



# Income Inequality and Political Trust: Do Fairness Perceptions Matter?

Licia Bobzien<sup>1,2</sup> 

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## Abstract

Political trust—in terms of trust in political institutions—is an important precondition for the functioning and stability of democracy. One widely studied determinant of political trust is income inequality. While the empirical finding that societies with lower levels of income inequality have higher levels of trust is well established, the exact ways in which income inequality affects political trust remain unclear. Past research has shown that individuals oftentimes have biased perceptions of inequality. Considering potentially biased inequality perceptions, I argue that individuals compare their perceptions of inequality to their preference for inequality. If they identify a gap between what they perceive and what they prefer (= *fairness gap*), they consider their attitudes towards inequality unrepresented. This, in turn, reduces trust in political institutions. Using three waves of the ESS and the ISSP in a cross-country perspective, I find that (1) perceiving a larger fairness gap is associated with lower levels of political trust; (2) the fairness gap mediates the link between actual inequality and political trust; and (3) disaggregating the fairness gap measure, political trust is more strongly linked to variation in inequality perceptions than to variation in inequality preferences. This indicates that inequality perceptions are an important factor shaping trust into political institutions.

**Keywords** Political trust · Inequality · Perceptions of inequality · Fairness

## 1 Motivation

Trust between citizens and political institutions is viewed as an essential prerequisite for the functioning and stability of democracy. Political trust is associated with higher voter turnout, more spending-, immigration-, and environment-friendly policy preferences (Devine, 2022; Levi & Stoker, 2000), less successful populist parties (Stoetzer et al., 2023), higher subjective well-being (Glatz & Eder, 2020), and lower standardised infection rates during the health crisis provoked by the corona virus (Bollyky, 2022; Li et al., 2022).

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✉ Licia Bobzien  
bobzien@hertie-school.org

<sup>1</sup> Hertie School, Berlin, Berlin, Germany

<sup>2</sup> Faculty of Economics and Social Sciences, University of Potsdam, Potsdam, Germany

Correlationally, societies with lower levels of income inequality have higher levels of trust in political institutions (Algan et al., 2017; Gustavsson & Jordahl, 2008; Foster & Frieden, 2017; Wilkinson & Pickett, 2009). Acknowledging that empirical finding, it remains unclear *how* income inequality can influence individual trust in political institutions. Many studies argue that individuals evaluate inequalities and this evaluation affects individuals' trust in political institutions: If individuals evaluate inequalities as, for instance, fair, they tend to be more likely to trust political institutions (e.g. Loveless, 2013; Nannestad, 2008; Uslander, 2002). This argument implies that individuals evaluate inequality based on what they perceive. However, past research has shown that such inequality perceptions are oftentimes imprecise and biased (Engelhardt & Wagener, 2018; Norton & Ariely, 2011; Osberg & Smeeding, 2006; Bobzien, 2020; Bublitz, 2022). To understand the specific mechanisms in which fairness evaluations of economic inequality affect political trust, it is thus important to explicitly model individual inequality perceptions.

Considering potentially biased inequality perceptions this paper argues that individuals evaluate inequalities based upon their perceptions. If individuals identify a gap between the level of inequality they prefer and the level they perceive—I call this gap *fairness gap*—they feel politically dissatisfied. The observation that one's own taste for (in)equality is not implemented politically, in turn, reduces political trust. Combining the European Social Survey and the International Social Survey Programme, I show empirically that this fairness gap measure is indeed negatively associated with political trust. Using mediation analysis techniques, I further show that about mediate of the effect of actual income inequality on political trust is mediated through the fairness gap despite the overall effect of actual inequality on political trust is already small. Past research has shown that fairness evaluations as well as inequality perceptions depend not only on actual levels of inequality but also upon one's own economic position (Cansunar, 2020). Following this argument, in a final step, I descriptively show, by disaggregating the fairness gap measure, that variation in political trust across educational levels as a proxy for individuals' socio-economic positions is more strongly correlated with perceived inequality rather than preferred inequality. This suggests that individuals are more polarised in their perceptions of inequality than in their preferred levels of inequality and that this polarisation in perceptions closely links to the polarisation in political trust.

The contribution of this paper is thus threefold. Firstly, while the link between inequality perceptions and political preferences such as preferences for redistribution is widely studied (Engelhardt & Wagener, 2018; Osberg & Smeeding, 2006; Bublitz, 2022), it remains unclear how inequality perceptions influence more general feelings about societies and institutions. I apply this perspective to the broader concept of political trust by arguing that individuals evaluate inequalities based upon their perceptions and that these evaluations affect individuals' trust in political institutions. Secondly, I actively operationalise fairness perceptions as individually preferred deviations from the perceived status-quo inequality. Past research either assumed that individuals have an accurate assessment of inequalities or used attitudinal items on inequality to reveal information about inequality evaluations. Thirdly, this methodological advancement enables us to study whether inequality perceptions or inequality preferences predict trust in political institutions. These results indicate that higher inequality is not necessarily linked to lower levels of trust; it is rather important to what extent individuals consider their inequality preferences to be realised. Thus, the legitimacy of and feelings about such inequalities is important.

This paper is structured as follows. In Section 2 I review the existing literature on inequality and political trust and introduce the theoretical argument of the paper. Section 3 gives an overview of the method and the data used. In Section 4, I study the effect of the

fairness gap on political trust. To study the importance of the fairness gap as a mediator between actual inequality and political trust, I conduct a mediation analysis. Finally, I ask: what can we learn about the relevance of fairness perceptions beyond the question of whether fairness perceptions mediate the relationship between income inequality and political trust? Section 5 concludes.

## 2 Theoretical Background: How Does Inequality Affect Political Trust?

Following Citrin and Stoker (2018) and Levi and Stoker (2000), I understand political trust as a relational, domain-specific concept: 'A trusts B to do X' ((Citrin & Stoker, 2018), p.50). It is relational insofar as it focuses on the relationship between A and B. It is domain-specific insofar as it focuses on X. Here, I am interested in how individuals (A) trust political institutions of the country they live in (B) to act according to their inequality preferences (X). I follow the literature in assuming that trust in political institutions can be seen as a general proxy for support for the political system (Easton, 1965; Goubin & Hooghe, 2020; Hooghe, 2011). It is a subjective measure in the sense that it refers to individuals' feelings about the political system rather than actual actions such as voting and it is a vertical measure in the sense that it conceptualises the relationship between individuals and the state rather than the relationship between individuals and groups within a society (Chan et al., 2006). Individuals may trust different political institutions differently. Individuals may, for instance, differentiate between institutions at regional, national, or European level (e.g. Talving & Vasilopoulou, 2021; Lipps and Schraff, 2020; Biten et al., 2022). I focus on trust in national institutions as this is the most direct link between income inequality and political trust arguing that individuals hold their own national institutions accountable. Further, existing literature differentiates between political and social (generalized) trust: In contrast to political trust which focuses on trust towards political institutions or actors, social trust is defined as trust in fellow individuals. Generalized and political trust are, while conceptually distinct, empirically highly correlated (Uslaner, 2018; Newton et al., 2018). This suggests that different trust-building mechanisms are closely related. I therefore review the literature on political as well as on social trust.

