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Is unequal representation the consequence of different voting behavior across income groups?

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A B S T R A C T

Extant literature documents the unequal representation of the interests of low- and high-income groups in democracies. One potential explanation for this phenomenon is the electoral behavior of different groups of voters. If affluent citizens base their vote decisions more strongly on policy considerations, while the less affluent rely on forms of electoral support that are less strongly conditioned by policy or performance evaluations, this pattern could influence the ability and willingness of political elites to represent low-income citizens. We make use of the integrated CSES election data to study how, across a diverse set of countries, income levels affect the criteria voters rely on when voting: namely, proximity voting, valence considerations, and economic voting. Overall, our findings show no meaningful differences in voting criteria across income groups, nor consequences for party systems. These findings have important implications for the literature on unequal representation, as they rule out the common narrative that the affluent cast more sophisticated vote decisions.

1. Introduction

Extant research has found that the process of representation is biased: the more affluent segments of society have more of a voice than the less affluent.[1] This is true in the domain of public policy (Bartels 2008; Gilens 2012; Elsässer et al., 2017; Peters and Ensink 2015, (Schakel, 2021)), but also applies to the positions of elected political actors (Rosset et al., 2013; Bernauer et al., 2015; Lupu and Warner 2022; Persson and Sundell 2023), or the priorities (Traber et al., 2022) of different socioeconomic groups within society.

Despite recent advances in the literature, there is little agreement as to what causes this phenomenon (see also Burgoon et al., 2022; Elsässer and Schäfer 2023). Various contextual factors—such as the degree of macroeconomic inequality (e.g., Rosset et al., 2013, but see Gutermann, 2020), the descriptive underrepresentation of low-income citizens (e.g., Carnes and Lupu 2015), the structure of party systems (Rosset, 2021), or the role of interest groups in policymaking (Gilens and Page, 2014)—have been highlighted as playing a role. Other explanations focus on the behavior of the disadvantaged group—e.g., their lower turnout (Peters and Ensink 2015) or their relative lack of political information (Elkjær, 2020; but see Dalton 2021).

In this study, we delve into this second strand of the literature (i.e., the disadvantaged group's behavior). The aim is to tackle a neglected but potentially important explanation for biased representation: whether more and less affluent citizens differ in how they come to a voting decision. We build on the literature on voter heterogeneity in decision-making (see e.g., Bartle 2005; Stubager et al., 2018), examining the factors that are decisive in choosing which party to vote for and whether or not the vote of the less affluent is generally less predictable.

We posit that these differences in electoral decision-making between high- and low-income voters will have implications for the relationship between elites and voters that go beyond the selection of representatives; the differences may affect the *ability* of elites to represent voters on policy grounds, as well as their *willingness* to do so.[2]

This is because, first, heterogeneity in voting behavior influences the clarity of the signal sent. It may simply be easier for politicians to fulfill the expectations of one group if they send clearer signals about what they want in terms of policy. If another group relies more on non-policy-related factors—such as party identification or valence assessments of the candidates—or if their electoral behavior is generally less predictable, it may be more difficult for political elites to cater to the demands of these groups. As Lewis-Beck et al. (2008) note in relation to American

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[1] This literature is predominantly concerned with differences across income groups, see e.g., Lupu and Warner (2022) or Erikson (2015).

[2] Provided of course that elected officials have some idea about voters' motives. We argue that this is most likely the case in Western industrialized democracies, where opinion polls and pre-/post-electoral surveys are frequent.

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presidential elections:

> [W]e believe that it is necessary to determine the evaluative standards that voters employ in order to accurately interpret any "messages" or mandates that might be conveyed by a given electoral result. For example, George W. Bush interpreted his victories in the 2000 and 2004 presidential elections as a mandate for sweeping conservative policy initiatives. But such an interpretation would be questionable at best if the American electorate acted on the basis of other, nonideological, considerations (p. 256).

Politicians' perceptions of public opinion on specific issues are far from being perfectly accurate, as has been shown by recent research (Walgrave et al., 2023). This suggests that politicians may not be fully aware of the reasons for their election. After all, inferring public opinion from election results is difficult if certain groups of electors base their vote on non-policy-related factors.

Second, heterogeneity in electoral decision-making could impact the willingness of political elites to cater to the demands of certain groups of citizens. If policy considerations are less important to some voters, they are also less likely to hold politicians accountable for delivering on their promised policies and less likely to punish them if they are dissatisfied with political outcomes. If more long-term and non-policy-related factors, such as party identification or valence, are decisive for voting, the representatives' mandate will be based much more on symbolic ties and will favor a looser connection, known as the trustee model of representational linkages (Thomassen 1994).

In our view, this discussion highlights two important points. First, an investigation into the "evaluative criteria" (Lewis-Beck et al., 2008) used by the population as a whole and by different segments of the population is relevant for the study of representation and elite behavior. It provides us with useful information about the ability and willingness of elites to consider voters' points of view. Second, such an exploration allows us to shed light on a crucial "input"-based explanation of unequal representation. If no stark differences exist in electoral decision-making criteria between income groups, we can rule out the possibility that differences in the signals sent by voters are decisive in explaining the unequal outcomes that we observe.

In our comparative analysis, we explore inter-group heterogeneity concerning four prominent factors known to influence electoral behavior: party identification, leader evaluations or valence, economic voting, and spatial voting. These four factors represent the classical theories of electoral behavior (Fisher et al., 2017). We take a comparative approach to test our arguments, using data from the Comparative Study of Electoral System (CSES). Our sample comprises 60 elections and covers more than 52,000 respondents in 22 countries interviewed between 1996 and 2016. Our models aim to explain voter choice. As such, we run interactions by income group to get at the differences in decision-making mechanisms between the different groups. Extensive robustness tests are used to ensure that our findings are robust for varying contexts and against a variety of operationalizations.

The results show that the weight of different considerations varies only slightly between high- and low-income voters. Valence factors (such as leader evaluations) and policy or spatial considerations play a slightly larger role for the more affluent. Overall, however, the factors relied upon by low- and high-income earners are very similar. Furthermore, the share of correctly predicted votes for each of these factors is almost identical and relatively high (around 70%). Our final analyses show that if low-income voters applied the same weighting scheme in their vote calculus as high-income voters, this would not affect the vote-weighted mean of the party system. Thus, the heterogeneity that we detect in voting behavior by income is unlikely to affect substantive representation.

