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ABSTRACT
Does voters' ability to discern who is responsible for policy outcomes affect voter turnout? Although particular institutional arrangements which influence this ability – known as clarity of responsibility – appear to affect how voters form retrospective judgements, existing literature is less informed about its role on voter turnout. This article argues that voters tend to turn out less if they cannot discern who is responsible for policy outcomes. This lack of clarity hinders the process of retrospective evaluations, makes the electoral stakes less profound, and dampens the voters' political efficacy. Using 396 elections in 34 established democracies between 1960 and 2015, it is found that lower clarity of responsibility is associated with lower voter turnout. This study highlights the importance of clarity of responsibility, as it enhances democratic accountability, not only by encouraging retrospective voting, but also by increasing political participation.

Why does turnout vary over time and across countries? Voter turnout is the cornerstone of political participation. Understanding what affects voters' decisions to vote or not is necessary for understanding not only the democratic process but also for assessing the overall health of a democracy. Various institutions have been examined as main factors of the disparity of voter turnout. However, clarity of responsibility, which refers to political arrangements and structural institutions that make it easy (or hard) for voters to reward/sanction their elected officials for policy outcomes, has received little attention from students of voter turnout. This is surprising because clarity of responsibility has been established in the

literature as essential for voters to form retrospective judgements of incumbents.

In a healthy democracy, citizens have regular opportunities to keep a government in office, or bring the opposition to power, by casting a vote based on their understanding of politics. A key part of the above process, though, is to be able to get a grasp of ongoing politics, as well as of the mechanics of the political system in place. The case of Switzerland is quite illustrative of what is at stake. Switzerland is a stable democracy with citizens highly interested in politics, but with famously low turnout rates in national elections. There have been multiple attempts to explain this puzzle. Arguments range from a focus on the sharing of executive power between major parties, which lowers the decisiveness of the election (Franklin 2004), to the fact that Switzerland has the most complex set of electoral rules in the world, which makes it harder for citizens to express their will through their ballot (Blais 2014). We find that many of these arguments, while supported, can be reduced to the fact that the Swiss have a hard time pinpointing which political actor is responsible for what policy decisions, and then finding a way to respond to that information through their vote.

While Switzerland presents an extreme case, we believe that clarity of responsibility can affect voter turnout across elections and countries. More specifically, we claim that low clarity of responsibility tends to reduce voter turnout in three different ways. First, it causes uncertainty over responsibility for policy outcomes and therefore insulates voters from using decision heuristics on the basis of a reward–punishment mechanism. Thus, the cost of voting increases. Second, in an institutional setting, as the clarity of responsibility becomes blurred, the collective act of voting loses its power of decisiveness towards a desired policy outcome which further dampens the incentives for individuals to turn out and vote. Third, low clarity of responsibility can make the 'basic mechanism of vertical democratic accountability fail' (Carlin et al. 2015: 441), which, we argue, would make voters feel that politics is complicated and irrelevant (internal efficacy), and that their vote cannot make any difference (external efficacy).

We test the effect of clarity of responsibility on voter turnout rate in 369 elections from 34 democracies. We adopt Dassonneville and Lewis-Beck's (2017) approach in operationalising clarity of responsibility into two types of cumulative measures: institutional rules and power rules. We find that turnout increases when voters are more informed about 'who is responsible' for policy outcomes due to greater clarity of responsibility. But it appears that only the dynamic measure, the power rules, affect turnout, while the static institutional rules do not have a similar influence.

This article contributes to the literatures on clarity of responsibility and voter turnout by enhancing our understanding of why and how accountability-improving institutions can influence voters' ability to monitor and sanction the performance of government, thereby creating incentives for them to cast a ballot. Moreover, it is intriguing that institutional rules do not affect turnout while power rules do. It implies that voters can easily get used to static institutional settings, and thus voting behaviour becomes less responsive to long-lasting institutional arrangements. Conversely, voters are highly responsive to the dynamic institutional arrangements that occur as a result of the previous electoral contest.

In the next section, we discuss various political institutions affecting voter turnout. After that, we focus on conceptualising clarity of responsibility as well as its key elements. In the fourth section, we develop our theory as to how clarity of responsibility influences the decision of whether or not go to the polls. We then discuss data and methods, and present the empirical results of ordinary least square (OLS) regression with robust standard errors or fixed effects (FE). In the final section, we conclude by suggesting the implications of this study for analysing the health of democracy.

Institutions affecting turnout

The effects of different institutional setups have been at the heart of the discussion on voter turnout. Jackman (1987) introduced the institutional argument and, according to him, voting is an activity that is systematically driven by electoral laws and institutional arrangements that vary by country. A stable party system reduces information costs and increases turnout (Robbins and Hunter 2012). Party systems, though, are shaped by the electoral system.

There are several theoretical arguments about the effect of electoral systems on turnout, a debate not yet settled on the global level (Blais and Aarts 2006). Proponents of PR systems argue that higher proportionality increases the value of individual votes (Karp and Banducci 2008). Additionally, competitiveness among parties in the district level is often significantly higher than in majoritarian systems (Cox et al. 2016; Selb 2009). Therefore, turnout should be higher in parliamentary systems, because the contests are more competitive, and in presidential systems where the elections for the executive and the legislature are concurrent, because this reduces voters' costs in terms of fatigue (Schakel and Dandoy 2014; Stockemer and Calca 2012). According to Stockemer's (2017) meta-analysis, though, the empirical evidence on the effects of electoral systems on turnout is inconclusive.

Another point of contention has been the effect of the number of parties. There are two opposing and counterbalancing causal mechanisms at work. The first is that more and ideologically distinct parties allow a wider range of choices to the voter. This increases the chances they find a party they like and therefore, higher numbers of parties increase turnout (Cox 1999). On the other hand, more parties make coalition governments more likely, which reduces the decisiveness of the election and thus lead to decreased turnout (Powell 2000). Due to the inconclusiveness of the debate, Stockemer (2017) concludes that the number of parties does not have a standard effect on voter turnout. Taagepera et al. (2014), though, combine the above causal mechanisms in their analysis and argue that both affect voter turnout. They find that turnout peaks when the effective number of parties reaches three and decreases when the effective number of parties increases further.

Compulsory voting laws have also been firmly associated with higher turnout (Louth and Hill 2005). They reduce inequalities in turnout, since the probability of punishment incentivises voters of all social groups by increasing the costs of not voting (Gallego 2010). Also, they lead to an increase in the number of parties, as social groups that do not identify with the few mainstream parties are forced to express their political beliefs (Jensen and Spoon 2011). The debate becomes more nuanced when the existence and enforcement of penalties is taken into consideration. When penalties exist and are enforced, the effect exceeds 10% (Stockemer and Scruggs 2012). When this is not the case, the effect is halved (Stockemer 2017).