I first summarize the literature studying the link between actual income inequality and political and social trust. I continue reviewing the literature focusing on perceptions of and beliefs about inequality and derive our theoretical argument by combining insights from these strands of literature.

### 2.1 Actual Inequality and Political Trust

While inequality is empirically negatively associated with political trust, there are a variety of potential theoretical mechanisms on how inequality affects individuals' trust levels. In the following, we summarize these mechanisms proposed in the literature differentiating between economic insecurity, segregation, institutional capacity, and fairness norms.

Higher levels of income inequality may be associated with higher levels of *economic insecurity* (e.g. Schwander, 2020) which, in turn, leads individuals to have less trust in political institutions. While the effects of economic insecurity on preferences for redistribution and political behavior are frequently studied (Marx, 2014; Vlandas & Halikiopoulou, 2019), the effects on more general attitudes such as trust are less well understood. Wroe (2016), studying the US context, shows that perceiving one's

own living condition as economically insecure negatively affects political trust. For the EU context, using Eurobarometer data, Van Erkel and Van Der Meer (2016) show that changes in the macro-economic performance affect political trust and that these effects are heterogeneous across educational groups and stronger for low-educated individuals. Nguyen (2017) shows that exposure to higher levels of—either potential or actively experienced—labour market insecurity is associated with lower levels of social trust. He further shows that institutions can buffer the effect of economic insecurities on trust by finding that this relationship is moderated by passive and active labor market support. This indicates that (in)security exposure and (in)security perceptions matter for individuals' trust political institutions.

A second line of argumentation suggests that rising inequality increases social distances between individuals and therefore leads to more *segregated* societies. This translates into higher levels of political trust for economically well-off individuals who benefit from inequality and lower levels of political trust for economically less well-off individuals who are disadvantaged by inequality e.g. due to higher levels of relative deprivation (Deaton, 2001; Hastings, 2019). Besides this mechanical effect (Neckerman & Torche, 2007), Uslander and Brown (2005) argue that, in the context of high inequality, people at the top and at the bottom of the income distribution will not perceive each other as facing a shared fate. Therefore, they are less likely to trust individuals who are less similar to themselves which may also affect trust in political institutions. Empirically, higher segregation due to higher inequality is associated with lower levels of trust and civic participation (Neckerman & Torche, 2007).

Others argue that perceiving low levels of *institutional capacity*, for instance in the form of corruption or procedural unfairness, as a result of evaluating inequality (You & Khagram, 2005) leads individuals to lose trust in political institutions (Torcal, 2014; Meer & Dekker, 2011; Rahn & Rudolph, 2005). Uslander (2010) argues that economic inequality provides an environment that breeds corruption which, in turn, facilitates further inequalities and reduces political trust. Hutchison and Johnson (2011) show, for the African context, that trust in government is a key element of regime legitimacy and find that higher institutional capacity is associated with higher levels of political trust: Political trust may therefore be higher in the context of politically efficient governments. Another strand of literature, which is closely related to the literature on institutional capacity, argues that *fairness* concerns and inequality aversion links actual inequality and trust (Grimes, 2006; Fehr et al., 2020; You & Khagram, 2005; Goubin & Hooghe, 2020). Zmerli and Castillo (2015), for instance, empirically show that individual perceptions of distributive fairness are closely related to political trust. Gustavsson and Jordahl (2008) find, using register-based longitudinal data from Sweden, that inequality in income matters for generalized trust; however, they also show that this effect is particularly large for individuals who are inequality-averse. This is in line with the empirical finding by Heiserman et al. (2020) who show that higher perceived inequality and lower perceived mobility increase participants' concerns about economic fairness.

A majority of the research on the determinants of political trust indicates the need to look not only at the mechanical effect of inequality on political trust by hinting to the fact that individuals' evaluations of inequality are important to understand how inequality affects political trust: Individuals *feel* whether they are in an economically insecure situation, whether they are relatively deprived, and have opinions about state capacity and fairness. Most of the suggested theoretical mechanisms thus (implicitly) assume that individuals perceive, process, and evaluate information about inequality. If individuals have biased perceptions of inequality, actual inequality per se may not directly affect individual trust

levels but such perceptions may mediate this relationship. If individuals evaluate inequalities and if these evaluations are important to individuals, actively conceptualising perceptions of and beliefs about inequality may be valuable to better understand how inequality affects political trust.

## 2.2 Considering Fairness Perceptions to Study the Determinants of Political Trust

There has been a growing awareness that individuals often have inaccurate and biased perceptions of inequality (e.g. Karadja et al., 2017; Bublitz, 2022; Niehues, 2014; Bobzien, 2020). Theoretically, such perceptions may matter in forming general attitudes such as trust in political institutions. The literature on political trust is not unaware of the potential importance of perceptions (e.g. Guinjoan & Rico, 2018). It is, however, methodologically difficult to operationalise perceptions. One approach to mitigate that problem is to use more nuanced inequality measures, such as regional inequality measures, assuming that individuals are better informed about inequalities they are directly exposed to (e.g. Kanitsar, 2022). Lipps and Schraff (2020), for instance, argue that regional inequality is a highly visible and thus a more salient form of income inequality because individuals directly experience it. They find that changes in regional income inequality have an equally strong effect on political trust as changes in national income inequality.

Studies that acknowledge the role of perceptions often approximate such perceptions by using items that operationalise attitudes, feelings, or beliefs about inequality (see (Guinjoan & Rico, 2018), for an exception). Zmerli and Castillo (2015), for instance, operationalise fairness using the question-wording 'How fair do you think the income distribution is in [country]?' with potential answer categories very fair, fair, unfair and very unfair. Lovelless (2013) finds that individuals who consider inequality to be 'too high' are significantly more likely to have lower trust and political efficacy rates. He uses the following question-wording to measure inequality perceptions 'Some people say that there is too much social inequality in our society. Others say that there is no or almost no social inequality in our society. What is your view?' with potential answer items ranging from 'too much social inequality' to 'there is no or almost no social inequality'. This reveals attitudes towards the (I argue perceived) status quo. To understand *why* individuals evaluate inequality to be 'very fair' or to 'very unfair' or *why* individuals evaluate inequality to be 'too much' or to be 'about right', it is important to consider that responses are given relative to the status quo perception: Respondents are asked to reveal their preference relative to the status quo rather than being asked about preferences for absolute levels of inequality. This results in the fact it is unknown whether variation in answering this question is based on different preferences for absolute inequality or different perceptions of the status quo (Stantcheva, 2021; Bobzien, 2020). This is especially crucial for studying the link between inequality and political trust because such inequality perceptions matter for fairness evaluations. For instance, Heiserman et al. (2020) show, utilising an online experiment executed in the US, that higher perceived inequality increases individual concerns about economic fairness. Thus, inequality perceptions and fairness attitudes are interrelated (Jasso, 1978; Pedersen & Mutz, 2019) and should therefore be studied jointly to understand the formation of general attitudes such as political trust.