These findings suggest that differences in the way income groups reach electoral decisions—at least among those who turn out to vote—do not provide a satisfactory explanation for unequal representation. This is an important contribution to the unequal representation literature, insofar as it eliminates one potential explanatory mechanism. The results indicate that we should no longer blame the less affluent for their inadequate representation. We conclude that the causes of unequal representation may instead be found in party supply and/or in elected politicians' responsiveness to the preferences of different income groups. Furthermore, we show that, besides partisan identity, leader evaluations have the highest predictive power. This suggests that, overall, the policy signal sent by voters may not be particularly clear; public support is perhaps less dependent on concrete policy proposals than previously assumed.

2. Literature on heterogeneity in electoral choice

Since the 2000s, political scientists have tackled the issue of unequal political representation of economically defined groups from an empirical perspective. Most of the work in the field has either analyzed policy responsiveness (i.e., the extent to which policies change in line with public opinion) or policy and ideological congruence between citizens and the representative bodies governing them. Conducted in a variety of democracies, these two types of analysis show that, when there is unequal representation, it is overwhelmingly at the expense of the less affluent (see e.g., Elkjær and Klitgaard, 2021; Lupu and Warner 2022; Persson and Sundell 2023). To give a concrete example, it has been shown that the share of citizens in the top income bracket backing a policy is more strongly associated with subsequent adoption of that policy than the share of middle-income citizens backing the policy. This has been found in countries as diverse as the United States (Gilens 2012), Germany (Elsässer et al., 2017), and the Netherlands (Schakel, 2020). Studies have also found that low-income citizens hold opinions that are systematically further removed from the stances of their governments (Rosset and Stecker 2019; Traber et al., 2022) or representatives in parliament (Bernauer et al., 2015; Rosset, 2021; Lupu and Warner 2022) than high-income citizens. This holds regardless of whether congruence is measured along a left-right spectrum or on specific policy issues. There is, however, no consensus on what causes unequal political representation (see e.g., Peters 2018). Given that elected representative bodies are systematically further away from the preferences of low-as compared to high-income voters, one potential explanation may lie in the fact that these groups vote according to different criteria. As such, affluent voters are perhaps better able to channel their policy preferences into votes when choosing a party or candidate. In what follows, we discuss classic explanations for voting decisions and how their differential use by citizens could help explain unequal representation.

Classic explanations of voter choice refer to party identification, valence, economic voting, and spatial voting. While the first theory is rooted in social identity, valence, economic voting, and spatial voting relate to the perceived utility of the parties on offer. The source of this utility differs between the three types of votes. Valence corresponds to a vote that is based on the perceived desirable characteristics of candidates and parties, such as honesty or competence (Stokes 1992). In this sense, a vote based on valence will maximize the perceived non-policy "quality" of the party or candidate that is chosen. Economic voting corresponds to a vote choice in which voters seek to maximize their own economic situation (egotropic economic voting) or that of the country as a whole (sociotropic economic voting) based on governments' past performance (Kramer 1971; Fair 1978). Under economic voting, voters will reward incumbent parties if the economy has been growing (or is perceived as such) and, on the contrary, will turn to opposition parties if economic conditions are (or are perceived to be) declining. In the spatial voting model, past performance is disregarded. Rather, voters focus on parties' ideological stances and compare them with those of the

competing parties.

It is important to note that these voting criteria are not mutually exclusive. Most individuals declare that they rely on several of them simultaneously, though they attribute a different level of priority to each (Stubager et al., 2018).[3] Of course, there are cases in which using one or the other criterion will lead to the same voting decision. When this is not the case, however, the weight attached to each of the criteria will be decisive in determining the voter's choice.

Each of the four explanations of voting relates to a different facet of representation. Party identification relates to affective and symbolic ties between voters and their representatives. Valence allows voters to choose parties and candidates that are perceived positively, independent of their policy stances. This voting criterion could be seen as related to a trustee conceptualization of political representation. In contrast, economic voting is based on past performance. As such, it is related to accountability mechanisms and the capacity voters have to punish or reward incumbents based on how they perform in office. Finally, spatial voting is based on a selection model of political representation and allows policy preferences to be translated into representative institutional bodies. If voters use their own policy preferences to choose a party that is closest in terms of policy stance, the policy preferences of voters should be reflected in parliaments and ultimately public policy (Pierce 1999). Each of these models of voting behavior has been extensively studied, whether alone or in combination. However, few authors have explored the heterogeneity in the weighting of these considerations (Bartle 2005; Stubager et al., 2018; Blumenstiel, 2016; Héroux-Legault 2023). And, to the best of our knowledge, no research analyzes the heterogeneity of voting across income groups.

We argue that there are two reasons why income groups may differ in their electoral decision-making. First, income is a proxy for economic and material resources. These resources allow citizens to obtain political information and provide the mental space and time to become interested and engaged in politics. More affluent voters thus have more resources to invest in voting than citizens who are deprived of these resources (Manstead 2018). Second, income is associated with higher levels of political sophistication. On average, those citizens who fare well in the market economy are also more knowledgeable about and more interested in politics (Kölln 2018, Elkjær, 2020). This may be due to the material resources income provides, but could also be linked to other factors, such as education, which affects a citizen's income and their level of political sophistication. Both economic resources and political sophistication have been shown to influence the strength of various considerations when making electoral choices (Alvarez 1997; Krosnick 1988; Lau and Redlawsk 2001; Sniderman et al., 1991; de Vries and Giger 2014). In sum, we expect to see differences across income groups in terms of how each of these factors influences voter choice.

In the following paragraphs, we focus on each of the main voting mechanisms in turn, reviewing the literature on the use of these criteria by different social groups and formulating tentative hypotheses regarding differences in the weightings attributed to these factors by different income brackets. These hypotheses should be considered with caution. First, the literature is scarce when it comes to considering intergroup heterogeneity in electoral decision-making. Thus, the uniformity of considerations across the population is a very strong null hypothesis. Second, the evidence regarding the direction of effects is mixed at best, which only allows us to formulate tentative expectations regarding the direction of effects' differences between low- and high-income voters.