While the bulk of the literature on institutional and political contexts focuses on formal rules and structures, a more recent thread of the literature looks into less static forms of institutions. An example of this are the recent studies on corruption and voter turnout (Stockemer et al. 2013). The contending theories are that corruption either reinforces turnout due to the development of extensive patronage networks, or that it suppresses turnout by alienating voters from politics (Dahlberg and Solevid 2016). Voter turnout has indeed been extensively studied. To the best of our knowledge, however, there have been no studies associating voter turnout with the 'clarity of responsibility' theory. We believe that clarity of responsibility directly relates to voters' decision to turn out or not. In what follows, we add to the literature by exploring to what extent clarity of responsibility is important to voter turnout in advanced democracies.

The concept of clarity of responsibility

While the concept of clarity of responsibility has not been studied in relation to voter turnout, during the past 25 years it has been conceptualised in multiple ways in research projects on economic voting. In this section

we provide a brief overview of the ways clarity of responsibility has been constructed in previous studies.

Powell and Whitten (1993) were the first to conceptualise clarity of responsibility as a cumulative index, which was made up of five (binary) components. These are coalition government, minority government, bicameralism, lack of voting cohesion in government and the existence of participatory committees. Subsequent studies adhered to the basic setup but experimented with expanding the index in various ways. Anderson (2000) included measures of the size of the governing party and the effective number of electoral parties, while Nadeau *et al.* (2002) also added the elements of ideological cohesion and the length of time the incumbent had held office. While adding components is the norm, the opposite approach has also been followed. For example, Bengtsson (2004) retained only the coalition component, minority government, the length of time in office and the effective number of parties.

Others only kept the indices building strategy and altered the operationalisation components almost entirely. Hellwig and Samuels (2008) use components for their indices based on whether a country's system is presidential or not, whether there is cohabitation and whether the elections are concurrent or not. While the above projects build on the economic voting literature, Tavits (2007) is an example of successfully utilising clarity of responsibility to explain something entirely different, namely the level of corruption. In her measures, Tavits includes majority status, incumbency duration, opposition influence and the effective number of electoral parties.

The first major change in strategy, though, comes with Hobolt *et al.* (2013), who operationalise clarity of responsibility as having two dimensions. They distinguish between components of institutional clarity and government clarity. The first dimension comprises the components that describe the formal laws and structures that shape politics. The components of this purely institutional dimension are strength of parliamentary committee, federalism, semi-presidentialism and bicameralism. The second dimension, government clarity, is less formal and captures how clarity of responsibility is influenced by the political setup formed within the aforementioned structures in the aftermath of each electoral contest. This dimension comprises party dominance, coalition government, cohabitation and ideological cohesion. The clearest advantage of this bi-dimensional approach is that it allows for a clear distinction between the static and dynamic components of clarity of responsibility. The components of institutional clarity tend to stay constant for each country. On the other hand, government clarity has the potential to change with each election. Therefore, this static–dynamic distinction allows for meaningful differentiation within a country.

Table 1. Components in cumulative indices of *Clarity of Responsibility* in previous studies.

Powell & Whitten (1993)	Anderson (2000)	Nadeau et al. (2002)	Bengtsson (2004)
Coalition government	Coalition government	Coalition government	Coalition government
Minority government	Minority government	Minority government	Minority government
Bicameralism	Bicameralism	Bicameralism	Cabinet duration
Lack of voting cohesion in gov't	Lack of voting cohesion in gov't	Lack of voting cohesion in gov't	ENEP
Participatory committee	Participatory committee	Participatory committee	
	Size of governing party	Size of the largest governing party	
	ENEP[a]	Ideological cohesion	
		Cabinet duration	
		ENEP	

Hellwig & Samuels (2008)	Tavits (2007)	Hobolt et al. (2013)	Dassonneville & Lewis-Beck (2017)[b]
Presidential system	Majority status	*Institutional clarity*	*Institutional rules*
Cohabitation	Cabinet duration	Strength of parliamentary committee	Majoritarian system
Concurrent elections	Opposition influence	Federalism	Unitary state
	ENEP	Semi-presidentialism	No dual executive
		Bicameralism	Compulsory voting
			Stable democracy
		Government clarity	*Power rules*
		Party dominance	Single-party government
		Single-party government	Majority government
		Cohabitation	Limited ENEP
		Ideological cohesion	Closed economy
			Cabinet duration

[a]Effective number of electoral parties
[b]The way they named the elements is based on things that are expected to increase clarity of responsibility, so that they use *unitary state* rather than *Federalism* although they are essentially the same.

Dassonneville and Lewis-Beck (2017) take the above blueprint and proceed to do some fine-tuning. They take advantage of the bi-dimensional approach, but they only include components that 'can be quantified in a consistent way and the coding process can be reliably replicated' (Dassoneville and Lewis-Beck 2017: 538). Therefore, in their static dimension of institutional rules they include the type of the electoral system, whether it is a unitary state, if there is a dual executive, the existence of compulsory voting laws, and the longevity of democracy. In the dynamic dimension of power rules, they include the status of the government as coalition or not, its status as majority or minority government, the effective number of parties, how open is the economy, and the length of time the incumbent has held office. Table 1 presents a summary of the various elements that constitute a cumulative variable of clarity of responsibility in the previous literature.

Clarity of responsibility and voter turnout

As discussed thoroughly in the previous section, numerous studies found evidence that clarity of responsibility affects retrospective voting behaviour by blurring the ability of voters to assign responsibility for policy outcomes. We extend this argument to voter turnout, and we claim that clarity of responsibility is a key factor in explaining the disparity of voter turnout rate across elections and countries. Clarity of responsibility affects voter turnout by influencing three key factors: the cost of voting, electoral decisiveness, and political efficacy.

First, clarity of responsibility affects the cost of voting. Most of the theories that attempt to explain why some people turn out to vote while others do not build on the idea that voting is a costly behaviour for citizens (Aldrich 1993). Voting takes time and effort not only to register and go to the polling station (physical costs), but also to identify issues, gather information about the candidates and political parties, and think about or deliberate on said information (information costs).

Given that making a vote choice among several alternatives is costly, rational voters tend to use heuristics such as cognitive shortcuts (Popkin 1994). One such cognitive shortcut is retrospective voting (Downs 1957) (voting based on retrospective evaluations about the incumbent). Retrospective voting is considered one of the more powerful and frequently used tools for a typical voter, who uses a cognitive shortcut but wants to make a rational decision (Fiorina 1981). The underlying logic of this argument is straightforward. If voters perceive that the incumbent government is doing well, they vote for the incumbent, otherwise they vote against. In other words, a retrospective voting decision is made mainly by the voter's retrospective evaluation, which is 'a cost-cutting

element in a citizen's voting decision' (Fiorina 1981: 12). Using the simple cognitive shortcut of retrospective voting, voters do not need to make an effort to collect complex information.

Low clarity of responsibility hinders retrospective evaluations, as it makes it harder for voters to determine who is responsible for policy outcomes. If policy responsibility is attributed to multiple government actors, voters need to spend more time and effort gathering information to find out who is responsible for what, which increases the cost of voting. The most common example is the case of a coalition government. When a government is composed of several political parties, it is unclear to the voters which of the coalition partners is responsible for each policy. In this sense, Lewis-Beck and Lockerbie (1989: 167) argue that 'with more parties in power, there is less responsiveness … to voter views on economic policy. Thus, voters who are concerned over the course of the economy are less motivated to turn out in an attempt to punish (or reward) the government'.