In this paper, I utilize a fairness measure that allows to differentiate between perceptions of and preferences for inequality in order to understand the effects of inequality on political trust. There is a long tradition in the fairness literature in differentiating between perceptions and fairness evaluations. These studies mostly study attitudes towards wages

for different occupations by analysing survey items that ask respondents to report perceived and fair wages for different occupations (Jasso, 1978; Wegener, 1987; Ahrens, 2020). By doing so, this research is able to measure the distance between what an individual perceives and what she prefers. I apply this idea to the broader concept of inequality, in a simplified way, by introducing a measure which I call the *fairness gap*. The *fairness gap* measures the distance between individuals' inequality perception and inequality preference.

Goubin (2020) theoretically argues and empirically shows that perceived political responsiveness is strongly related to political trust. This indicates that individuals evaluate political institutions with respect to whether they consider their preferences represented.<sup>1</sup> This paper builds upon these empirical findings and argues that perceiving a fairness gap (see Sect. 3 for construction of the measure)—that is, reporting a gap between perceived and preferred inequality—affects political trust. If individuals perceive a fairness gap, they consider their inequality preferences to be unrepresented. Such feelings of underrepresentation then lower political trust, similarly to the ways in which economic insecurity reduces trust (Marx & Nguyen, 2016; Algan et al., 2017). Individuals consider their preferences to be unseen which fosters feelings of unfairness. One response to such feelings is to reduce trust in political institutions. Our first hypothesis is thus:

H1: A higher fairness gap is associated with lower political trust.

The link between actual inequality and perceived inequality is empirically complex (e.g. Windsteiger, 2022; Bavetta et al., 2020; Norton & Arieli, 2011). The ways in which individuals perceive inequality is likely to be some function of the actual levels of inequality. I therefore hypothesize that the fairness gap mediates the relationship between actual inequality and political trust:

H2: The association between actual inequality and political trust is mediated by the fairness gap.

Past research has shown that inequality perceptions, inequality preferences, and trust in political institutions are stratified along socio-economic variables such as education or income: More educated individuals perceive lower levels of inequality (e.g. Gimpelson & Treisman, 2017), prefer less redistribution and therefore more inequality (e.g. Ahrens, 2020) and show higher levels of trust in political institutions (e.g. Foster & Frieden, 2017). It could therefore be the case that more educated individuals show higher levels of political trust because they *perceive* lower levels of inequality rather than because they *prefer* different levels of inequality than less educated individuals. In this study, I am able to differentiate the relative importance of perceived inequality and preferred inequality for political trust across different socio-economic groups. I follow past research in hypothesizing that the individual socio-economic position matters for inequality attitudes and trust in political institutions. Thus, I formulate competing hypotheses to study the importance of perceived and preferred inequalities for understanding variation in political trust across educational groups as a proxy for one's own socio-economic position:

H3a: The variation in the fairness gap across socio-economic groups is associated with variation in perceived inequality rather than preferred inequality.

<sup>1</sup> Another mechanism is that individuals may justify the status quo by using psychological heuristics: For instance, individuals may believe more strongly in meritocracy in high inequality contexts (Mijs & Savage, 2020) or may overestimate mobility over time (Piketty, 1995; Alesina et al., 2018).

H3b: The variation in the fairness gap across socio-economic groups is associated with variation in preferred inequality rather than perceived inequality.

### 3 Empirical Approach

To test the proposed theoretical link between inequality and political trust empirically, I outline the empirical approach and operationalise the variables of interest in the following.

#### 3.1 Method and Data

I use two main data sources for the analysis of actual inequality and fairness perceptions as determinants of political trust: the European Social Survey (ESS, 2002, 2010, 2018) and the International Survey Programme (ISSP Research Group, 2014, 2021). While the European Social Survey allows us to operationalise political trust, it lacks items on inequality perceptions. The ISSP includes items on inequality perceptions but lacks items on political trust in the modules which include items on inequality perceptions. In order to study the effect of inequality on political trust, we use the ESS as individual level dataset and merge it with our fairness gap measure obtained from the ISSP. I merge the data on country-year level as well as on a variety of lower aggregation levels.<sup>2</sup> I aggregate on (1) country and year, (2) employment status,<sup>3</sup> country, and year, (3) education,<sup>4</sup> country, and year, (4) self-reported gender, country, and year, and (5) age,<sup>5</sup> country and year. I consider the results of this analysis as robust if they hold across different aggregation decisions. All standard errors are clustered at country-year level.

I use three waves of the ISSP, namely 1999, 2009 and 2019 and merge them to the ESS 2002,<sup>6</sup> 2010, and 2018<sup>7</sup> at the different aggregation levels. I employ listwise deletion. The following countries are included: AT, BG, CH, CZ, DE, DK, ES, FR, GB, HU, IT, LT, NO, PL, T, SE, SI, SK. Table 2 in the Appendix gives an overview of the countries and years included in the analysis. Firstly, I utilize pooled OLS regressions to estimate the effect of actual inequality and the fairness gap on political trust. Secondly, I conduct mediation analysis in order to be able to estimate the relative importance of the fairness gap for the link

<sup>2</sup> Studying the determinants of the fairness gap (see Appendix, Table 4), we see that variation in the fairness gap is linked to several socio-demographic and socio-economic variables. I use this information to aggregate and merge the data not only at country-year level but also at a lower level than country-year, namely, country-year specific employment status, country-year specific education, country-year specific age, country-year specific sex, and country-year specific gender.

<sup>3</sup> I merge the data on five employment statuses: (self-)employed, in education, retired, not in labor force, unemployed.

<sup>4</sup> I merge the data on five levels of education: lowest formal education, lower than secondary education, secondary education, higher secondary education, and tertiary education.

<sup>5</sup> I merge the data on three age groups: individuals younger than 35, between 35 and 60 and older than 60. We chose these thresholds as, in this dataset, individuals younger than 35 represent the youngest 25% while individuals older 60 represent the oldest 25%.

<sup>6</sup> I use ESS 2002 as this is the first ESS wave and temporarily closest to 1999.

<sup>7</sup> 2018 is temporarily prior to 2019. I use this prior ESS wave because the data collection of the ESS 2020 wave fell within the covid-19 pandemic. The covid-19 pandemic affected trust in political institutions (e.g. Kritzing et al., 2021) and inequality evaluations Asaria et al. (2021). Further, face-to-face fieldwork was not possible in some countries leading to a heterogeneity in data collection which may affect response behavior.

between actual inequality and political trust. Thereafter, I explore the importance of further socio-economic variables beyond actual inequality and descriptively study the ways in which the fairness gap, its components (perceived and preferred inequality), and political trust vary across educational levels as one proxy for individuals' socio-economic positions.

### 3.1.1 Variables of Interest

*Political trust.* A majority of the literature on cross-country variation of political trust uses (a subset of) the following items: *Using this card, please tell me on a score of 0–10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. (1) [...] [country]'s parliament? (2) [...] the legal system? (3) [...] politicians? (4) [...] political parties?.* I also utilize these items and build an equally weighted index ranging from 0 to 10 (Cronbach's  $\alpha = 0.89$ ) (e.g. Zmerli & Newton, 2008; Lipps and Schraff, 2020; Van Erkel & Van Der Meer, 2016).