Party identification has often been portrayed as one of the main determinants of voter choice (Campbell et al., 1960). It is argued that voters form an attachment to a particular party either based on a group identity or as the result of a Bayesian-updating process that takes into account proximity and competence concerns (Dinas, 2017; Green and Baltes, 2018). This attachment is then highly predictive of voter choice, both in the USA (where the theory originated) and in complex multiparty European settings (Bankert et al., 2017; Bartle and Bellucci 2009; Thomassen and Rosema 2009). Partisanship is often seen as an efficient shortcut that allows citizens to decide without having to devote time to the evaluation of each candidate or issue at each election. Research on party identification has mainly looked at which groups identify with which party or which personal characteristics contribute to identifying with a specific party (Box-Steffensmeier et al., 2004; Peterson 2016). There are reasons to believe that the role of party identification varies across voters. Huber et al. (2005) find that party identification is stronger for citizens with more cognitive resources, whereas Achen and Bartels (2017) report that more informed voters are more likely to switch parties if their preferences are at odds with those of the party they identify with. As income is generally positively associated with political knowledge, this suggests that party identification plays a more important role for less affluent voters.

Valence refers to the overall assessment citizens make of a party or candidate independently of policy considerations. While the term has been used quite widely in the literature, we define it here as an overall assessment of the party leader measured with thermometer scores. This evaluation includes emotional attachment, but also party leadership image and broad performance evaluations (see e.g., Clarke et al., 2004, 2009). While it has been criticized as being too broad (Fiorina 1981), it has recently been shown to capture exactly that which it is intended to show, namely emotions (empathy) and competence (leadership) evaluations (Garzia 2018). While the long-time paradigm for this type of voting consideration has been that it serves as a shortcut for less-informed, unsophisticated voters, recent research suggests that this might not be the case, with highly sophisticated voters also relying on valence considerations (Bittner 2011, Garzia, 2019).

Economic voting provides another perspective on how voters evaluate parties and leaders. It considers voters as making decisions to support an incumbent party or parties based on their perception of the state of the economy (for a review see, e.g., Lewis-Beck and Stegmaier, 2007). The very rich literature on economic voting has tackled two questions that seem relevant here. First, it acknowledges differences in the strength of economic considerations based on voters' personal economic situation (e.g., Singer 2013; Dorussen and Taylor 2002; Hellwig 2001; Palmer and Whitten 2011). The available literature suggests that, given their more precarious and vulnerable economic situation, less affluent voters are more reliant on economic factors when casting a vote. This effect is not always visible, however, when looking at economic shocks and crises (e.g., Weatherford 1978; Duch and Sagarzazu 2014). A second strand explores heterogeneity regarding political sophistication, and again the findings are mixed, depending on whether one considers "egocentric" or "sociotropic" evaluations (Fiorina 1981; Kayser and Wlezien 2011; Gomez and Wilson 2001; Duch et al., 2000; De Vries and Giger 2014). These findings are at odds with the original idea of economic voting, which considered economic voting to be less demanding than spatial voting (Fiorina 1981). In sum, the literature provides no clear expectations as to the differences between income groups, even though heterogeneity in the prominence of economic voting is prevalent in discussions.

Spatial or proximity voting involves making a vote choice that minimizes the distance between the voter and the selected party in the policy space. In its simplest form, just one ideological dimension is considered. To cast a vote based on that spatial logic, voters must know their own position in the policy space, as well as that of each party that is running. This process requires quite extensive knowledge of politics, as well as an ability to process this information. Proximity voting has been found to be more prevalent among politically knowledgeable voters (Carpini and Scott, 1991; Lau and Redlawsk, 2001). Recent empirical evidence shows that the more educated (Stubager et al., 2018) and the more politically sophisticated voters (Héroux-Legault 2023) weigh policy considerations

[3] This also has consequences for our modelling strategy later on. We first test all factors individually before including all variables synchronically in the models.

more heavily in their vote calculus than the less sophisticated or less educated voters. For valence considerations, they report an opposite effect: highly educated and sophisticated voters give less weight to valence than less educated and less sophisticated voters do. Heterogeneity in the usage of voting criteria has not yet been analyzed in terms of income. But since education is a strong predictor of income, we expect to find a similar pattern for high- and low-income voters.[4]

Other research has shown, however, that low-income voters do not choose to vote for left-wing parties in the proportions that would be expected under a self-interested theory of voting (Iversen and Soskice 2006). One explanation is that low-income citizens do not hold left-leaning economic preferences. Another explanation might be that these left-leaning preferences are not incorporated into their vote choice, that is, they do not consider their policy preferences when choosing a party. There is some evidence for both perspectives. Importantly, research has shown that low-income voters are more likely than their affluent counterparts to vote for parties that are distant from them on economic issues. DeLa et al. (2008) demonstrate that, on average, low-income citizens hold more pro-redistributive policy preferences than more affluent citizens, but that they are also more conservative on moral issues. As a result, they do not support left-wing parties in the proportions that might be expected in political economy models. This is particularly true among religious individuals and in countries with electoral systems that rely on proportional representation. De la O and Rodden (2008), however, do not directly test for a differential effect of policy positions on vote choice among more and less affluent citizens, though the greater influence of religiosity among the less affluent might indicate that policy preferences play a smaller role in the vote choice of this group. Rosset, 2021 show that, on average, low-income voters end up voting for parties that represent them less well in a multidimensional space than affluent voters (see also Lesschaeve 2017). Part of the explanation may be that party systems are biased in the first place, making the vote choice particularly difficult for low-income voters. In addition, however, citizens with lower earnings tend to vote less in line with what proximity models would predict. Based on these studies, we expect spatial voting to be more prominent among the (sophisticated) affluent voters.

Last, we consider the explanatory power of these considerations as a whole. We take up a common narrative among public commentators that low-income voters vote "impulsively" or "irrationally". In scientific terms, this translates into an argument that established electoral theories are less able to explain and, thus, predict the vote decisions of less affluent individuals. Bartle (2005) coined this "type 2 heterogeneity", (i.e., differences in how individuals think about politics and, as a consequence, how well-established theories can explain their behavior). In his study on Germany, Blumenstiel (2016) attests that such differences do indeed exist. The lack of political sophistication and individual insecurity about issue positions among certain groups of voters make it harder to predict their vote decisions.

3. Research design, data, and method

Our empirical approach uses three steps. First, we look at differences in the weighting of vote criteria. This is done by estimating regression models of vote choice, including interaction terms for each decision criterion and income. Second, we look at how well our models predict vote choice across income groups. This helps shed light on the question of how precisely we can describe voting behavior for different income groups. It also allows us to look at the substantive size of the heterogeneity of weighting schemes. Finally, we examine the consequences of the different weighting schemes for voting criteria on representation by looking at how the ideological composition of the party system is affected.

