

**A Comparative Cross-National Study of Voter
Turnout and Electoral Systems, 1972-2005**

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Abstract

Why is there so much variation in voter turnout? Using data from SUNY-Binghamton's Institutions and Elections Project, I constructed a model to test my hypothesis that having a proportional representation electoral system would boost voter turnout. I looked at national lower-house elections in countries from every continent between 1972-2005. I found that, when controlling for the effects of GDP per capita, level of democracy, and level of competition, voter turnout is not significantly higher in proportional representation systems when compared to other types of electoral systems, except for mixed systems. Also, I found that a higher level of competition reduces voter turnout, as do higher levels of civil liberties.

Introduction

In some countries, voting is considered an expression of patriotic duty and civic service. This outlook may seem a bit simplistic in its view of why people should vote. While carrying out one's duty to one's country may be a motivating factor to vote, there are many variables that go into deciding to vote, and those variables differ by country and may change over time.

Voter turnout, the percentage of the eligible voting population who voted in a given election, varies greatly by country. Some democracies, like the United States, which prides itself as a bastion of political freedoms, rarely has a voter turnout over 70%, while many European democracies will regularly have national voter turnout in elections over 90%. What causes such a discrepancy? Is voter turnout simply a function of electoral system? There are many variables that can influence voter turnout, and this is the research question driving the study conducted in this paper.

Electoral theory states that having a proportional representation electoral system will, by itself, raise voter turnout. Support from empirical evidence of this theory has varied. This

question is important because it seeks to improve on the current state of knowledge that exists for electoral comparisons. There is an ongoing debate over which type of electoral system is better. The aim of this paper is not to take a side in the side, but to merely provide data and information to carry this debate forward and maybe into new directions. This research will better help us to understand what factors influence people to vote or not to vote.

Literature Review

Why do some countries have a higher voter turnout than others? Is it simply a factor of a country's electoral or are there other variables that must be taken into account when explaining variation in voter turnout across countries. There is a general consensus that employing a proportional representation electoral system will increase voter turnout. While this theory is generally accepted, it is not strongly backed up by empirical evidence (Endersby and Kriekhaus, 2008; Blais and Aarts, 2006). Blais et al. (2006) go further by stating that even though research shows that proportional representation fosters voter turnout, like the theory states, political scientists still do not know why this particular electoral system drives up voter turnout or if having a proportional representation system in itself boosts voter turnout by a statistically significant margin. The main obstacle in fully answering this question is not lack of research, but a lack of research that includes all of the variables. Most of the literature only tests a single variable or a few at a time.

Many studies have been conducted to attempt to identify why it is exactly that an electoral system of proportional representation raises voter turnout. Brockington (2004) attempts to explain the paradox inherent in proportional representation systems. Like the theory states, such a system would drive up voter turnout, but a large party system (multi-party system), which is usually associated with PR systems, theoretically lowers voter turnout. Brockington finds that

a large party system actually increases the propensity of voting. He does not take into account other variables that may have an effect on voter turnout, and he leaves two questions for further research: What is the behavioral source of the higher levels of turnout observed in PR systems, and what goes into forming coalition governments in large party systems? If there is a history of rotating door ruling coalitions that rise and fall seemingly overnight, people may become dissatisfied with their party system and not vote. If that same large party system is stable, people will be more inclined to vote.

Endersby et al. (2008) critique the current state of knowledge on the subject of voter turnout and electoral systems. Their primary critique is the use of the number of registered citizens who turned out to vote in past studies. They operationalize this by using the number of people who voted out of the total voting-eligible population. They include level of democracy as a variable, using the rankings provided by Freedom House. Like Brockington, they find that electoral systems have a strong effect on voter turnout, especially PR systems in fully democratic countries. This effect is diluted, however, in partially democratic countries due to institutional experimentation.

Blais and Carty (1990) examine 509 national elections in 20 western democracies to evaluate the effect of different types of electoral systems on voter turnout. They find through their research that countries with proportional representation systems have higher voter turnouts that cannot be explained by several control variables, such as level of suffrage, ballot systems, level of federalism, and the effect of separate and direct presidential elections. They also find that voter turnout in general has risen over the past century. Of the 20 countries that they examine, 15 of them are European nations. The other five are Israel, Japan, Canada, Australia, and New Zealand. The research is limited to include only western democracies and does not

look at the effect of electoral systems on voter turnout in whole geographic regions including South America and Africa.