*Actual income inequality.* I use the gini index of disposable incomes after taxes and transfers by country-year provided by the Standardized World Income Database (SWIDD) (Solt, 2019).

*Fairness gap.* I operationalise the *fairness gap* as the difference between perceived and preferred inequality. I do so using items from the ISSP—Social Inequality module (II–V) that ask individuals to reveal their perceived and preferred level of inequality using graphical visualisations. Respondents were asked to estimate how they think their society looks today: *'These five diagrams show different types of society. Please [...] look at the diagrams and decide which you think best describes <country> [...] What type of society is <country> today?'* They were further asked to reveal what structure they prefer by answering the question *'[...] What do you think <country> ought to be like?'* Following past research (Niehues, 2014; Gimpelson & Treisman, 2017; Bobzien, 2020), I calculate gini coefficients from these graphs and operationalise the *fairness gap* as the gap between the perceived gini and the preferred gini (see Gimpelson and Treisman 2017; Niehues 2014). If an individual indicates that it perceives the society in country X to be Type A in Fig. 1 (gini = 41.95) but has a preference for Type D (gini = 20.13), the fairness gap for that individual would be the difference between the gini coefficient of the perceived inequality and of the preferred inequality, namely:  $41.95 - 20.13 = 21.82$ . This takes, firstly, into account that individuals have different perceptions of inequalities and, secondly, how much these perceptions deviate from what individuals prefer.

Figure 2 shows the distribution of perceived (left) and preferred (right) types of society (reported in Fig. 1). Most individuals perceive comparatively high levels of inequality, reporting that their society looks like 'Type A' or 'Type B'. Preferred levels of inequality are more skewed around 'Type D'. I use the difference between these two variables to measure the fairness gap. It is thus an individual level measure which we collapse on different levels:

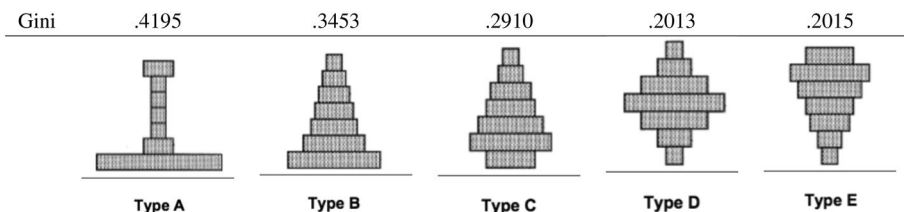
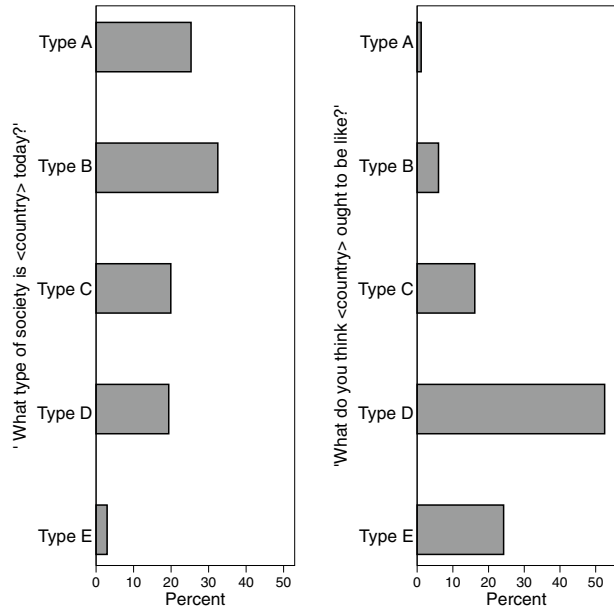


Fig. 1 Response options for preferred and perceived inequality. Source: ISSP (2009)



**Fig. 2** Histogram of perceived and preferred inequality. *Source:* ISSP 1999, 2009, 2019



(1) country-year-level, (2) employment status-country-year-level, (3) education-country-year-level, (4) self-reported gender-country-year-level, (5) age-country-year-level. I merge the ISSP data to the individual-level ESS data on these different aggregation levels.

### 3.1.2 Controls

Following past research on political trust, I control for several individual-level variables. I control for age (continuous, limited to 15 to 80), gender (female and male), education (lowest formal education, lower than secondary education, secondary education, higher than secondary education, tertiary education), employment status ((self-)employed, in education, retired, not in labor force, unemployed), and occupation using the ISCO major groups. A further important control variable is income since we know that individuals with higher incomes tend to perceive lower levels of inequality (e.g. Karadja et al., 2017; Bavetta et al., 2019) and that individuals with higher incomes tend to report higher levels of trust (e.g. Bjørnskov, 2007). I construct the income measure based on the ESS survey question for self-reported household income. The ESS, however, changed the way they measured income. In the first three ESS waves (2002–2006), there were 12 potential answer categories fixed across countries. That is, respondents in all countries reported their income on the same income scale rather than on a country-specific income scale which would have taken into account cross-country differences in income. From the fourth ESS wave onward, however, respondents were asked to report their income in country-specific deciles. Following Rueda and Stegmueller (2016), I transform the income categories into their mid-points for the first three ESS ways. I recode, for instance, second lowest category ranging from 1,800 to under 3,600 Euros to 2,700 Euros. I then calculate country-specific deciles for the first three waves and merge them with the country-specific deciles from wave 4 onward. At country-level, I control for GDP p.c. in 1000 Euros obtained from Eurostat.