We use the Integrated Module Dataset from the Comparative Study of Electoral Systems[5] for our empirical analyses. The dataset covers more than 281,000 respondents across 174 elections in 55 countries. We restrict the dataset to parliamentary elections in democracies, resulting in 60 elections in 22 unique countries.[6] This leaves us with 48,952 respondents with valid answers to the relevant survey items.[7] We transform the data set in the long format such that the independent variables are case-specific variables of the form *voters x party*. This results in as many party-voter dyads as there are parties in each electoral system[8] for the current wave of the survey. We consider our comparative sample to be an asset, as it allows us to study our research question across a large range of elections and contexts. However, given what we know about the strong influence of institutional conditions (such as the electoral system), we also need to be particularly cautious about how robust our findings are across this diverse set of contexts. In our case, the economic context and the magnitude of macroeconomic inequality, in particular, also seem to be key. We provide extensive robustness tests on these contextual factors in an extra section which follows the main results.

Our dependent variable in the following analyses is individual vote choice, which we aim to explain using the explanations set out in the electoral behavior literature: party identification, valence, economic voting, and spatial voting. Here, we follow standard practice both in terms of the setup of the models and the way concepts are measured. An exception is made for economic voting (see below).

We cannot resolve the question of possible endogeneity between party identification, valence evaluations, and policy proximity (but see Sanders et al., 2011; Evans and Chzhen, 2016) and the question of the causal direction between these three concepts using our data. With cross-sectional data, we cannot test whether voters vote for a party because they think the leader is competent or whether they think of a party leader as competent because he or she leads the party they voted for. However, if these rationalization effects are homogeneous across voters from different income groups, our results concerning the question of different weighting schemes between income groups are still valid.

The relationship between valence and proximity, on the one hand, and partisan identity, on the other, is more troublesome since the way party attachments are formed may differ across income groups. For example, high-income voters may base their party affiliations more strongly on policy grounds and consequently be more likely to adapt vote choice to their interests over the course of their lives. Low-income voters, in contrast, may be more lastingly influenced by their social identities and early political socialization. Had we included partisan bias in a model together with the two other vote criteria, we might have missed important variations in the impact of policy on vote choice. Since the (causal) relation between party identification and the other concepts is unclear, we decided to estimate separate models for the two sets of predictors. Thus, we can detect systematic variation in the decision weight of party identification, irrespective of how it was formed. At the same time, this approach provides us with unbiased estimates for the effects of policy, valence, and economic voting irrespective of whether this is caused by party ID or leads to party attachments.

[4] Since our main interest is to analyze one possible cause of unequal representation, it is not relevant to us whether heterogeneity in voting behavior by income is causally related to income or produced by a confounder like education. We are primarily interested in the extent to which decision weights correlate with income.

[5] The Comparative Study of Electoral Systems (www.cses.org). CSES INTEGRATED MODULE DATASET (IMD) [dataset and documentation]. October 17, 2019 version. https://doi.org/10.7804/cses.imd.2019-10-17.

[6] The list of elections and countries is presented in Table A1 in the Appendix.

[7] The leader valence and economic evaluation questions were not asked systematically in Module 2. For this reason, we lost some election studies here.

[8] We provide robustness tests on whether the number of choices available to an individual voter affects our results but find no substantial differences, see Section A.2.2, Table A7, and Figures A10-A12.

Party identification is measured by a dummy variable, taking the value 1 for the party the respondent identifies with and 0 for all other parties.[9] To tackle *leader valence*, we rely on individually reported thermometer scores regarding party leaders, measured on an 11-point scale from 0 (strongly dislike the leader) to 10 (strongly like the leader). Since we know that these thermometer scores are heavily influenced by ideological proximity, we control for this. We construct our measure of non-policy-related leader valence by regressing these thermometer scores on ideological proximity between the respondent and the leader's party and by using the residuals of this regression as our measure of leader valence.

The CSES contains a question on the state of the economy over the past year: has it become better, worse, or stayed the same? We use this variable to generate two distinct dummy variables to capture different aspects of retrospective, sociotropic *economic voting*.[10] The first takes the value 1 for the incumbent party/parties if the respondent reports that the state of the national economy has improved over the past 12 months. Thus, it captures the effect of positive evaluations of the economy on the incumbent party/parties. We label this the *economic rewards voting variable*, in contrast to the *economic punishment voting variable*, which takes the value 1 for all opposition parties if, and only if, the respondent reports that the state of the economy has become worse over the past 12 months.[11]

Policy proximity is measured via the absolute distance between the respondent's self-placement and the party's position. To control for bias caused by projection and persuasion effects, we rescale respondents' reported self-placements and their perceived party positions using a Bayesian version of the rescaling technique (Hare et al., 2015) originally proposed by Aldrich and McKelvey (1977). Rescaling the perception and preference data is especially important in order to eliminate bias that might be produced by certain income groups being more easily persuaded by their otherwise preferred party's policy position. Not controlling for persuasion effects could lead to an overestimation of the effect of policy distance on vote choice for that group of the electorate and so bias our results. The same applies if certain income groups are more likely to project their own policy preferences onto their preferred party and locate disliked parties farther away from their policy ideal point.

Given that the left-right political spectrum may be considered too general to measure proximity voting, we also include more specific items (e.g., on economic and immigration policy) for a subset of elections for which more preference questions existed (Module 5 of CSES). The details regarding these items and the way they are matched with party positions are briefly discussed and presented in section A.2.3in the Appendix (Table A8 and Figure A13).

We are interested in the extent to which the decision weight given to each of these factors varies by income. The CSES survey provides a categorical income measure, based on national income quintiles. This categorization is sufficiently differentiated for our purposes. We use it as a metric variable to capture interaction effects in the vote models.

We further consider education as a possible confounder variable that influences both income and the extent to which voters take certain vote criteria into account. Although we are mainly motivated to detect correlations between the usage of different vote criteria and income, it is nonetheless interesting to determine whether these differences are caused by income or by education. We build a categorical variable to capture respondents' education levels. This variable takes the value of 1 if the respondent received no education or primary education only, the value of 2 for respondents with secondary education, and the value of 3 for respondents with a university education.

To model vote choice, we estimate a conditional logit model. Conditional logit models estimate generic effects for each independent variable. Alternatively, one could estimate a multinomial model which produces choice-specific coefficients. Although this is probably more common in the literature, we prefer the conditional logit model because it better reflects our theoretical purpose; we want to test whether the use of voting considerations varies among individual voters based on their income level. Thus, we assume the weighting scheme of the different factors to be an individual attribute and that the scheme is equally applied to all parties within the individual choice set. The underlying assumption of the multinomial model, however, is that the impact of the independent variables differs over the alternatives in the choice set (e.g., policy proximity could be more decisive when voting for party A than for party B). We estimate the generic effects of our independent variables, irrespective of party labels, and thus only obtain one coefficient per covariate, while considering all parties in each election.