Also, by using the Comparative Study of Electoral System (CSES) data, Brockington (2004) finds that a coalition government generates complex information for voter decision making, which decreases the turnout of less educated citizens. Similarly, when there is a minority government, voters face difficulties in evaluating the incumbent government's policy performance because the policy outcomes resulted from the political negotiation between the incumbent government and the majority opposition parties.

In short, low-clarity contexts insulate voters from holding politicians accountable and hence dampen the pursuit of casting a ballot at the poll by making the cost of voting high. In contrast, high-clarity conditions enable voters to discern those who are ultimately responsible, with low information costs, as it is easy to find out who is in charge. Hence, high clarity of responsibility fosters the incentive of voters to turn out by decreasing the cost of voting.

Second, clarity of responsibility affects how decisive the election appears to be to the voters. According to rational choice theories of voter turnout, the decision to vote or not is conditional on the potential impact of the electoral outcome on policy. That is, a voter is more likely to go to the polls as the probability of their vote affecting policy outcomes increases. The concept of decisiveness of an election, though, differs from that of competitiveness. While competitiveness refers to how close the leading parties or candidates project to be in terms of votes, decisiveness refers to how much changes in terms of policy due to the electoral result. Consequently, where an election is more decisive in the formation of a

government capable of enacting and implementing policies, voters are more likely to turn out to vote.

However, low-clarity settings reduce the decisiveness of elections because they make unclear how one should vote to generate a desired government (Tillman 2008: 1297). For example, in coalition governments, 'electoral outcomes are less decisive, because the final composition of the government depends on the deals that parties are willing (or unwilling) to make' (Blais 2006: 118). This means that voters have less power in the virtual choice of government in the presence of a coalition government (Downs 1957). This reduces the incentives to turn out because the decisiveness of the vote on electoral outcomes decreases. Thus, low clarity of responsibility reduces voter turnout by dampening the decisiveness of elections.

Third, clarity of responsibility might affect the political efficacy of voters. It is well known that voters who have a greater sense of political efficacy are more likely to turn out to vote (Campbell *et al.* 1960). Psychological theories (Campbell *et al.* 1960; Wattenberg 2002) have explained voter turnout and political participation based on the attitudes and perceptions of each individual such as political interest, partisan attachment, and political efficacy.

Political efficacy is comprised of two different components, internal efficacy (the belief in one's capability to understand and participate in politics) and external efficacy (the belief in the responsiveness of political institutions to citizen involvement). Empirical studies found that both types of efficacy have a significant impact on voter turnout (Abramson and Aldrich 1982; Harder and Krosnick 2008; Rosenstone and Hansen 1993). In particular, people who have lower internal efficacy tend to find politics boring, complicated, and irrelevant, and those who have lower external efficacy feel their vote cannot make any difference in politics. In either case, voters do not have any reason to vote.

Low clarity of responsibility generates conditions that cause a deterioration in both internal and external political efficacy. On the one hand, in low-clarity conditions, citizens, especially those who have lower political sophistication, may feel that politics is hard to understand because the production of political outcomes is determined by complex processes and various actors. This situation decreases internal efficacy. On the other hand, when clarity of responsibility is low, voters may feel that they can hardly influence the formation of the cabinet that emerges after the election. This situation decreases external efficacy. For instance, Jackman (1987) and Jackman and Miller (1995) claim that a coalition government, an important component of low-clarity conditions, would hurt the efficacy of voters because voters feel that they do not have a decisive method with which to exert direct influence on governments. This logic also

applies to other conditions such as a minority government, unstable cabinet, federal state, and open economy that lower clarity of responsibility. This is because all of the above conditions increase the difficulty to understand how policy outcomes are determined and make citizens feel that they are not able to exert any influence upon the policy-making process.

Hypotheses

We provided three reasons for how clarity of responsibility affects voter turnout. Low clarity of responsibility increases the information costs related to voting and decreases the decisiveness of elections and political efficacy of voters, which drives turnout rates down. Based on this rationale, we expect that voter turnout under institutional contexts that create low clarity of responsibility will be lower than in a high clarity of responsibility environment. However, we would like to discuss two more points while formulating our hypotheses.

First, as discussed in a previous section, the level of clarity of responsibility is not decided by a single institutional factor, but by multiple components. Based on this literature, the various factors have a cumulative effect on clarity of responsibility. Although each factor might have a separate and independent effect on voter turnout, and on the ability of voters to discern who is in charge of policy outcomes, it is rational to expect that the effect is intensified when several factors occur simultaneously. For example, it is easier for voters to attribute responsibility for a policy when the government is formed by a single party that holds the majority in a parliament with few parties. It would be harder if the same government did not hold the majority in parliament, and even more so if a large number of parties held seats in it. As a result, the effect of clarity of responsibility, which is conceptualised as a cumulative index, on voter turnout differs from the individual effects of the constituent factors. In this regard, we build our hypothesis to test the impact of clarity of responsibility on voter turnout, not the impact of each individual factor of clarity of responsibility.[1]

Based on the above considerations and the three reasons why low clarity of responsibility reduces voter turnout, we build our first hypothesis:

H1: As clarity of responsibility increases, voter turnout will be higher.

Second, clarity of responsibility varies both cross-nationally and within a country across elections. The difference in levels of clarity of responsibility among countries is one of the factors leading to different levels of voter turnout across countries. Also, the level of clarity of responsibility within a country changes over time because some

conditions of clarity of responsibility, such as a coalition, a minority, and/or cohabitation, change according to the results of elections. Therefore, we need to differentiate the way that we approach cross-national and internal country variations.

While cross-national variation tends to be more profound, we also believe that the same causal mechanisms will drive the relationship between clarity of responsibility and turnout within countries. For example, the informational costs of voting decrease when an electoral contest leads to a coalition government being replaced by a single-party government, as well as when a minority government is replaced by a majority government. The clarity of responsibility will be higher during the new term and will have a different effect on turnout in the following election. Regarding the decisiveness of an election, that would increase if a single-party government took the place of a coalition government after an election. Finally, political efficacy can change between elections if politics seem to become simpler, through changes like the ones described above. Therefore, it becomes apparent that clarity of responsibility can increase in the span of a single electoral contest. This means that voter turnout in the following election should be higher compared to the one that led to the aforementioned political changes and consequently to the increase in clarity of responsibility.

Thus, the levels of clarity of responsibility affect the levels of voter turnout across countries as well as the change of voter turnout within a country. We formulate a second hypothesis to express our expectations for the effects of internal country variation of clarity of responsibility across elections:

> H2: Increases or decreases in clarity of responsibility across elections will lead to voter turnout increasing or decreasing accordingly.

Data and methods

In order to test our hypotheses, we draw data on voter turnout from member countries of the Organisation for Economic Co-operation and Development (OECD) since the 1960s. This yields a dataset of 369 elections from 34 countries, with an average 7 elections in each country. Online appendix A1 presents a list of the countries and the time periods in the dataset.