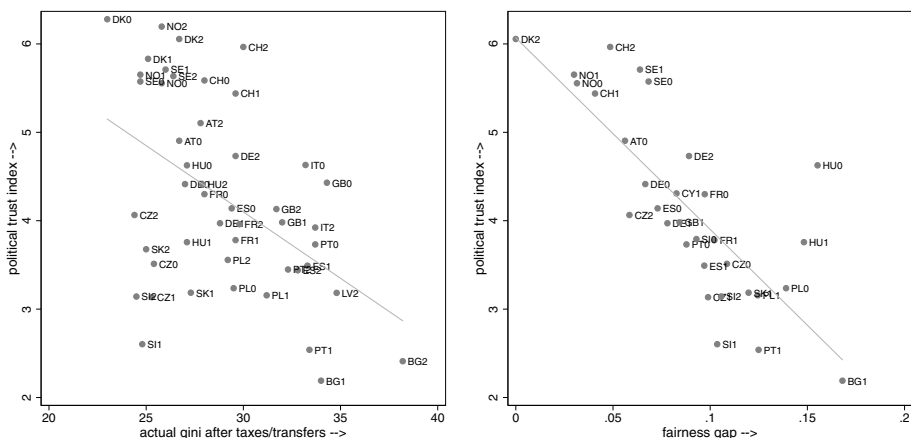
## 4 Analysis

### 4.1 Descriptive Analysis

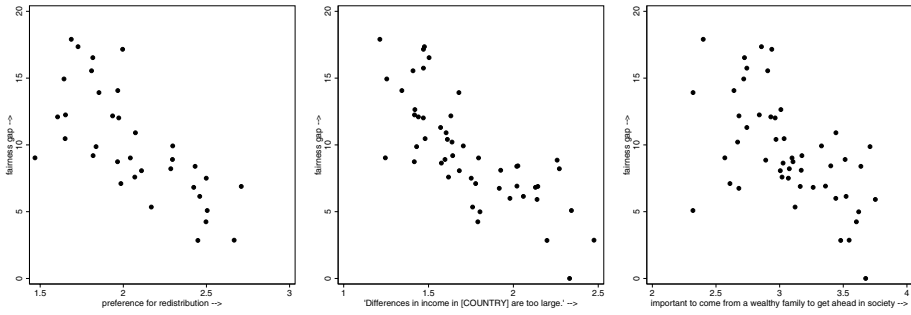
Figure 3 shows the relationship between political trust (x-axis) and actual gini of disposable income (left graph) and fairness gap (right graph) by country-year. Political trust is unequally distributed across countries. Countries such as Norway or Sweden, with relatively low levels of income inequality, show the highest levels of political trust. Poland, Latvia, Portugal and Bulgaria, with different levels of income inequality, report the lowest levels of trust and different.  $R^2$  of this cross-country relationship is 0.21. The right graph shows the relationship between the fairness gap (x-axis) and political trust (y-axis). The general observable pattern is similar to the left graph. However, the correlation between the fairness gap and political trust is, with an  $R^2$  of 0.56, higher. These cross-country patterns show that it may be beneficial to study the fairness gap in order to better understand how actual inequality affects political trust.

### 4.2 Validation Analysis: Validate the *fairness gap* Measure

Since this paper introduces the *fairness gap* as a new measure for fairness evaluations of inequality, it is important to validate such a measure by comparing it to other measures used in the literature. I study the relationship between the fairness gap and frequently used ISSP items to operationalise attitudes towards inequality and preferences for redistribution. To operationalise attitudes towards inequality, I use the item in which respondents are asked to (dis)agree with the statement: 'Differences in income in [COUNTRY] are too large.'. To operationalise preferences for redistribution, we use the widely used item 'Government should reduce income differences.' (Ahrens, 2020; Rehm, 2007; Corneo & Gruener, 2002). Finally, I also look at how the fairness gap relates to an item capturing perceived social mobility as a measure for fairness perceptions by asking respondents 'Getting

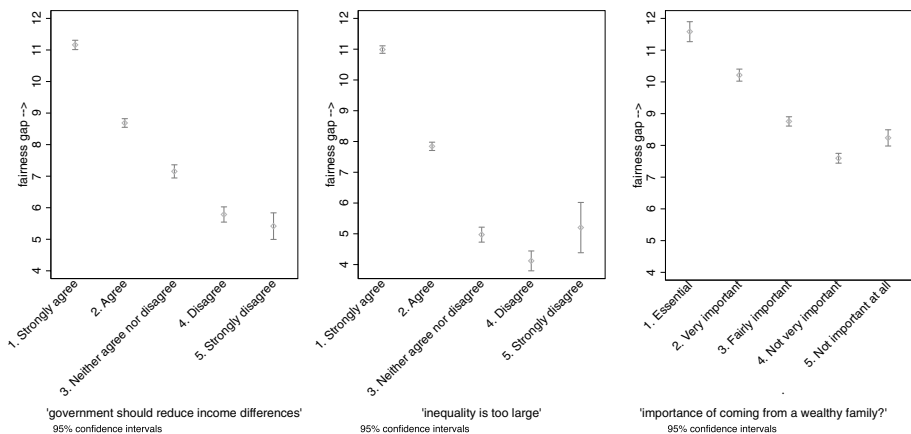


**Fig. 3** Scatterplots: actual inequality (left) and fairness gap (right) and political trust. *Note:*  $N = 31$ ,  $R^2 = 0.21$  (left),  $R^2 = 0.56$  (right). *Source:* ESS 2002, 2010, 2018 & ISSP 1999, 2009, 2019. Own calculations



**Fig. 4** Scatterplots (country-year level): fairness gap by commonly used measures to study attitudes towards inequality. *Note:* N(country-year) = 31. *Source:* ISSP 1999, 2009, 2019. Own calculations

ahead: How important is coming from a wealthy family?’ with potential answers ranging from ‘essential’ to ‘not important at all’. The idea is that respondents perceive a society as immobile, and thus unfair, if it is important to come from a wealthy family to succeed. In Figure 4 I study the relationship at country-year level. Perceiving income differences as too large as well as wanting to reduce income differences is associated with reporting higher fairness gaps in a cross-country perspective. Further, believing that coming from a wealthy family is important for success is also associated with reporting higher fairness gaps at country-level. A similar pattern is observable when looking at individual-level variation visualized in Figure 5: Individuals reporting a higher fairness gap are more likely to strongly agree that income differences are too large and that the government should reduce differences between incomes. They are also more likely to find it essential to come from a wealthy family to get ahead in society. Generally, the fairness gap highly correlates with various measures that are regularly used to measure attitudes towards inequality and preferences for redistribution.



**Fig. 5** CI-plots (individual level) fairness gap by commonly used measures to study attitudes towards inequality. *Note:* N=41,132 *Source:* ISSP 1999, 2009, 2019. Own calculations

**Table 1** POLS regressions on political trust using different aggregation levels of the fairness gap

	(1)	(2)	(3)	(4)	(5)
<i>Dependent variable</i>	Pol. trust	Pol. trust	Pol. trust	Pol. trust	Pol. trust
<i>Aggregation level</i>	Country-year	Working status	Sex	Age	Education
	b/se	b/se	b/se	b/se	b/se
<i>Macro level</i>					
Gini (disposable income)	- 0.03 0.03	- 0.08* 0.03	- 0.04 0.03	- 0.04 0.03	- 0.04 0.03
Fairness gap	- 0.13** 0.04	- 0.05** 0.02	- 0.12*** 0.03	- 0.09*** 0.02	- 0.07** 0.02
<i>Individual level</i>					
Education (ref. lowest formal)					
< Secondary	- 0.00 0.08	- 0.00 0.08	- 0.01 0.08	0.01 0.09	- 0.04 0.09
= Secondary	0.07 0.09	0.07 0.09	0.07 0.09	0.07 0.09	0.01 0.10
> Higher secondary	0.21* 0.09	0.20* 0.09	0.21* 0.09	0.22* 0.10	0.15 0.10
Tertiary	0.39*** 0.09	0.39*** 0.09	0.39*** 0.09	0.39*** 0.10	0.28* 0.10
hh net income decile	0.04*** 0.01	0.04*** 0.01	0.04*** 0.01	0.04*** 0.01	0.04*** 0.01
Female (ref. male)	- 0.09** 0.03	- 0.09** 0.03	- 0.02 0.03	- 0.09** 0.03	- 0.09** 0.03
Age	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
Constant	5.85*** 0.96	6.81*** 1.04	5.88*** 0.95	5.92*** 0.93	5.91*** 0.93
N (individual)	41,132	41,132	41,132	41,132	41,132
N (macro/meso)	31	62	93	155	155
R <sup>2</sup>	0.2490	0.2484	0.2490	0.2485	0.2484