Concretely, we apply a mixed conditional logit model to the pooled dataset with random party intercepts. This allows for variation in choice sets over countries and time, applying the mclogit function in R as described in Elff (2009). The grouping context is thus implicitly considered by random party intercepts at the country-year level. We build the model stepwise: first without interaction terms, then including an interaction term with income, and then also including an interaction term with education. This allows us to first detect systematic variation across income levels, and then in the last step to see whether this variation is actually explained by voters' education levels. We estimate one model with policy, valence, and economic voting together and another model with party identification based on the discussion above. To rule out the possibility that there are party-specific main effects of income, we also estimate separate models for each income group. The results are presented in Section A.2.1 in the Appendix. The results are robust.

4. Results

Let us begin with a descriptive graph. Since we argue that education and political sophistication are closely associated with income, we first show that this holds for our data. We analyze the relation between both variables and income for our dataset by regressing income quintiles on dummy variables for education levels and, in a second model, on a scale of correct answers to political knowledge questions.[12] In both models, we control for random effects at the country level and report the results in Table A2 in the Appendix. Fig. 1 depicts the estimated effects of education and political sophistication on income. As expected, we see a clear positive effect for both political knowledge and education, indicating that individuals with more education and more knowledge are more likely to be in the higher income quintiles than those who are less educated and less knowledgeable.

[9] If a respondent does not identify with any party, the variable is zero for all data rows of that voter.

[10] We are aware that we depart here from singular tests of economic voting since our dependent variable remains the individual party choice and is not transformed into a binary "government" vs "opposition" vote. Such a specification is not possible in the current set-up of the models, but we believe our specification comes closest to the mechanism given our data structure.

[11] In Modules 2 and 3 of the CSES, the economic performance variable is not included. Instead, respondents are asked to evaluate the performance of the incumbent. For these survey waves, we use this performance variable as a proxy for economic performance and construct the economic voting variables accordingly.

[12] For CSES I-III, three political knowledge questions are asked, while CSES IV includes 4 knowledge items. We have rescaled them to range from 0 to 1. Please note also that for this descriptive graph, we have not included the fifth module. This graph is therefore based on fewer cases than are included in the regressions.

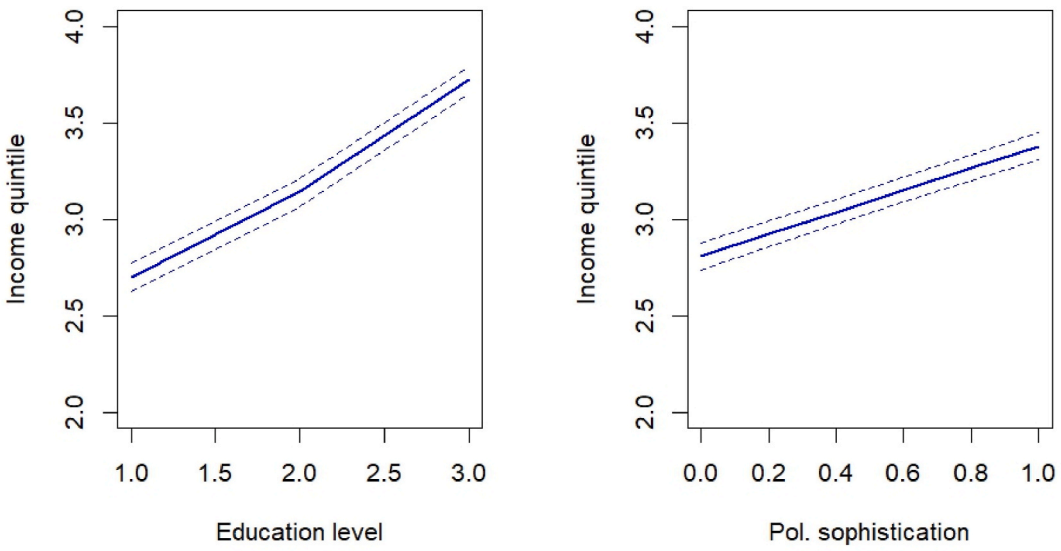

Fig. 1. Marginal effect of education and political knowledge on income, based on multilevel regression models as reported in Table A1.

4.1. Do voters with low and high incomes use different criteria when voting?

To test whether voters from different income groups weigh distinct vote criteria differently in their vote calculus, we report the results of the mixed conditional logit models in Table 1. The first set of models includes terms capturing leader valence, economic voting, and proximity voting. The first model includes only the main effects, the second model includes interactions with income quintiles as a metric variable, and the third model includes education level as a control variable. We see that all three voting criteria play a significant role in individual vote decisions. The second model shows that there is statistically significant variation in the weighting of leader valence and proximity voting by income. The extent to which voters rely on economic voting information varies unsystematically across income groups.

Concretely, the results indicate that the effect of leader valence on vote choice is larger for respondents with a higher income. This suggests that voters with higher incomes give greater weight to the personal characteristics of political candidates than less affluent voters. The effect size for the interaction term is quite small, however, and given the very large sample size it is not surprising to find statistical significance even for very small effects. At the same time, we observe a statistically significant interaction term for proximity voting. Again, this interaction suggests that the more affluent give greater weight to proximity than the less affluent. One might wonder whether education explains this reliance on proximity, with the affluent relying on proximity because they tend to be more educated. The third model provides an answer. After including interaction terms with education in the model,[13] the formerly significant interaction term between income and leader valence is no longer statistically significant. Instead, there is a significant interaction term with education: the highly educated take leader valence more into account than the less educated.

For proximity voting, we also observe a statistically significant interaction term with education. However, the interaction term between ideological distance and income stays statistically significant at conventional levels though its magnitude is lower. This indicates that the reason the affluent put more weight on policy in their vote choice is partly because they are more educated, though there remains an independent effect of income as well. Notably, we expect lower-income voters to give greater weight to policy when they are highly educated.

The second set of models in Table 1 includes party identification as a factor of vote choice. Again, we build the model stepwise. This time, we see no statistically significant interaction terms, neither for income nor for education. This suggests that high-income voters and low-income voters vote equally strongly based on less conditional party ties. However, we cannot rule out the possibility that the way in which party identification is formed differs across income groups or education levels.