Outcome variable

Our dependent variable is voter turnout. There has been substantial disagreement on how to measure turnout. On the one hand, scholars

measure the percentage of registered voters (REG) that go to the polls (Blais and Dobrzynska 1998; Dettrey and Schwindt-Bayer 2009; Franklin 2004; Kuenzi and Lambright 2007, Powell 1986). On the other hand, turnout has been measured as the proportion of the voting-age population (VAP) that turns out to vote (Dettrey and Schwindt-Bayer 2009; Endersby and Krieckhaus 2008; Fornos et al. 2004; Gray and Caul 2000; Jackman 1987; Powell 1986). Each measurement has limitations. For instance, the registration-based measure has narrow variation because it is based on the group of people that is already predisposed to turn out and cast a ballot. The age-based measure might cause problems for cross-national comparability due to the exclusion of some groups in the voting-age population in some countries (Blais et al. 2001).[2] To avoid overstating results that are biased due to either measurement errors or comparability issues, we present models with both variables.[3] We obtain both measures (REG and VAP) of turnout from the Voter Turnout Database of the Institute for Democracy and Electoral Assistance (IDEA).[4]

Explanatory variables

In this study we adopt a slightly altered version of the indices by Dassonneville and Lewis-Beck (2017) because the measurement is comprehensive and fits content validity well. We believe that the elements of the variable reflect the concept of clarity of responsibility in a solid way, and the feature of each element is theoretically defined, so that it measures what it purports to be measuring.

More importantly, following recent developments in the literature (Dassonneville and Lewis-Beck 2017; Hobolt et al. 2013), we do not comprehend clarity of responsibility as a unidimensional concept. Instead, we find that a two-dimensional setup, such as institutional rules and power rules in Dassonneville and Lewis-Beck (2017), better captures the concept in question. Organising the indices in two dimensions allows for greater versatility and theoretical precision. While clarity of responsibility is a single theoretical concept, not all of its components share the same major characteristics.

The institutional rules in our measure consist of four out of the original five components. We keep the electoral system component, to account for differences between majoritarian and mixed or proportional electoral systems. We expect that majoritarian electoral systems, which tend to lead to one-party governments, will increase clarity of responsibility (Powell 2000). We include the distinction between federal and unitary states, as significant division of power is expected to lower clarity of
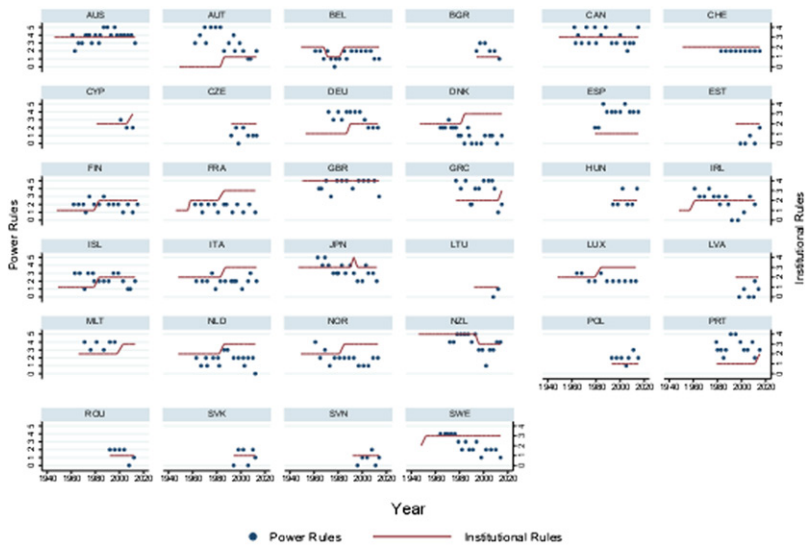
Figure 1. Variation in power rules and institutional rules across countries.

responsibility (Cutler 2004; 2008). Also, we include the distinction between parliamentary systems and presidential or semi-presidential systems (Hellwig and Samuels 2008), where we expect that presidential systems will heighten clarity of responsibility, while the existence of dual executives in semi-presidential systems will lower clarity of responsibility. The final institutional indicator we use is the longevity of democracy, since repeated democratic processes generate a learning effect (Lewis-Beck and Stegmaier 2009).

The only way we 'alter' the original variable is by removing compulsory voting from the list based on the two reasons. First, we believe that it is not an essential element in capturing the concept of clarity of responsibility. The exclusion of inessential elements also increases the measure's content validity (Kellstedt and Whitten 2018). Second, we believe that compulsory voting has a direct and immediate effect on our outcome variable, not through the channel of clarity of responsibility, so decide to include it as a part of rival explanations.

The second cumulative variable is power rules, which we include as proposed by Dassonneville and Lewis-Beck (2017). First, the difference between coalition and single-party governments is consistently understood as important in regard to clarity of responsibility (Powell 2000). Second, we include the indicator dividing majority and minority governments. Given that the first type has more freedom to pursue policies, majority governments will increase clarity of responsibility. Third, we include an indicator of the effective number of parties, whose effect is contested in

the literature. The existence of available alternatives is important. A more fragmented party system may make it more difficult for the electorate to identify a clear alternative to the governing parties (Anderson 2000). On the other hand, it may increase the chances that voters find a party they like (Cox 1999). The fourth indicator relates to the openness of the economy, with the expectation that in more globalised economies responsibility will be less clear due to limited policy space to manoeuvre (Duch and Stevenson 2010; Hellwig and Samuels 2007). Finally, we include a measure of the length of time the incumbent has been in office, as more time in power will increase the voters' understanding of who to hold responsible. The sources of information are in Online appendix A.

When constructing the two cumulative indices, Dassonneville and Lewis-Beck (2017) weighted each element equally to avoid favouring one over the others. To do this, they made all measures dichotomous by using the median value as a cut-off point for continuous variables such as effective number of electoral parties (ENEP) (for a detailed analysis, see Dassonneville and Lewis-Beck 2017: 543). This is in line with the conventional strategy proposed by Powell and Whitten (1993) and is still adhered to by Hobolt et al. (2013). This yields the cumulative variable of institutional rules ranging from 0 to 4,[5] and power rules variable ranging from 0 to 5 in that a higher value denotes a high level of clarity of responsibility. Figure 1 presents the variations in the clarity of responsibility indices, power rules and institutional rules across the elections and countries in our sample since the 1940s. The dot represents power rules, and the solid line represents institutional rules. The y-axis on the left side of the figure is the range of power rules, and that on the right-hand side of the figure is the range of institutional rules. One noticeable point is that the index of power rules fluctuates across elections in most of the countries (except Switzerland), whereas the index of institutional rules changes much less across elections.[6] For that matter, Dassonneville and Lewis-Beck (2017) identify the institutional rules as 'fairly stable' or 'fixed' and the power rules as a 'dynamic' indicator formed by actors' behaviour.