Blais and Dobrznska (1998) examine 324 national lower house elections and test three variables' relationship with voter turnout: socio-economic environment, institutions, and party system. Like Endersby et al. and Brockington, they find that electoral systems have a positive effect on voter turnout and are most prominent in a small, industrialized democracy (which they operationalized with Freedom House rankings) that is densely populated with decisive elections, a voting age of 21, compulsory voting, and a PR system. No country they examine fits all of these characteristics, but the closer a country is to fitting this description, the higher the voter turnout. They also find that socio-economic environment has a more prominent effect than they had originally thought, which leaves the possibility of future research.

Blais (2001) compares various types of electoral systems using both empirical and normative evidence. Blais stresses that the goal of this study was not to label one electoral system as better than another, but simply to present the pros and cons of the varying types of systems. There is significant debate over which type of electoral system is truly the most representative, but Blais concludes that all of the systems are overwhelmingly similar, and the main difference stems from how one defines democratic representation.

Nishikawa and Herron (2004) examines the effect of mixed electoral systems, ones that are not quite PR or single-member districts, on party systems. They acknowledge the theory that PR drives up voter turnout. They find that countries with a mixed electoral system have distinctive results from PR and single-member districts and also tend to lead to larger party systems, which Brockington demonstrates actually raises voter turnout.

Geys (2006), in an effort to answer the question of what other variables effect voter turnout, conducts a meta-analysis of 83 aggregate-level studies on voter turnout that includes several variables including socio-economic status, political variables, and institutional variables. His results show that there are a number of variables that have an effect on voter turnout. Like the other research has shown and theory states, electoral systems have a strong effect on turnout. He also finds that turnout is highest when the population is smaller and campaign expenditures are higher. Geys recommends that a core model of variables be constructed to further test the effect of those variables on voter turnout. Like the conclusions of Geys (2006), Knight and Marsh (2002) give direction for future research in selecting variables to test when studying national elections.

In addition to the research on the effect of electoral studies, there is research looking directly at other variables and their effect on voter turnout. Blais, Massicotte, and Yoshinka (2001) do a comparative study of election laws by comparing the laws governing the right to vote in 63 countries. What they find is that former British colonies closely follow Britain when writing their own election laws and, more important to the research of this paper, that most countries with a PR system allow non-citizens to vote and do not have residency requirements, which can boost voter turnout.

Powell (1986) conducts a comparative study of turnout in American elections. Powell reaches two conclusions. The first is that the American Party system and voter registration laws severely limit voter turnout, by as much as 13-14%. The second conclusion is that American political attitudes actually promote voting, but not by nearly enough to compensate for the institutional variables. Furthermore, he links socio-economic status and education to voting and suggests that expanding the electorate could raise voter turnout. While this data is somewhat

outdated and registration laws have changed, voter turnout in the United States remains significantly lower than in other industrialized democracies, and the findings should be tested more broadly.

Southwell (2008) examines non-institutional factors that effect voter turnout. She looks at three variables: powerlessness, meaninglessness, and cynicism. Powerlessness and meaninglessness have negative effects on voter turnout, but feelings of cynicism actually work to counteract the effects of the other two variables. Southwell relates her findings to voter turnout in the United States. She says that Americans have begun to feel less empowered by their ability to vote, and they feel that their vote has less meaning. This has brought down voter turnout, despite the fact that Americans have become more cynical towards elected officials. This research shows that non-institutional factors can have a significant effect on voting behavior and turnout.

There is a lot of consensus in the literature on voter turnout, but there is also a fair amount of variation. Theory states that a proportional representation electoral system will boost voter turnout, though it is not strongly backed up by empirical research. Almost all of the relevant literature finds that a PR system raises turnout, but other variables must be included. The problem is that there is no accord on what variables to look at and test when comparing electoral systems, party systems, and election results across countries. This paper will seek to answer what variables do indeed have an effect on voter turnout and to explain variation in voter turnout in a comparative way across several countries.