To evaluate the substantive size of the interaction terms with income, we plot marginal effects on the predicted choice probability. Since we are interested in how much high- and low-income voters differ in their use of each of the voting factors, we visualize the interaction terms of Model 1b, which does not consider education as a confounder.[14] We predict the choice probability by varying the variable of interest (leader valence and ideological distance) from its minimum to maximum value while keeping all other covariates at their mean or median values. These predictions are calculated once for an artificial respondent in the lowest income category and once for an artificial respondent in the highest income category. Fig. 2 illustrates the results. It shows that both ideological proximity and leader valence are powerful predictors of vote choice, but that their effects vary only marginally across income groups.

The first panel illustrates the marginal effect of leader valence on choice probability. We see that although the interaction term is statistically significant at the one percent level, the change in the model prediction between a low-income voter and a high-income voter is very marginal. The blue and red lines are very close and both fall well within the 95 percent confidence intervals that surround the model prediction. The difference between the two curves is largest in the middle of the scale. Concretely, evaluating a party leader at a value of zero leads to a predicted vote probability of 25 percent for a voter from the lowest income quintile and a probability of 19 percent for a voter from the fifth income quintile, keeping all other covariates at their empirical mean values. At the upper and lower ends of the valence scale, there is no difference to be expected based on income levels.

We get a similar pattern, for the marginal effect of left-right distance, in the second panel of Fig. 2. Again, we find little difference between both curves and the predictions are identical at both extremes of the left-right-distance scale. In the middle of the scale, we detect small

[13] We report findings for education instead of political sophistication here, since it is more clearly the causally prior variable and eases our interpretation.

[14] Since readers might be interested to compare the magnitude of the interaction terms based on Model 1c for education and income as well, we include marginal effect plot for these in Figures A1 and A2 in the Appendix.

Table 1
Mixed Conditional Logit Model of vote choice based on individually reported valence and position scores.

	Model 1a	Model 1b	Model 1c	Model 2a	Model 2b	Model 2c
Leader valence	0.65*** (0.00)	0.62*** (0.01)	0.59*** (0.01)			
Leader valence x income		0.01** (0.00)	0.00 (0.00)			
Leader valence x education			0.02*** (0.00)			
Economic reward voting	0.38*** (0.04)	0.38*** (0.07)	0.55*** (0.09)			
Economic reward voting x income		0.00 (0.02)	0.01 (0.02)			
Economic reward voting x education			−0.11*** (0.03)			
Economic punishment voting	0.27*** (0.05)	0.31*** (0.10)	0.39*** (0.13)			
Economic punishment voting x income		−0.01 (0.03)	−0.00 (0.03)			
Economic punishment voting x education			−0.06 (0.06)			
Ideological distance	−1.68*** (0.01)	−1.41*** (0.03)	−1.11*** (0.04)			
Ideological distance x income		−0.08*** (0.01)	−0.06*** (0.01)			
Ideological distance x education			−0.19*** (0.02)			
Party ID				3.31*** (0.02)	3.33*** (0.04)	3.38*** (0.06)
Party ID * income					−0.01 (0.01)	−0.00 (0.01)
Party ID * education						−0.03 (0.02)
Random effects						
Var(Party intercepts)	1.02 (0.06)	1.02 (0.06)	1.02 (0.06)	0.80 (0.03)	0.81 (0.03)	0.81 (0.03)
N respondents	44,677	44,677	44,677	44,677	44,677	44,677
Null deviance	156,600	156,600	156,600	156,600	156,600	156,600
Deviance	76,230	76,150	76,040	74,060	74,060	74,060

Note: A conditional choice model estimates generic (choice-specific) effects. Therefore, there are no main effects of income on the vote. This does not bias our results, since person-specific attributes (e.g., income) are implicitly controlled for. Section A.2.1of the Appendix controls for a main effect of income on the vote by estimating separate models for income groups.

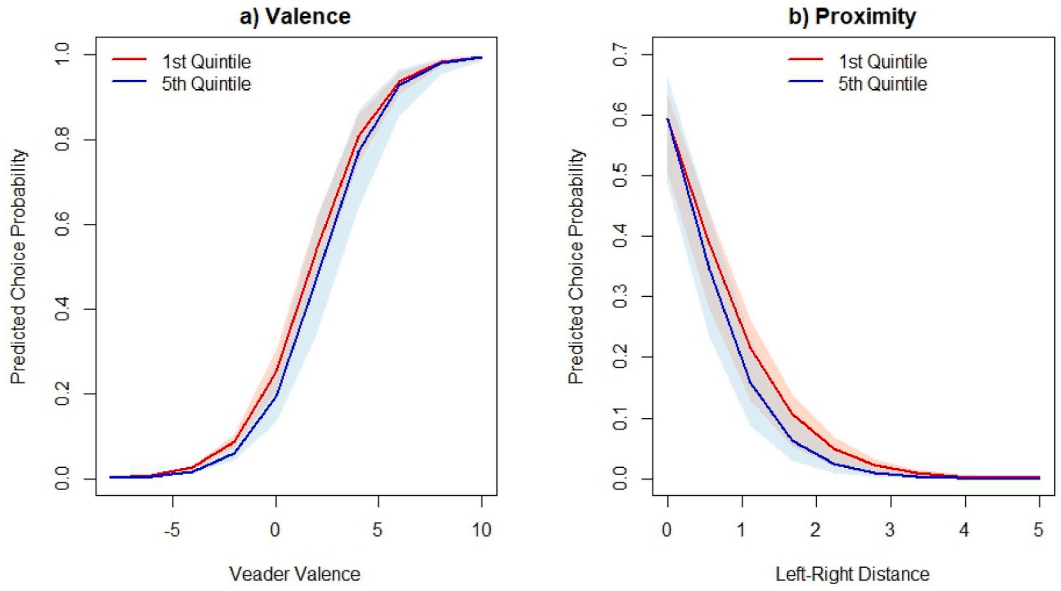

Fig. 2. Marginal effect of leader valence (a) and ideological distance (b) on predicted choice probabilities by income and education Note: Predictions based on Table 1, Model 1b.

differences in the predictions based on income, with choice probability declining more steeply for high-income voters. For example, at 1.7 scale points of ideological distance between voter and party, a voter from the first income quintile is predicted to choose that party with a probability of 10.7 percent, while a voter from the fifth income quintile is predicted to vote for that party with a probability of 6.4 percent only, all other covariates fixed at their empirical mean values.