This cumulative measure has two merits. First, the cumulative measure of various elements 'allows errors to cancel out and permits the signal itself to become more visible' (Dassonneville and Lewis-Beck 2017: 538), and thus, 'theoretically, the impact of the various components should be cumulative' (Nadeau et al. 2002: 411). Additionally, scholars have predominantly used a dichotomous measure of clarity of responsibility. As such, low clarity of responsibility receives a value of 0, and high clarity of responsibility receives a value of 1 (with a few exceptions: Dassonneville and Lewis-Beck 2017; Hobolt et al. 2013). Yet with this binary measure,

empirical analysis suffers from little variation in the main independent variable, inducing weak statistical power.

Control variables

In order to account for other rival explanations, we include various political and socioeconomic control variables based on previous studies. With regard to political variables, we include compulsory voting. In decades of scholarship, it has been established that turnout is higher when voters are required by law to go to the polls (Fornos *et al.* 2004; Franklin 1999; Gray and Caul 2000; Jackman 1987; Lijphart 1997; Powell 1986). This is operationalised as a dichotomous variable, coded 1 if a country compels citizens to vote by law, and otherwise 0. Based on the recent discussion about the varying effect size (Stockemer 2017), we also account for the degree of the sanctions and the rigidity of the rules within compulsory voting systems for a robustness purpose. The information on compulsory voting is based on the IDEA dataset.

We also include level of democracy, and expect that more democratic countries would have higher turnout because political rights respect and civil liberties would encourage citizens to express various views and participate in political activities including turning out to vote (Fornos *et al.* 2004). We use Polity IV variable, which ranges from −10 (strongly autocratic) to +10 (strongly democratic) (Marshall 2013).

In addition, we account for election competitiveness, following the plausible expectation that citizens tend to turn out more in competitive elections because the marginal effect of any additional vote on the outcome is going to be larger the closer the race is (Powell 1986; Franklin 2004). Election competitiveness is operationalised as the absolute value of the percentage point difference in seat share between all governing parties and the opposition[7] (Franklin 2004; Hobolt and Klemmensen 2006). We obtain the data on seat shares of parties from Armingeon *et al.* (2008). As the higher value of election competition denotes a big difference in the seat shares between the governing parties and the opposition parties, it represents a less competitive election. So we expect to see a negative sign for this variable.

Additionally, there are four socioeconomic factors accounted for in our models: level of economic development, economic performance, education and population (Cancela and Geys 2016). We use GDP (per capita logged) as the measure of economic development, expecting that overall wealth and development will contribute to higher turnout because sufficient resources can lower the costs of voting (Dettrey and Schwindt-Bayer 2009; Gray and Caul 2000; Jackman 1987; Powell 1986). We obtained the

information on GDP per capita from the Maddison Project (Bolt and Zanden 2014). In terms of the role of economic performance on turnout, it is hard to draw a clear expectation from the extant literature. Scholars argue that economic downturn will increase turnout because citizens are more willing to redress grievances (Fornos et al. 2004; Gray and Caul 2000); however, voters become more apathetic toward the political system during rosy economic conditions (Dettrey and Schwindt-Bayer 2009). For the GDP growth variable, we use yearly GDP growth rates from the Conference Board (2014). We also account for the effect of education on political participation. Not only education will increase a sense of 'civic duty', but more importantly it will reduce the cost of voting for the citizens in terms of acquiring and weighing information in order to arrive at a vote choice (Hobolt and Klemmensen 2006). We use government spending on education (as percentage of GDP), and obtain the data from the United Nations Education, Scientific and Cultural Organization (UNESCO) Institute for Statistics.

Finally, we add the population variable to control for the size of a country. Based on Blais (2000), we predict that turnout will be higher in smaller countries because one single vote in a small state is seen as having a higher probability of being decisive, inducing a larger effect in electoral outcome (Blais 2000; Geys 2006). We collect data on the size of population (in 1000s and logged) from Gleditsch et al. (2002). All these socioeconomic factors are lagged for a year. The summary statistics of the variables included in our analysis appear in Online appendix A2.

Model specifications

The dataset is both cross-section and time-series and the unit of analysis is country-election year. The panels are unbalanced with uneven gaps in the time-series, which violate the assumptions of pooled time-series analysis. More specifically, due to many more panels ($N = 34$ in simple models and $N = 29$ in full models) than time points (up to 22 in simple and 13 elections in full models), we are concerned with heteroscedasticity and serial correlation across panels. Furthermore, the issues of autocorrelation over time require particular attention.

In order to account for these issues, we test our first hypothesis (H1), which states that high levels of clarity of responsibility will be associated with a high level of voter turnout cross-nationally, with the use of fixed effects. Our second hypothesis, though, cannot be tested in the same way. Our theory includes a dynamic component which implies that change in turnout will be affected by the varying level of clarity of responsibility. In particular, as the level of clarity of responsibility within a country tends to

Table 2. Effect of Clarity of Responsibility on Turnout (OLS).

	Dynamic Model				Static Model	
	Model 1 VAP	Model 2 REG	Model 3 VAP	Model 4 REG	Model 5 VAP	Model 6 REG
LDV (VAP)	0.860*** (0.047)		0.905*** (0.071)			
LDV (REG)		0.906*** (0.030)		0.871*** (0.034)		
Institutional rules	−0.281 (0.420)	0.248 (0.364)	−0.030 (0.409)	−0.067 (0.355)	−0.572 (1.204)	0.946 (1.088)
Power rules	0.815** (0.368)	0.700*** (0.284)	0.849** (0.348)	0.872** (0.359)	1.434*** (0.409)	1.052** (0.493)
Compulsory voting			3.792** (1.973)	3.871*** (1.494)	–	–
Democracy $t-1$			−1.185 (1.010)	−0.176 (0.870)	−2.054 (1.806)	−2.303 (1.562)
Election competition			−0.032 (0.027)	−0.044*** (0.018)	0.010 (0.031)	0.018 (0.037)
GDP growth $t-1$			0.082 (0.180)	−0.023 (0.148)	0.108 (0.176)	0.174 (0.132)
GDP (per capita, log) $t-1$			3.113 (2.182)	3.194** (1.182)	−11.070*** (3.306)	−11.908*** (2.942)
Education Spending $t-1$			0.066 (0.359)	0.749** (0.313)	0.308 (0.710)	0.153 (0.780)
Population (log)			−0.786 (0.403)	−0.369 (0.350)	−4.801 (2.134)	2.171 (1.973)
Constant	7.783*** (3.201)	3.810* (2.583)	−8.190 (19.228)	−22.581* (12.050)	231.8*** (76.36)	184.7*** (63.25)
Fixed Effects	No	No	No	No	Yes	Yes
R2 within	0.315	0.415	0.366	0.309	0.384	0.397
R2 between	0.970	0.981	0.967	0.979	0.021	0.095
Countries	34	34	29	29	29	29
Elections	361	369	196	198	205	209

Standard errors in parentheses
*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

change over time (at least for the power rules index, see Figure 1), we expect that an increase or decrease in the level of clarity of responsibility will make turnout increase or decrease accordingly across elections within countries (H2). To capture this dynamic component, we follow Endersby and Krieckhaus (2008) and use OLS regression with robust standard errors clustering around panels, and we include a lagged dependent variable (LDV) to render the model dynamic and to account for first-order autocorrelation.