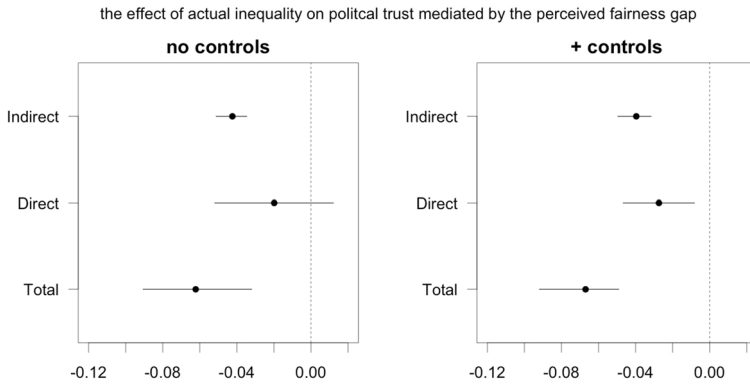
Source: ESS 2002, 2010, 2018 & ISSP 1999, 2009, 2019. Own calculations

Coefficients for ISCO major groups and work status not shown

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

### 4.3 Regression Analysis: The Effect of the Fairness Gap on Political Trust

To study the relevance of the fairness gap for understanding the variation in political trust, I specify pooled OLS regressions at different aggregation levels in Table 1. All models use individual-level data from the ESS and are merged to (i) actual gini coefficients and GDP p.c. in 1000 Euros on country-year level and (ii) different aggregate measures of the fairness gap: Model 1 uses ISSP data aggregated on country-year level, model (2) aggregated on country-year specific working status, model (3) aggregated on country-year specific gender, model (4) aggregated on country-year specific age group, and model (5) aggregated

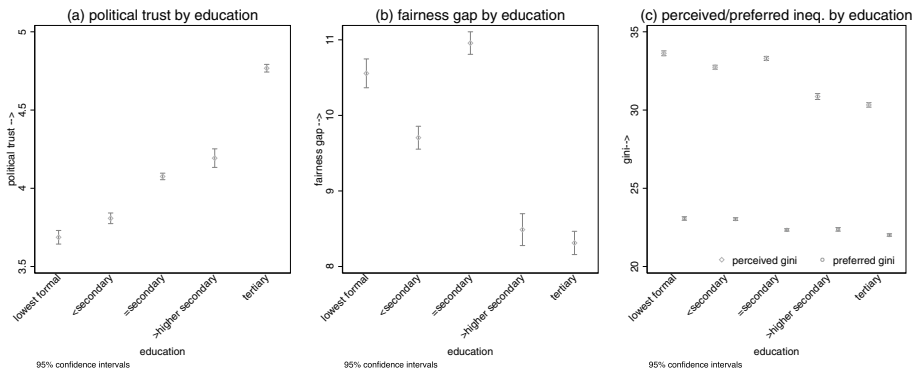


**Fig. 6** Mediation analysis of actual inequality on political trust with the fairness gap as mediator without controls (left) and with controls (right). 95%-ci. *Source:* ESS 2002, 2010, 2018 & ISSP 1999, 2009, 2019. Own calculations

on country-year specific education. In all model specifications, the actual gini coefficient is negatively associated with political trust albeit only significant ( $p < 0.05$ ) in some specifications with effect sizes ranging from  $-0.08$  to  $-0.03$ . The fairness gap measure is also negatively associated with political trust across all models with significance levels ranging from  $p < 0.01$  to  $< 0.001$ : An increase in the perceived fairness gap by 1 is associated with reporting lower political trust between 0.05 (model (2)) and 0.13 (model (1)). The effect of the fairness gap on political trust is rather robust across different data aggregations. Individuals with a higher secondary or tertiary education show significantly higher levels of political trust across all models. This is also true for the effect of income deciles on political trust: Being in a higher income decile increases, on average, trust in political institutions by .04 ( $p < 0.001$ ). Females report lower levels of political trust compared to males and age does not seem to be associated with political trust. Please see appendix, Table 4 for a stepwise regression and an alternative estimation method using multilevel-modeling (MLM) instead of POLS. Overall, the results indicate that the fairness gap matters for political trust. However, the analysis does not provide us with the answer to the question whether the fairness gap mediates the link between actual inequality and political trust or whether the fairness gap affects political trust through a different mechanism.

#### 4.4 Mediation Analysis: Does the Fairness Gap Mediate the Relationship Between Inequality and Political Trust?

I conduct a mediation analysis to study whether the effect of actual inequality on political trust is mediated by fairness perceptions. We do so focusing on the controlled direct effects. This is the effect of inequality when taking the changes of the mediators into account (Iacobucci, 2008; Acharya et al., 2016). I include all control variables that have been included in the models in Table 1 including country- and time fixed effects in the mediation analysis. For this, I use the 'mediation'-R-package (Tingley et al., 2014). This enables us to see how much of the main effect goes through the fairness gap. Figure 6 shows the indirect, direct, and total effect of actual inequality on political trust with fairness gap without controls (left) and with controls (right).



**Fig. 7** Political trust, the fairness gap, and perceived and preferred inequality by education. *Source:* ESS 2002, 2010, 2018 & ISSP 1999, 2009, 2019. Own calculations

I focus on the results of the mediation analysis including controls (Figure 6, right). The average direct effect (ADE) is the direct effect of actual inequality on political trust; this effect is  $-0.03$  ( $p < 0.001$ ). The average causal mediation effects (ACME) of  $-0.04$  ( $p < 0.001$ ) is the indirect effect of actual inequality on political trust mediated by the fairness gap. And the total effect is simply the sum of the direct and indirect effect of actual inequality on political trust; the effect size is  $-0.07$  ( $p < 0.001$ ). The direct effect of actual inequality on political trust is insignificant while the indirect effect, mediated by the fairness gap, is significant and larger in magnitude than the direct effect. Thus, about half of the total effect goes through the fairness gap indicating that fairness perceptions are an important mechanism linking income inequality and political trust. The effect of actual inequality on political trust is small in effect size and significance depends on model specification. The statistically significant effect of the fairness gap on political trust in Table 1 suggests that the fairness gap may not only work as a mediator but may also affect political trust through other mechanisms.

#### 4.5 Outlook: How Does One's Own Economic Position Influence the Fairness Perceptions and Political Trust?

In line with past research, I find that higher actual inequality is associated with lower levels of political trust. These effect sizes are, however, small and significance depends on the model specification. I further find that this already weak relationship is mediated by fairness perceptions. Past research has shown that, beyond actual inequality, one's own socio-economic position is associated with inequality perceptions, inequality preferences, and political trust. To explore the potential role of fairness perceptions beyond being a mediator between inequality and political trust, I descriptively assess how the fairness gap, its disaggregation in perceived and preferred inequality, and political trust varies across socio-economic positions. Figure 7 shows (a) political trust by educational level, (b) the fairness gap by educational level and (c) perceived and preferred inequality by educational level. Graphs (a) and (b) show that higher levels of education are associated with higher levels of political trust and that higher levels of education are associated with reporting lower fairness gaps. When differentiating between perceived and preferred ginis, we see that the decrease in the reported fairness gap by education is more strongly driven by decreases

in the perceived level of inequality rather than the preferred level of inequality. Put differently, when looking at how perceived and preferred inequality varies by education, I see that there is higher variation in perceived inequality (range [30.65; 33.24]) than variation in preferred inequality (range [22.13; 22.62]) (see graph (c)). This is a pattern which I also observe when studying employment status (see Appendix, Figure 8) or occupational groups according to the major groups of the ISCO classification (see Appendix, Figure 9). Interpret this as an indication that individuals differ more strongly in how they perceive inequality across socio-economic variables than in what levels of inequality they prefer. For understanding variation in political trust, it may therefore be promising to focus on the formation of and the consequences of inequality perceptions.