Our interpretation of these findings is that although we detect interaction terms that reach conventional levels of statistical significance, their substantive size is small. Based on the pattern of results presented in Fig. 2, it would be a bit far-fetched to claim that leader valence or ideological proximity matters *much more* for the more affluent. The results also indicate that voters from the lowest income quintile do care significantly about policy and valence in their voting decisions.

4.2. Is the vote of the less affluent different and less predictable?

A second test of our argument pertains to how well each factor predicts the vote choice of the respondents by income. This analysis involves inspecting the substantive magnitude of systematic differences in the use of different vote criteria from a different angle since this presentation of the results also considers the empirical distribution of the independent variables. The analysis allows us to tackle the last argument, which states that the electoral decision-making of the less affluent is less predictable since they rely more heavily on factors not present in standard models of electoral theory.

We estimate additional models of vote choice, in which we include only one of the vote factors at a time, once without and once with interactions for income. The detailed regression results are presented in Table A3 in the Appendix. Fig. 3 presents a graphical illustration of the

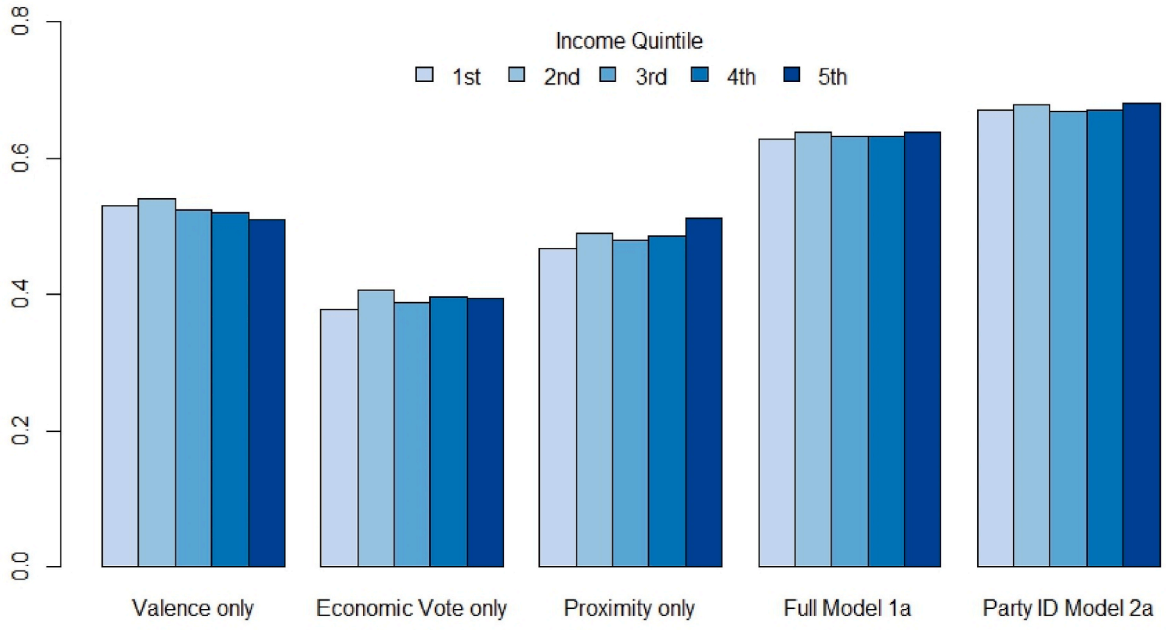

Fig. 3. Percentage of correctly predicted vote choices based on Conditional Logit Models as presented in Table A3 and Models 1b and 2b in Table 1.

results, showing the number of correctly predicted cases for respondents grouped by income, based on models including interaction terms with income. We present the corresponding graph based on models not considering interaction terms with income in Figure A3 in the Appendix. The comparison of these two graphs lends further support to our conclusion that the systematic variation in the use of different vote criteria by income is negligible. Considering variation across income groups hardly improves the percentage of correctly predicted cases.

The following points are noteworthy. First, when considered separately, the party identification model is the best predictor of vote choice. This testifies to the continued impact of this classical concept of electoral theory. At the same time, it perpetuates concerns that the concept and measure of partisanship is too close to the actual vote choice to be theoretically meaningful.[15] Of the three remaining factors, the leader valence model has the largest predictive power. Economic voting explains vote choices the least, though it still leads to a correct prediction for about 40% of the respondents.

The second important lesson from Fig. 3 is that the models perform quite well across all income groups. Even proximity voting has very similar predictive power for the first four income quintiles.

A note on the valence model: although the interaction term in the full Model 1a is significantly positive, indicating a larger effect size for voters with higher incomes, leader valence has better explanatory power for the lower income quintiles based on the model that includes only leader valence. The explanation for this apparent paradox lies in the empirical pattern of individually reported thermometer scores: low-income individuals report larger differences in thermometer scores for party leaders. Respondents from the lowest income quintile assign the lowest or highest possible thermometer scores more frequently than respondents of the highest income quintile.[16] Thus, the lower income groups perceive larger valence differences among party leaders, making this variable a more powerful predictor of vote choice, despite the smaller magnitude of the interaction term between valence and income for low-income voters in the regression models.

For economic voting and party identification, the pattern of correctly predicted choices does not correlate with income. The full model also performs quite well across income groups. We conclude that the vote choices of low-income voters are generally not less predictable.

4.3. *Do the differences in vote criteria matter for representation?*

Can the small differences we detect in the weighting scheme of high- and low-income voters still explain representation gaps? To answer this question, we perform an additional test by asking what the composition of parliament would look like in different scenarios. First, we compute the predicted mean parliamentary position disregarding differences in the weighting schemes (Model 1a) and we contrast this with the predicted mean parliamentary position considering heterogeneity in the weighting scheme by income (Model 1b).

In concrete terms, we re-use the predicted vote probabilities based on the empirical data using the full interaction model, Model 1b. We then calculate the mean position of all parties in the dataset weighted by individual choice probabilities.[17] The predicted mean party positions are reported in the first column of Table 2. There is no significant difference between the two predicted values. This indicates that representation gaps are not the result of different voting behavior between income groups.