Furthermore, the inclusion of LDV has a strong methodological ground in that the past turnout rates matter for the current rates of turnout. So models of turnout excluding LDV would yield biased results, notably inflating the size of coefficient due to omitted variable bias. Indeed, when the theory expects dynamic process, scholars have found that the model with LDV provides estimates that are superior to the other models (Beck and Katz 1995; Keele and Kelley 2005).

Results and analysis

Clarity of responsibility does affect voter turnout, but while power rules appears to have an effect on turnout, institutional rules does not. Table 2 presents the results of OLS regressions. Models 1, 3, and 5 explain variation in the percentage of the voting-age population that goes to the polls, and Models 2, 4, and 6 explain variation in the percentage of registered voters who turn out. The first four models (Models 1–4) include LDVs rendering the models dynamic to see if a high level of clarity of responsibility increases voter turnout rates across elections. The static models do not include LDVs, focusing on the association between the level of clarity of responsibility and the level of voter turnout. To address the omitted-variable-bias concern, we use fixed effects estimation in Models 5 and 6.[8] In Models 1 and 2, we ran the analysis without control variables to utilise as many observations as possible (leading up to 369 elections from 34 democracies) from our dataset, and the remaining models control for the rival explanations.

In both Models 1 and 2 in Table 2, the power rules appear to increase turnout whereas the institution rules do not. A one point increase in power rules yields about 0.815% increase in VAP and 0.7% in REG. Although controlling for the rival explanations in Models 3 and 4 causes a dramatic drop in sample size (about 40%) compared to the two simple models (Models 1 and 2), it does not change the impact of clarity of responsibility on turnout. Similar to the results from Models 1 and 2, the power rules have a statistically significant positive relationship with turnout, while the institutional rules remain statistically insignificant. Both the size of the coefficients and the standard error of the power rules in
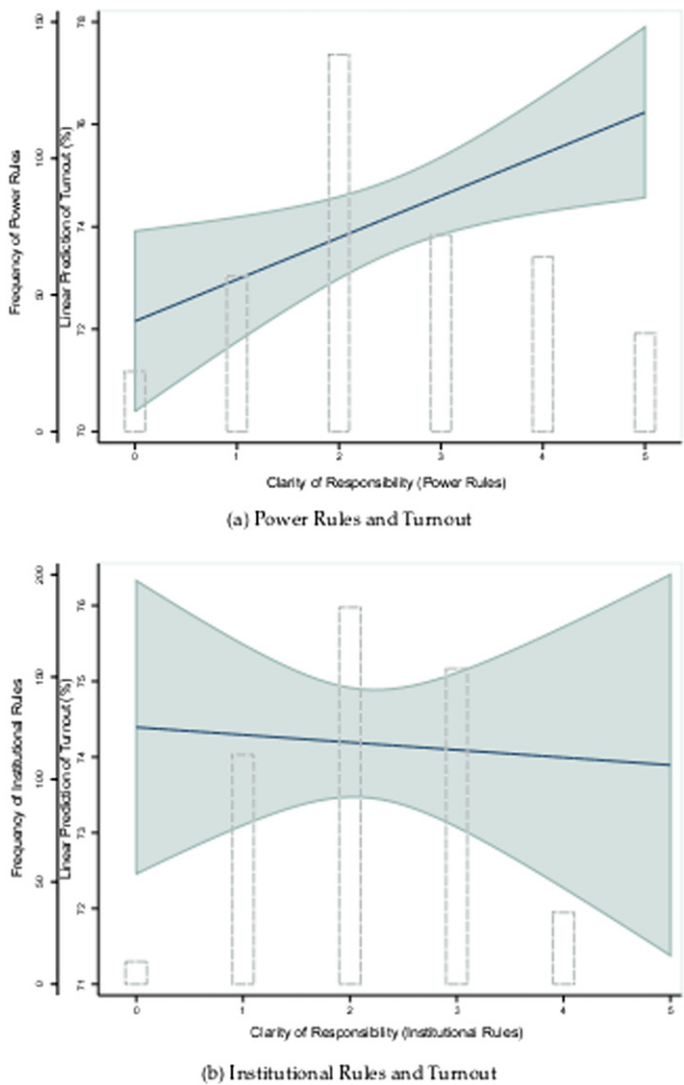
Figure 2. Predicted values of voter turnout (95% CIs). (a) Power rules and turnout. (b) Institutional rules and turnout.

Models 3 and 4 are similar, suggesting that the role of power rules is robust to both measures of turnout and providing supportive evidence for our dynamic hypothesis in that an increase in the level of clarity of responsibility (power rule) leads to a corresponding and similarly direct- ing change in voter turnout.

Our results are consistent in the static models (Models 5 and 6) with fixed effects. While the institutional rules do not reach a conventional sig- nificance level, the power rules appear to have a statistically significant

and positive relationship with turnout across all models. This validates our hypothesis (H1) in that a high level of clarity of responsibility (power rule) leads to a high level of turnout. For further examination, we test the impact of each indicator of both institutional and power rules separately. The results of these analyses are presented in Online appendices A3 and A4.[9]

The difference between power rules and institutional rules is obvious in Figure 2. Sub-figure (a) is based on power rules and (b) is based on institutional rules. The outer y-axis and the bar graph present the distribution of power rules and institutional rules. The inner y-axis and solid line present the linear predicted values of turnout (%) based on post-estimation of Model 4. The shaded area shows the 95% confidence intervals. There is strong positive association between turnout and power rules in sub-figure (a). Holding other variables constant at their mean or median, the expected value of turnout is about 72% at the minimum value of power rules. The expected value of turnout reaches around 76% at the maximum value of power rules. However, there is weak, albeit negative, association between turnout and institutional rules in sub-figure (b).

Indeed, power rules make the responsibility of incumbent performance clearer so that voters can make retrospective evaluations on policy outcomes. When voters become more able to make a quick and easy vote choice to hold the government accountable, the cost of casting a ballot decreases, voting becomes more decisive, and voters feel higher political efficacy. As a result, the turnout increases. However, voters do not respond to formal institutional arrangements such as institutional rules when they decide to turn out or not. This finding is in line with Hobolt et al. (2013), albeit their dependent variable is incumbents' vote share, in that 'It is the clarity of the incumbent government, its cohesion, which matters more to voters' ability to hold government to account rather than formal institutional divisions of power' (Hobolt et al. 2013: 180).