## 5 Conclusion

Can fairness perceptions help us to better understand how income inequality affects individual levels of political trust? Introducing a new measure for fairness perceptions—the *fairness gap*—I find that the ways in which individuals evaluate inequalities matters for their levels of political trust (*H1*). Roughly half of the effect of actual inequality on political trust is mediated by the fairness gap although the main effect of inequality on trust is already small in effect size and significance depends on model specification (*H2*). Studying the relevance of one's own economic position approximated by educational level, I further show that variation in the fairness gap across socio-economic groups is to a larger part explained by variation in perceived inequality rather than variation in preferred inequality supporting (*H3a*) rather than (*H3b*).

These findings provide three contributions to the literature on inequality and political trust. Firstly, I introduce a novel measure to operationalise inequality which is considered (un)fair by individuals. Thereby, I advance the literature on inequality and political trust by actively modelling perceptions rather than relying on attitudes towards inequality. Secondly, I show that perceptions of inequality do not only influence preferences of inequality and redistribution, as shown by past research, but are also associated with more general attitudinal concepts such as political trust. In doing so, I link the literature on inequality perceptions and political preferences to the literature on political and institutional trust. Thus, I outline the importance of perceptions for the formation of more general attitudes towards the political system such as political trust. Thirdly, I show that it is theoretically helpful to differentiate between inequality perceptions and inequality preferences; this analysis shows that individuals differ more strongly in how they perceive inequality across socio-economic variables than in what levels of inequality they prefer. This suggests that individuals are more polarised in their perceptions of inequality than in their preferred levels of inequality and that this polarisation in perceptions closely links to the polarisation in political trust.

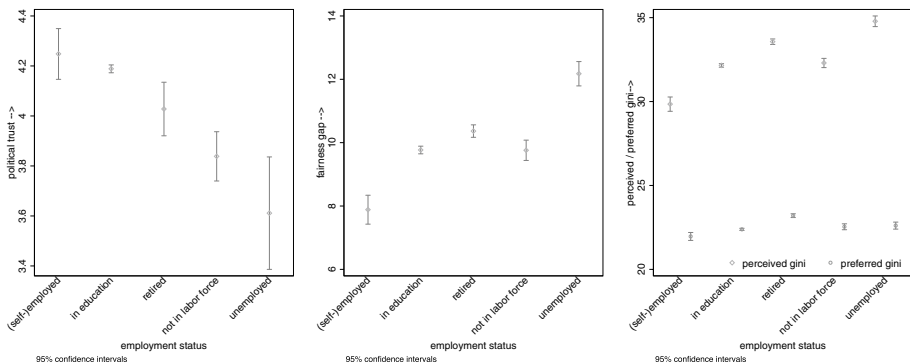
This paper is not free from caveats. Operationalising political trust is difficult for many reasons and becomes even more difficult in a cross-country perspective. There is evidence for cross-cultural variation in how individuals interpret the survey questions measuring social trust (Torpe & Lolle, 2011; Reeskens & Hooghe, 2008). In this paper, I am interested in the subjective assessment of political trust and hope to mitigate the problem by using country fixed effects. Further, I use observational data and conduct descriptive and regression analyses to understand how income inequality and fairness perceptions link to political trust. Methodologically, it is reasonable to assume that there are feedback-mechanisms between trust and fairness

perceptions: Individuals with higher levels of political trust may perceive inequality as fairer *because* they trust in their political institutions. Endogeneity in terms of omitted variable biases or reverse causality is difficult to exclude in this setup of analysis. Studying the causal mechanisms more directly, using experimental or quasi-experimental methods, would be promising to better understand the exact mechanisms and the causal directions. Given that variation in the fairness gap is primarily driven by fairness perceptions, it would be, for instance, interesting to study the following question in a causal design: Does learning that inequality is lower than one initially thought lead individuals to adjust their fairness evaluations and do such adjustments affect their trust in political institutions? The relevance of inequality perceptions for fairness perceptions and individuals’ political attitudes such as political trust makes it crucial to understand how such perceptions are formed. Studying not only the role of heuristics and prior beliefs in the formation of inequality perceptions along other factors such as the own socio-economic position or cultural, economic, and institutional environments but also the relative importance of these different determinants would be a further path for future research.

I suggest that actively operationalising individuals’ fairness perceptions—as their preferred deviation from their perceived status-quo inequality—enables us to better understand when and why fairness perceptions affect individuals’ trust in political institutions. Future research is needed to better understand (1) how individuals build fairness perceptions, (2) how we can *better* measure such perceptions, and (3) how the formation of such perceptions and of general attitudes towards the political system such as trust in political institutions are interrelated.

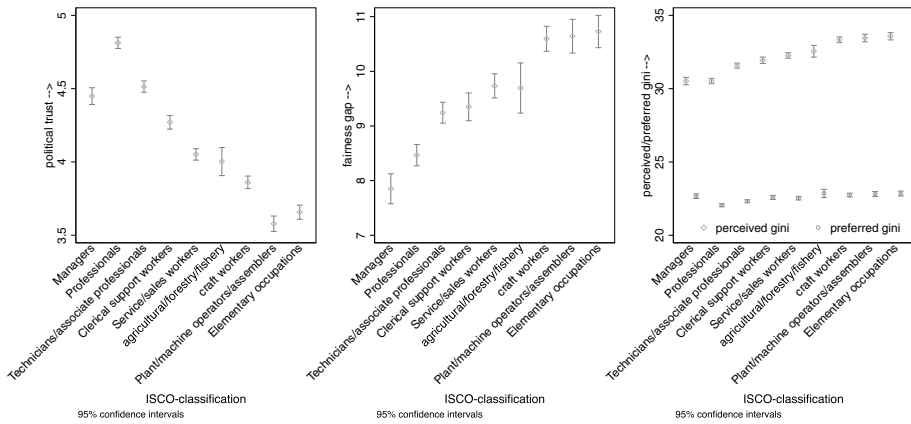
## Appendix

See Figs. 8, 9, 10, 11 and Tables 2, 3, 4 and 5.

