament			−0.004	−0.006	−0.010
			(0.042)	(0.042)	(0.042)
Satisfied with democracy			−0.127***	−0.124***	−0.130***
			(0.034)	(0.034)	(0.034)
Log Likelihood	−38673.814	−37858.375	−37850.539	−37851.030	−37851.761
AIC	77389.627	75768.749	75757.078	75758.061	75759.522
BIC	77554.722	75973.153	75977.205	75978.188	75979.649
Num. obs.	19,181	19,181	19,181	19,181	19,181
Groups (cntry)	19	19	19	19	19
Variance: cntry: (Intercept)	0.261	0.183	0.180	0.201	0.221

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

TABLE A4 | Ordered logistic mixed-effects model with macro trend.

	Dependent variable: Perception of differences in wealth (9-level Likert scale)				
	(1)	(2)	(3)	(4)	(5)
Macro variables					
Top 5% wealth share	−0.101	−0.076	−0.076		
	(0.063)	(0.055)	(0.054)		
Top 10% wealth share				−0.071	
				(0.069)	
Wealth Gini					−0.021
					(0.091)
GDP per capita (PPP)	−0.011	0.044	0.046	0.045	0.075
	(0.073)	(0.064)	(0.063)	(0.067)	(0.073)
Social expenditure	−0.070	−0.050	−0.053	−0.060	−0.056
	(0.070)	(0.062)	(0.061)	(0.063)	(0.069)
Poverty rate	0.007	0.015	0.017	0.016	0.015
	(0.026)	(0.022)	(0.022)	(0.022)	(0.024)
Income Gini coefficient	0.001	0.013	0.015	0.018	0.022
	(0.049)	(0.043)	(0.042)	(0.042)	(0.045)
Micro variables					
Gender (female)	0.109***	0.081***	0.079***	0.077***	0.076***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Age	0.002**	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Income: Middle 4 deciles	0.051	0.103***	0.102***	0.100***	0.104***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Income: Top 3 deciles	0.006	0.148***	0.147***	0.149***	0.149***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
Social class: lower middle	0.034	0.100***	0.101***	0.101***	0.102***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Social class: upper middle	0.110***	0.177***	0.186***	0.185***	0.185***
	(0.031)	(0.032)	(0.032)	(0.032)	(0.032)
Experience with long-term unempl.	0.198***	0.166***	0.162***	0.161***	0.162***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Justice principle: Equality		0.128***	0.125***	0.126***	0.126***
		(0.011)	(0.011)	(0.011)	(0.011)
Justice principle: Equity		0.062***	0.062***	0.061***	0.063***
		(0.014)	(0.014)	(0.014)	(0.014)
Justice principle: Need		0.095***	0.100***	0.100***	0.100***
		(0.014)	(0.014)	(0.014)	(0.014)
Justice principle: Entitlement		−0.245***	−0.244***	−0.243***	−0.244***
		(0.012)	(0.012)	(0.012)	(0.012)
Top income perceived unfair		0.863***	0.859***	0.859***	0.855***
		(0.024)	(0.024)	(0.024)	(0.024)
Trust in parliament			−0.027	−0.028	−0.032
			(0.035)	(0.035)	(0.035)
Satisfied with democracy			−0.119***	−0.119***	−0.120***
			(0.029)	(0.029)	(0.029)
Log Likelihood	−52271.892	−51092.990	−51082.080	−51082.489	−51083.166
AIC	104585.785	102237.981	102220.161	102220.978	102222.331
BIC	104757.096	102450.081	102448.576	102449.394	102450.747
Num. obs.	25,789	25,789	25,789	25,789	25,789
Groups (cntry)	29	29	29	29	29
Variance: cntry: (Intercept)	0.334	0.251	0.242	0.249	0.286

**$p < 0.01$. ***$p < 0.001$.