For further investigation, we also test statistical relationship between clarity of responsibility and political efficacy, which is the base of our third causal mechanism. If our theory is correct, we should observe that political efficacy is indeed lower in lower clarity contexts. Inspired by Hobolt et al. (2013), we use individual-level data from the 2009 European Election Study (EES) (Van Egmond et al. 2010). For a robustness purpose we also included EES 2014 in our analysis.[10] We created mean scores of political efficacy across different values of clarity of responsibility. Figure A1 in the Online appendix presents the relationship between mean scores of efficacy across clarity of responsibility. Surprisingly, political efficacy is positively related to institutional rules, but we get a null finding in regard to power rules. These results imply that political efficacy is indeed lower
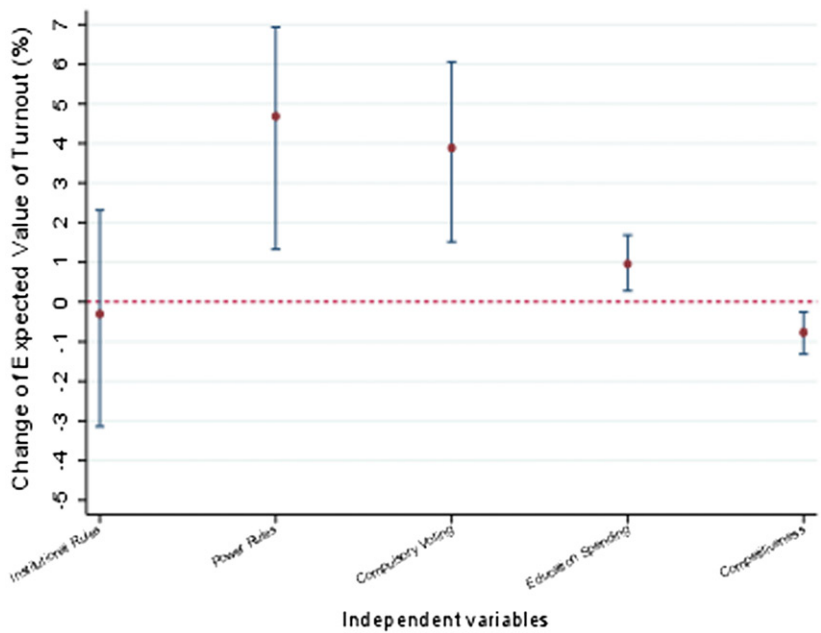
Figure 3. Changes in expected value of turnout (95% CIs).
Note: The simulation is based on Model 4 in Table 2. Holding all other variables at their mean, the value of independent variables changes as follow: institutional rules, power rules (min → max), compulsory voting (0 → 1), education spending and election competitiveness (p25 → p75). High value in election competition denotes a bigger difference in seat shares between government and opposition parties, indicating a less competitive election.

in low-clarity contexts measured with institutional rules, but it is not affected by power rules. Given that there are a number of ways to measure political efficacy (e.g. Gil de Zúñiga *et al.* 2017 propose 11 survey questions), our analysis is useful but has serious limitations, since we relied on only one available survey question.

Regarding the control variables, compulsory voting has a statistically positive impact on turnout. Compulsory voting laws increase turnout by about 3.7% among the voting age population, and 3.8% among registered voters in Models 3 and 4 in Table 2. To account for differences in the degree of the sanctions and the rigidity of the rules within compulsory voting systems, we also ran the analysis using a more elaborate operationalisation of compulsory voting, and find that strongly enforced compulsory voting laws increase turnout (see Table A6 in the Online appendix for a complete set of results).[11]

The coefficient of the level of democratic freedom in an election does not reach levels of statistical significance across both measures of turnout. The measure for election competitiveness has a negative relationship with

turnout, which is statistically significant only in Model 4. Because higher values of electoral competition denotes bigger gaps in seat share between governing and opposition parties (which represents less competitive races), we expected a negative association. In other words, turnout tends to increase when the electoral race is competitive.

The measure of economic performance is not statistically significant, and the signs are indecisive across all models in Table 2. Given the theoretical contradiction on the role of the economy in turnout (Radcliff 1992), this null finding is in line with what most studies have reported (i.e. Blais 2000; Blais and Dobrzynska 1998; Dettrey and Schwindt-Bayer 2009; Fornos et al. 2004).

Surprisingly, the level of economic development, measured as GDP per capita appears to have mixed effects across different models. In the dynamic models (Models 3 and 4), our finding is similar to Dettrey and Schwindt-Bayer's (2009), in that it is statistically significant when turnout is measured as a percentage of registered voters, but insignificant when turnout is measured as the percentage of voting-age population. However, the static analysis (Models 5 and 6) yield statistically significant negative effects of economic development. Given that these models are static, we conclude that voter turnout is lower in more economically developed countries, which is in line with the findings of Gray and Caul (2000). Spending on education is partially supported only in Model 4, suggesting that the results of education spending on turnout is not robust across the rest of the models. Finally, the size of the country operationalised by its population does not affect turnout rates.

In order to show the substantive effect of our key independent variable along with some important control variables, we present the quantity of interest by using the Clarify simulation technique (King et al. 2000). The simulation is based on Model 4 in Table 2. Figure 3 shows the first difference of expected values of voter turnout. The y-axis is the changes of expected values of turnout as percentage and the x-axis represent the five key independent variables used in the simulation (i.e. institutional rules, power rules, compulsory voting, education spending and election competitiveness). The vertical line for each independent variable is 95% confidence intervals and the dot represents the point estimate of the first difference value in turnout. The clarity of responsibility measured as power rules increase voter turnout and this effect is statistically significant as the confidence intervals do not cross the zero line in the middle of the figure. More specifically, once we change the value of power rules from 0 to 5 holding all other variables at their mean, we would expect an increase in turnout rate about 4.7%. However, the 95% confidence intervals of the institutional rules include zero, so increasing its value from 0 to 4 does not affect turnout rates.

The simulation results are consistent with the OLS results in Table 2. Overall, it is confirmed that voters are less impeded in their attempt to discover 'who is responsible' for policy outcomes by the static institutional arrangements; and thus, the institutional rules do not affect voters' decision calculi, which determines whether a voter goes to the poll or not.

Compulsory voting laws appear to increase turnout rates by about 4%, holding all other variables at their mean. Indeed, the 'law' has power to enforce people to turn out. When we change the value of education spending from 25 percentile to 75 percentile, it boosts the turnout by 1%, which implies that education helps people to engage in political activities, including voting. As expected, when the election race becomes less competitive (for instance, changes its value from 25 to 75 percentile), it decreases turnout by about 0.9%. All of these effects are statistically different from zero because the 95% confidences intervals of the compulsory voting, education spending, and election competitiveness do not cross the zero line.

Discussion

Comparative studies of voter turnout have examined how a variety of institutional contexts such as electoral systems, party systems, and government structures affect voter turnout across countries. Although clarity of responsibility is widely considered as an important institutional context (Dassonneville and Lewis-Beck 2017; Powell and Whitten 1993; Tillman 2008), it has, until recently, been largely neglected in voter turnout literature.

This article takes a first step towards depicting how voters' ability to discern 'who is responsible' for policy outcomes affects their decision on whether to vote or abstain. The concept of clarity of responsibility suggests a coherent theoretical framework and permits an unambiguous prediction in that low clarity of responsibility tends to increase abstention. We have provided three theoretical explanations for this outcome. First, high clarity of responsibility reduces the cost of voting by making retrospective voting more straightforward. Second, high clarity increases the decisiveness of the election, as voters can expect specific policy changes based on the election outcome. Third, high clarity helps voters have a greater sense of political efficacy. All in all, for these reasons, high-clarity contexts increase voter turnout.