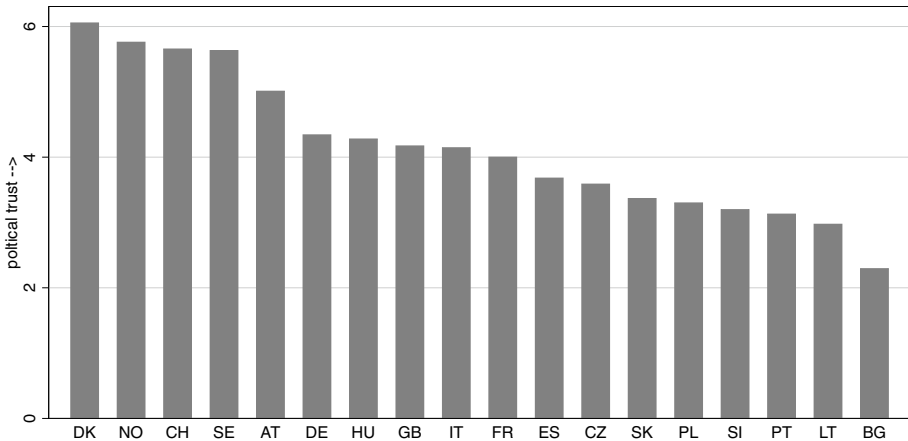


**Fig. 8** Political trust, the fairness gap, and perceived and preferred inequality by employment status

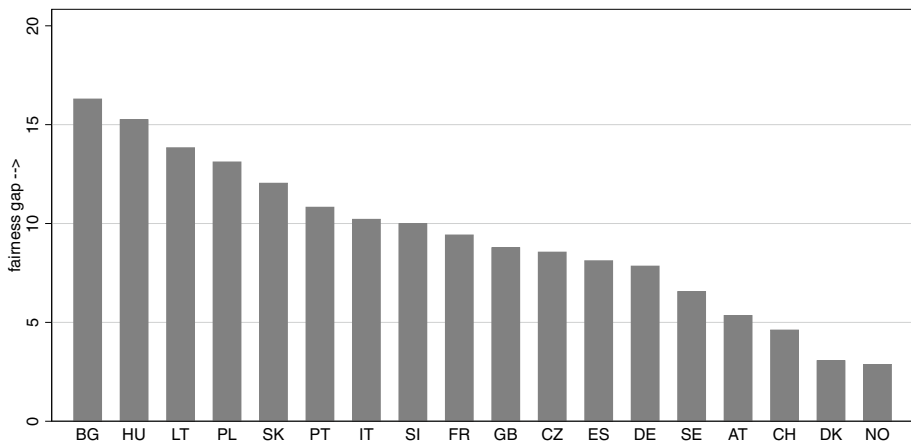




**Fig. 9** Political trust, the fairness gap, and perceived and preferred inequality by ISCO classification



**Fig. 10** Histogram of average political trust by country. *Source:* ESS 2002, 2010, 2018



**Fig. 11** Histogram of average fairness gap by country. *Source:* ISSP 1999, 2009, 2019

**Table 2** Overview of data used for the analysis: Country-years included in the ESS and ISSP

	2002	2010	2018
AT	•		
BG		•	•
CH		•	•
CZ	•	•	•
DE	•	•	•
DK			•
ES	•	•	
FR		•	
GB		•	•
HU		•	
IT			•
LT			•
NO	•	•	
PL	•	•	
PT	•		
SE	•	•	
SI	•	•	•
SK		•	

**Table 3** Correlation matrix at country-year level

	Political trust	Actual gini	Perceived gini	Preferred gini	Fairness gap
Political trust	1				
Actual gini	0.44*	1			
Perceived gini	-0.82*	0.40*	1		
Preferred gini	-0.27	-0.04*	0.26	1	
Fairness gap	-0.79*	0.42*	0.98*	0.06	1

\* $p < 0.05$

**Table 4** Stepwise POLS regressions and multilevel estimation (model 4) of political trust

Dependent variable	(1)	(2)	(3)	(4)
	Pol. trust	Pol. trust	Pol. trust	Pol. trust
	POLS	POLS	POLS	MLM
	b/se	b/se	b/se	b/se
<i>Macro level</i>				
Gini (disposable income)	- 0.11*	0.02	0.03	0.02
	0.04	0.03	0.03	0.03
Fairness gap		- 0.15***	- 0.14***	- 0.13***
		0.03	0.03	0.03
GDP p.c. in 1000 Euros		0.12***	0.15***	0.11***
		0.03	0.03	0.03
<i>Individual level</i>				
Employment status (ref.(self-)employed)				
In education			0.52	0.52
			0.42	0.45
Retired			0.79	0.78
			0.58	0.62
Not in labor force			0.11	0.11
			0.50	0.51
Unemployed			- 0.05	- 0.06
			0.71	0.64
Education (ref. lowest formal)				
< Secondary			0.01	0.00
			0.08	0.09
= Secondary			0.08	0.08
			0.08	0.11
> Higher secondary			0.21*	0.21*
			0.09	0.10
Tertiary			0.39***	0.39***
			0.09	0.11
hh income decile			0.04***	0.04***
			0.01	0.01
Female (ref. male)			- 0.08**	- 0.08*
			0.03	0.04
Age			0.00	0.00
			0.00	0.00
Time-FE	Y	Y	Y	Y
Country-FE	Y	Y	Y	N
N	41,132	41,132	41,132	41,132
R <sup>2</sup>	0.0395	0.2284	0.2510	

Standard errors are clustered at country-year-level. Coefficients for the ISCO major groups, included in model (3) and (4), are not shown

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

**Table 5** POLS regressions of the fairness gap

Dependent variable	(1)	(2)	(3)	(4)
	Fairness gap	Fairness gap	Fairness gap	Fairness gap
	b/se	b/se	b/se	b/se
Gini (disposable income)	0.49***	0.24	0.24	0.21
	0.14	0.25	0.24	0.18
Education (ref. lowest formal)				
< Secondary			- 0.07	0.08
= Secondary			0.24	0.22
			- 0.12	0.20
> Higher secondary			0.24	0.25
			- 0.08	0.28
Tertiary			0.33	0.30
			- 0.46	0.33
			0.29	0.28
Age			0.11***	0.08**
			0.03	0.03
Age × age			- 0.00***	- 0.00**
			0.00	0.00
Female (ref. male)			0.65***	0.44***
			0.12	0.11
Employment status (ref. (self-)employed)				
In education			- 0.58	- 0.70*
			0.32	0.30
Retired			0.33	0.04
			0.18	0.17
Not in labor force			0.29	0.07
			0.22	0.22
Unemployed			0.81***	0.30
			0.20	0.20
'Income diff. too large'				-1.38***
				0.09
Subj. social status (10-top)				- 0.60***
				0.05
'Important come from a wealth fam.'				- 0.23***
				0.07
Constant	-4.38	0.26	- 2.63	6.16
	4.00	6.80	6.31	4.47
Country-FE	N	Y	Y	Y
Time-FE	N	Y	Y	Y
N	45,223	45,223	38,658	37,311
R <sup>2</sup>	0.040	0.189	0.200	0.230

Source: ISSP 1999, 2009, 2019. Own calculations

Standard errors are clustered at country-year-level

Coefficients for ISCO major groups are not shown

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

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## Declarations

**Conflict of interest** The author declare no conflict of interest.

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