Hypothesis

Why is there so much variation in voter turnout across different nations? What causes this phenomenon? There are many factors that go into voting behavior and national voter turnout; these include level of Gross Domestic Product (GDP) per capita, level of voter trust in

government, level of democracy, level of competition, and electoral systems. However, all of these variables could present themselves in any electoral system and have varying effects. What effect then does the type of electoral system itself has on voter turnout? That is the research question behind this study.

Electoral theory suggests that using a proportional representation (PR) electoral system will, by itself, boost voter turnout. Despite this theory, the current empirical evidence on the subject does not fully support its main assumption. There has been work carried out on the effect of electoral systems on voter turnout, but it has been inconclusive at best, mostly due to the fact that there has yet to be a study that controls for all the variables. I expect to see that having a proportional representation electoral system will have a significant and positive effect on voter turnout when controlling for variables such as level of real Gross Domestic Product (GDP) per capita, level of competitiveness in elections, and level of democracy.

There are of course other plausible hypotheses to explain cross-national variation in voter turnout. Electoral system could have nothing to do with voter turnout at all. Voter turnout could be a function of likeability of a candidate, pressing national crises or times of distress, or any of the other variables that have previously been mentioned.

A country that uses a proportional representation electoral system can expect to have a higher voter turnout when controlling for variables such as level of GDP per capita, level of freedom (democracy), and level of competitiveness.

Data and methods

My units of analysis are countries from all over the world, including North and South America, Africa, Europe, Asia, the Middle East, Australia, and Oceania. The countries included vary by levels of democracy, level of GDP, type of electoral system, population, ideologies, etc.

The countries in this data set are representative of the countries in the world and will yield solid results. I have looked at national legislative elections for lower houses of national legislatures from 1972-2005. The independent variables are the type of electoral system used, level of political rights and civil liberties, level of competitiveness, and level of GDP per capita. The dependent variable is voter turnout, the percentage of eligible voters who voted in elections for their respective national lower house of the legislatures.

In order to test my hypothesis, I will gather data and operationalize my various variables. To test whether a proportional representation electoral system raises voter turnout by itself, I will first look at the differences in average voter turnout by electoral system. In my data set electoral system is divided into four types: plurality (first past the post), majority, proportional representation, and mixed systems (combination of PR and either majority or plurality). This will show me whether or not countries with proportional representation systems have higher voter turnout without looking at any other variables other than type of electoral system.

I will use linear regression to control for the other variables to further test that when other factors that might influence voter turnout are removed, having proportional representation will still raise voter turnout. I will look at voter turnout in legislative elections, which is defined as the percent of eligible voters voting in a legislative election. The data for voter turnout was collected by researchers at the State University of New York-Binghamton for their Institutions and Elections Project.

One of the variables that I will be controlling for is the country's Gross National Product (GDP) per capita, which is the total sum of goods and services produced in a given country over the course of a given year, then divided by the country's population. General theory states that the level of GDP per capita is correlated with the level of democracy, and that the more affluent

a nation is, the higher the level of democracy in a country is, which in turn can affect voter turnout. There is a generally accepted threshold of USD\$5,000 per capita for a country to be democratic. There are exceptions of course, such as India, which is a very poor country, and countries like Saudi Arabia, which is one of the richest countries, but one that is not free. The data that I will be using comes from UN (United Nations) Data, which compiled data for 243 countries or areas from a time period between 1970 and 2007, and expressed the data in current-year United States dollars.

I have operationalized the level of democracy two ways, using data collected by Freedom House, an organization which produces annual rankings of the world's nations by level of democracy. A rating of one or two brings a ranking of free; a ranking of three or four brings a ranking of partly free; and a ranking between five and seven brings a ranking of not free. Freedom House derives the rankings from two measurements: political freedoms (on a scale of 1-7) and civil liberties (on a scale of 1-7) from 1972 to the present. I will use the same codification and divisions that Freedom House uses. While this measure may be considered slightly arbitrary, Freedom House is generally accepted as unbiased and its data is considered reliable, with many scholarly journals routinely citing the organization as a source.