Using time-series cross-sectional data from 34 OECD countries from the 1960s, we found that in general while power rules (the cumulative measure of single-party government, majority government, limited number of parties, closed economy, and stable cabinet) have a significant positive effect on turnout, institutional rules (the cumulative measure of

majoritarian electoral system, unitary state, no dual executive, and stable democracy) do not. However, the individual-level analysis (using EES 2009 and 2014) on political efficacy portrays different results. Political efficacy appears to have a positive association with institutional rules, but not with power rules.

At the aggregate level, the puzzle of why institutional rules do not matter while power rules affect electoral behaviour can be further explained. On the one hand, the formal laws and institutions pertaining to elections in each country tend to remain fixed across many electoral contests. Due to their longevity, voters are able to assimilate the institutional rules of their country. Through time they develop appropriate heuristics that allow them to minimise information costs about the electoral process regardless of institutional structure. Similar heuristics allow voters to discern probable changes in terms of policy regardless of institutional structure.

On the other hand, the characteristics of the government formed after an election have a high likelihood of changing in each electoral contest. They form the dynamic component of clarity of responsibility (power rules). As they change much more frequently than their counterpart, voters are not socialised within the context of a particular set of power rules and therefore cannot develop heuristics as in the case of the institutional rules. So, the dynamic component of clarity of responsibility affects the level of voter turnout by influencing the cost of voting, electoral decisiveness, and political efficacy.

However, the role of clarity of responsibility on political efficacy should be further investigated. While our theory is partially supported, our naive test is based on limited data (only two elections and nine countries), a weak proxy of political efficacy, and limited variation in the key independent variable, so our finding is rather inconclusive. An individual-level research design, with a more nuanced measure of political efficacy, and over a longer period of time will be necessary in order to reach more conclusive results.

The findings of this article contribute to our understanding of institutions and voting behaviour in two ways. First, although the existing literature has informed us that clarity of responsibility conditions voters' ability to hold political leaders accountable for policy performance, it had not considered abstention as a viable option. Our finding fills this gap, showing that clarity of responsibility affects not only vote choice but also the levels of voter turnout. As stated by Silva and Whitten (2017: 89), '[C]larity of responsibility has the potential to travel beyond economic voting. What other important policy dynamics might be influenced by variations in clarity?' Our research is one example that pushes the research on clarity of responsibility beyond the reward–punishment

mechanism of voting, thereby enlarging the scope of debate about the consequences of clarity of responsibility for political participation.

Second, our research contributes to the understanding of the two different attributes of clarity of responsibility. The static institutional components of clarity of responsibility, such as electoral systems, form of government (e.g. unitary state or dual executives), and levels of democracy do not affect turnout. However, the dynamic components of clarity of responsibility, like minority government, coalition government, the number of parties, cabinet formation, and economic openness that often changes over time, have statistically and substantively meaningful effects on electoral turnout. This result is in line with the findings of Hobolt et al. (2013) and Dassonneville and Lewis-Beck (2017), although their dependent variable is vote choice. This implies that future studies should take careful steps in theorising and testing the role of clarity of responsibility on various political phenomena by taking the two different kinds of characteristic of the variable into account.

Studies of voting behaviour should pay explicit attention to whether they are accounting for voter turnout in contexts of high or low clarity of responsibility. Though a few research papers have examined the effects of a divided government (Carlin and Love 2013) or coalition government (Jackman and Miller 1995; Tillman 2015), our study uncovers that disparity of turnout across advanced democracies is explained, in part, by static and dynamic factors specific in the context of clarity of responsibility. Therefore, future research on turnout should take clarity of responsibility into account.

Notes

1. For robustness purposes, we test the impact of each indicator of this cumulative index and offer the empirical results in Online appendix A3 and A4. See Note 9 for a detailed explanation.
2. For a review on turnout measurement, see Appendix A in Geys (2006).
3. The correlation in the two measures of dependent variable is high, the Pearson correlation coefficient is 0.84 ($p < 0.0001$), indicating that they are very similar, though not identical, measures of turnout.
4. website: http://www.idea.int
5. Dassonneville and Lewis-Beck's measure runs from 0 to 5 because their *institutional rules* is the summative index from five elements.
6. Indeed, Australia, Belgium, Canada, Switzerland, Czech Republic, Estonia, Spain, Great Britain, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia, and Slovenia have not experienced any change in their *institutional rules* measure.
7. Previous studies have used a measure of difference in vote share between the two largest parties (i.e. Blais and Dobrzynska 1998; Kostadinova 2003). In fact, Hobolt and Klemmensen (2006) point to two potential drawbacks of using the two first parties' vote share. For a detailed analysis, see note 10 on

page 13 in their unpublished manuscript. Although we follow Hobolt and Klemmensen's suggestion, we also run our models by using the difference in vote share between the two largest parties for a robustness check. This test verifies that our results are robust across all models. *Institutional* r*ules* do not affect turnout rates, but there is a positive and statistically significant association between p*ower rules* and voter turnout. The results of this additional test are in Table A5 in the Online appendix.

8. The FE models drop the time-invariant variables such as compulsory voting from the model.

9. None of the indicators of i*nstitutional* r*ules* has reached a conventional level of statistical significance when we use VAP as a dependent variable (A3). In the case of REG, majoritarian electoral systems and no dual executive appear to increase voter turnout (A4). This second finding follows our theoretical expectations as both the existence of a majoritarian system (Hellwig and Samuels 2008) and the lack of a dual executive (Dassonneville and Lewis-Beck 2017) increase clarity of responsibility. On the other hand, existing literature on voter turnout seems to portray them as institutions with opposite effects. Upon closer examination of this literature, it became apparent that the two institutions have not been included in the same models. Specifically, scholars have predominantly included the electoral system (majoritarian/proportional) rather than the regime type (presidential/parliamentarism). Following this trend, the large meta-analyses on this literature do not discuss regime type (Cancela and Geys 2016; Geys 2006; Stockemer 2017). A possible explanation for this is the high correlation of parliamentarism with proportional representation and presidentialism with majoritarian electoral systems. Given our results, though, as well as the growing scepticism about the robustness of the effects of PR on turnout, we believe that considering the electoral systems and regime type as having separate effects would be a step forward in understanding voter turnout. With regard to individual indicators of p*ower rules*, three variables (majority government, limited number of parties and stable cabinet) affect VAP turnout (A3), while only two (majority government and limited number of parties) appear to affect REG turnout (A4).

10. To measure political efficacy, we used 'The national parliament takes into consideration the concerns of ordinary citizen' guided by Blais (2014). Blais (2014) measures external efficacy by using the question 'How much do you believe the federal government cares about what people like you think?' Similarly, Zuniga *et al.* (2017) measure government political efficacy using a question 'my government makes decisions based on what citizens want'.

11. For this analysis we only use the subsample of cases in which compulsory voting laws are in effect. This variable was acquired from V-Dem, and the cases are coded 1 for no sanctions, 2 for light sanctions, and 3 for heavy sanctions. The analysis reveals that heavier sanctions lead to significant increases in voter turnout. This relationship is robust in Model 1, Model 2, and Model 4. The results are consistent with Dettrey and Schwindt-Bayer (2009).

Disclosure statement

No potential conflict of interest was reported by the author(s).

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