Next, we estimate separate models for voters of the first and fifth income quintiles and use these models to predict the mean parliamentary position for these two quintiles and for the other income groups, respectively. This informs us about the expected mean party system position if low-income voters voted the way high-income voters do, and vice versa. The results are reported in columns 2 and 3 of Table 2. Here, we see a significant difference: the predicted mean party position based on high-income respondents always lies more to the right than that of low-income respondents. It is notable that this holds irrespective of which weighting scheme we use. This demonstrates that potential representation gaps are *not* due to the different weighting schemes of more or less affluent voters, but must stem from differences in the empirical

[15] For discussions on how to improve the measurement of partisanship, see Huddy et al. (2018) or Rosema and Mayer (2020).

[16] The concrete numbers are reported in Table A3 in the Appendix.

[17] By this, we take a proportional electoral system to determine the mean policy position of parliament. We regard this as the best and most comparable proxy in our search for the causes of unequal substantive representation within parliaments.

Table 2
Weighted ideological mean of predicted party configuration. Predictions based on different model specifications.

	Model 5a	Model 5c	Weighting scheme of high-income voters (Model 5a, estimated on subset of 5th-in-come-quintile voters)	Weighting scheme of low-income voters (Model 5a, estimated on subset of 1st-in-come-quintile voters)
Pooled empirical data	−0.0004	−0.0003		
- For voters of the first income quintile			−0.006	−0.016
- For voters of the fifth income quintile			0.020	0.007

distribution of the covariates, such as the assignment of valence scores, economic considerations, or ideological preferences.

4.4. Robustness checks

The results presented hitherto are based on a large comparative sample of election studies. In the Appendix, we present a series of robustness checks to address potential limitations of the main analyses in terms of a) model specification, b) scope conditions or contextual differences, c) different operationalizations of the main variables, and d) sample composition and potential non-response bias. More specifically, we estimate separate models for each income group (Section A.2.1), we examine whether our results hold across countries with different economic contexts (Section A.2.2) and different party systems (A.2.3). We also present an analysis based on a more fine-grained, multidimensional measure for policy voting (A.2.4). And we test whether we find similar results when using direct questions about what voters find to be important factors in their voting decision, rather than focusing on voting behavior (based on Stubager et al., 2018, based on Danish election study data 2011, see Section A.2.5). Finally, we analyze the extent to which item non-response varies by income group (Table A10). For the sake of brevity, the analyses are presented in the Appendix. Our main result holds for all studied contexts: there is no evidence that the low-income voters deviate significantly and substantively in the way they use vote criteria in their political choices in the subset of countries with the lowest Gini scores or in the subsets of countries with different numbers of parties, nor do we find that the vote decisions of the less affluent are less well predicted by our standard models of voting behavior.

5. Conclusion

We started this study with an interest in unequal representation and its explanations. By focusing on how affluence impacts electoral decision-making, we tackle the topic from a new perspective. Our results suggest that the ways in which high- and low-income citizens reach their electoral decisions are broadly the same. One difference that emerges is that the affluent rely slightly more on spatial voting (i.e., on policy considerations) than the low-income earners. We were able to show that this is at least partly driven by the fact that high-income voters tend to be highly educated, and education causes the effect. We also found that the effect of leader valence on voting is larger in magnitude for the more affluent, a fact well explained by education. Yet leader valence is better suited to explaining vote choice among the less affluent. However, the magnitude of these differences in effect is very small.

These findings have implications for the ties between representatives and represented. Since individuals belonging to the top income quintile are more likely to rely on policy proximity in their electoral choice, this may provide them with a slight advantage in terms of electoral outcomes that potentially reflect their preferences better. Yet we have shown that the larger effect size is not sufficient to explain representation gaps between both groups.

Two caveats should be mentioned here. First, we are using election study data that is subject to a number of biases, some of which at least partially relate to socioeconomic position (see e.g., Lahtinen et al., 2019). Most of the literature that seeks to empirically address this issue is concerned with turnout. Yet it might prove difficult to translate their research designs into a tool suitable for studying electoral choice. On the other hand, politicians rely on polling data when considering public opinion, so it seems unlikely that these biases are of consequence only for our study. This brings us to a second point: how knowledgeable are politicians about the effects portrayed here? We assume that they rely on polls and pre- and post-election studies to inform themselves about citizens' opinions and their reasons for voting. However, we do not know to what degree these analyses differentiate between economic groups, nor do we know how much importance campaigners attribute to different decision-making mechanisms. This leads us to call for more research into how much elected politicians know about the reasons why they were elected in the first place. This could potentially have large downstream effects on, for example, their behavior in parliament and the emphasis they put on constituency work. More generally, recent research notes that politicians are not particularly good at guessing the policy preferences of citizens in general (Walgrave et al., 2023). Our results show that this cannot be attributed to the heterogeneity in the way income groups come to a voting decision.

Our results indicate a great deal of stability in the way various income groups make electoral decisions across a large range of contexts. Importantly, established explanations for electoral decision-making apply to the whole population and thus also, to a large degree, to the less affluent; this is apparent from the >60% of correctly predicted vote choices across a wide range of contexts. In addition—and importantly for the type of linkages between elites and represented citizens—our findings suggest that, for both high- and low-income voters, long-term and non-policy criteria, such as party identification and leader valence evaluations, prevail when one is deciding who to vote for (although this is based on the assumption that partisanship and leader valence are largely free of policy concerns, which may not be the case). If we are assuming, for the moment, that party identification and valence are less conditioned by actual performance and policy positions, this suggests a more modest role for the accountability mechanism than previously suspected. If policy considerations play a more indirect role and are perhaps less clear-cut than theorized, political elites may be able to get away with more policy shirking than previously assumed. In sum, a promising avenue for further research would be to investigate whether different segments of the population form their party attachments or their valence evaluations in a heterogeneous fashion. Kroh and Peter (2009) work is highly relevant in this regard as it suggests that there exist differences in the ways partisanship is forged.

Most importantly, the very low magnitude of differences across income groups makes it unlikely that unequal representation results exclusively, or even primarily, from the lesser ability of low-income citizens to make informed choices.[18] We see this as an important contribution to the unequal representation literature, even if it only serves to eliminate one potential mechanism. Instead of pointing to the less affluent and their electoral decision-making, we thus conclude by pointing to other factors that may play a larger role in explaining the representational bias: for example, party supply or, at the citizen level, different turnout rates across income groups and variable communication of preferences (e.g., by contacting politicians in between elections).

[18] A similar point is made by Dalton (2021) but with a different methodological approach.

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CRediT authorship contribution statement

Anna-Sophie Kurella: Writing – review & editing, Writing – original draft, empirical analysis. **Nathalie Giger:** Writing – review & editing. **Jan Rosset:** Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.electstud.2024.102790.

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