Competitiveness is another variable that can affect voter turnout. If a voter is sure a certain party or candidate is going to win, even without his or her single vote, the voter may decide not to vote. On the other hand, if there are high levels of competition, a voter may feel that his or her vote might make a difference; therefore, the voter may be more likely to vote. For this paper, competition in legislative elections is defined as such: no one party wins more than 90% of the seats in the lower house of the legislature. This data was collected and operationalized by the Institutions and Elections Project at SUNY-Binghamton.

To test my hypothesis, I will use several statistical tests. These tests include chi-squared tests to test for the strength and direction of the relationships, as well as to test the null hypothesis. I will also have to control for several variables in order to fully see the effects of the one variable that I will be focusing on (electoral system). I will also calculate figures like R^2 to further test the relationship between the two variables and to see how much of voter turnout can be explained by having a PR system. I will also be looking at descriptive statistics of my variables, notably the different types of electoral system.

Results and Analysis

The first step in testing the hypothesis was transforming the main independent variable, the type of electoral system, into four separate variables: plurality systems, majority systems, proportional representation systems, and mixed systems. I then split my data set by these four new variables and ran descriptive statistics on them, the results of which are displayed in table 1.

Table 1: Average Voter Turnout by Electoral System

Type of Electoral System	N	Minimum	Maximum	Mean
Plurality	40	13.27	99.87	69.02
Majority	87	2.7	100	73.94
PR	204	29.6	96.5	73.78
Mixed Systems	129	14	102.6	66.12

Without controlling for any of the other the independent variables, we see that proportional representation and majoritarian electoral systems have the highest mean voter turnouts, averaging 73.78% and 73.94%, respectively, of the eligible voting population participating in national lower-house elections. Plurality and Mixed electoral systems have lower mean voter turnouts, averaging 69.02% and 66.12%, respectively. The results of the

descriptive statistics are a little surprising because it was expected that countries with proportional representation electoral systems would have higher levels of voter turnout based solely on the type of system, but that is not the case.

After running the descriptive statistics, I ran linear regressions to see how much of the variation in voter turnout could be explained by having a proportional representation system.

Now having these findings, I expanded on them by controlling for the effects of my other independent variables: level of competitiveness, GDP per capita, and level of political freedoms and civil liberties, as well as electoral system itself.

The first regression that I ran was to take proportional representation out as a constant to test whether there were statistically significant differences between the other types of electoral systems and proportional representation. It is a model of a series of dichotomous variables with proportional representation systems as the left-out category. The initial results both back up and contradict my hypothesis. Using this model, I calculated an adjusted R^2 of .009, which means that only less than one percent of the variation in voter turnout can be explained solely by having a proportional representation electoral system. Additionally, the difference in voter turnout between proportional representation systems and majoritarian systems and plurality (first past the post) systems is not statistically significant.

Table 2: Regression Model 1

Type of Electoral System	B	Std. Error	Significance	Adj. R^2	F	N
PR (Constant)	71.397	0.768	0.000	0.009	3.667	877
Plurality	-2.382	3.121	0.446			
Majority	2.543	2.19	0.246			
Mixed Systems	-5.275	1.851	0.004			

However, the variation between proportional representation systems and mixed systems is statistically significant at the .05 level of confidence. Voter turnout is reduced in mixed systems by 5.28%. Voter turnout in majoritarian systems is 2.38% less than voter turnout in proportional representation systems, though the difference is not statistically significant. The results from this regression do not give us the whole picture because they do not control for the other independent variables.

I then ran a second regression, which—in addition to controlling for the effects of the same three electoral systems as before—also controlled for the effects of political rights, civil liberties, level of GDP per capita, and level of competitiveness. Again, my adjusted R^2 was low (.084), so 8.4% of the variation in voter turnout can be explained by these independent variables.

Table 3: Regression Model 3

Type of Electoral System	B	Std. Error	Significance	Adj. R	F	N
PR (Constant)	90.552	3.356	0.000	0.084	10.917	758
Plurality	-5.76	3.34	0.085			
Majority	0.518	20224	0.816			
Mixed Systems	-5.349	1.819	0.003			
GDP	3.63E-005	0.000	0.662			
Competition	-15.424	2.197	0.000			
Political Rights	1.013	0.806	0.209			
Civil Liberties	-2.372	0.926	0.011			

Like the last regression, there was not statistically significant difference in voter turnout between proportional representation systems and majoritarian systems. Also, the differences in

voter turnout between proportional representation systems and plurality systems, as well as proportional representation systems and mixed systems, are statistically significant. With the added independent variables, we can expect voter turnout in plurality systems to be 5.76% lower than proportional representation systems (though again not a statistically significant level) and 5.35% lower than mixed systems.

The level of GDP per capita has no statistically significant effect on voter turnout, which contradicts the general theory that the richer a country is the more democratic it is; this would lead one to think that it would push up voter turnout. While GDP per capita may affect the level of democracy, it does not appear to have the same positive effect on voter turnout. In fact, after calculating the chi-square, which measures the strength of relationships between two variables, we see that there is no correlation between GDP per capita and voter turnout.

The level of political rights also has no statistically significant effect on voter turnout, which also is counter-intuitive to conventional thought. One would think that the higher the level of political freedoms, the higher the level of voter turnout, but that is not the case. On the other hand, the level of civil liberties does have a statistically significant negative effect on voter turnout, lowering it by 2.37%, significant at the .05 level of confidence.

Like I mentioned earlier, general theory states that level of GDP per capita is related to the level of democracy. After calculating a Pearson's r of .539, I found that the level of political rights and civil liberties has a moderately strong correlation with the level of GDP per capita, significant at the .01 level of confidence. This means that the higher the level of GDP per capita, the higher the level of civil liberties and political freedoms and vice versa.

The level of competition in lower-house elections has a statistically significant negative effect on voter turnout, lowering it by 15.42%. The more competitive the election is, the lower

the voter turnout. This relationship is a little counter-intuitive. A competitive election is defined as one in which no one party wins more than 90% of the seats in the lower house. This relationship might be explained by one-party dominant systems or by dictatorships where voting is mandatory and there is only one choice to choose from, which would artificially drive up voter turnout.

Since both the level of competition and level of civil liberties had significant effects on voter turnout, I calculated a chi-square to determine the strength of the relationship and found them to have a moderately strong correlation, significant at the .01 level. This means that the more competitive the election, the more civil liberties for voters to enjoy and vice versa.

Conclusions

Why is there so much variation in national voter turnout? Is it a function of electoral system alone, or are there other factors and variables that must be taken into account? The literature and research on this subject is inconclusive, and there is much variation in their results.

General theory states that having a proportional representation electoral system will, by itself, raise voter turnout, but the empirical evidence does not fully back up this theory. There are other factors that influence voter turnout, including level of competitiveness, level of democracy, level of GDP per capita, and type of electoral system.

In general terms, majoritarian systems and proportional representation electoral systems have the higher mean voter turnout, followed by plurality systems and mixed systems. When controlling for the effect of just the type of electoral system, voter turnout is statistically significantly lower in mixed systems, but not in majoritarian systems or plurality systems.

When controlling for the effects of the other independent variables, voter turnout is lowered even more in plurality systems and mixed systems; it is also lowered by higher levels of

competition in elections and higher levels of civil liberties. Again, majoritarian systems do not have statistically significantly lower voter turnout, and maybe contrary to conventional wisdom, level of GDP per capita and level of political rights do not have statistically significant effects on voter turnout.

What this means in terms of my original hypothesis is that having a proportional representation system will not, by itself, mean that voter turnout will be higher. The mixed results of this research just add to the already inconclusive state of the research and literature that exists on this topic. This research is another example of empirical evidence not supporting the general, accepted theory that proportional representation will raise voter turnout.

There is still a lot of research to be done in this field. There is still no definitive reason why proportional representation systems have higher rates of voter turnout. Other variables and factors need to be identified, operationalized, and tested to further explore this question. Also, we saw that there is a moderately strong correlation between levels of GDP per capita and level of civil liberties and political freedoms, but that relationship does not translate into higher levels of voter turnout. Why is there such disconnect? Higher levels of rights and liberties should mean higher voter turnout. This is an interesting question that could be taken up and explored more thoroughly.

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