

**The Effect of Political Satisfaction on Voting Behavior: Evidence from the Netherlands**

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**Abstract**

The main question this article aims to answer is how political satisfaction influences voting behavior of the Dutch electorate. I also investigated which determinants of political satisfaction are most important. I applied an individual fixed effects approach to isolate unobserved time-invariant variation in characteristics in a sample of the Dutch population. To assess this question, I will make use of household panel data from the Dutch LISS database provided by CentERdata. My findings suggest that political satisfaction is positively associated with the chance of voting for reigning parties and that it is negatively associated with the chance of voting for old-established parties with the opposite ideology of the reigning party. My results show that government satisfaction has the biggest influence on voting behavior. I also investigated a possible taboo on extremist parties. My results indicate that this taboo is probably present, but no firm conclusions can be drawn with certainty.

## 1. Introduction

During election periods, politicians do everything to get your vote. They can be seen everywhere, on social media, on television during party leader debates, but also in the streets where they distribute flyers. The political orientation of a party roughly can be divided into four areas: Left-Conservative, Left-Progressive, Right-Conservative, Right-Progressive. The Left-Right scale focusses on topics about money. For example, about taxes, redistributions, free-market economy, the size of the government and other economic topics. The Progressive-Conservative scale focusses on topics like migration, climate and cross-country cooperation. Right parties are mostly conservative and left parties are mostly progressive, but this does not always have to be. Parties at the extreme ends of the spectrum often have difficulties joining the coalition because of their firm stances. These parties are often very steadfast on the field of migration, climate or redistribution, making it extremely difficult to reach compromises and to eventually reach a coalition agreement.

It is very important for politicians to know how to reach their potential target audience. What drives people to vote for a certain party? What are the characteristics of the different voters? Do feel people dissatisfied about the current politics and therefore vote for a party which is not part of the cabinet? Do people vote on a certain party because of their stances on for example migration and redistribution? Do people vote on a party because they like the leader? These are all important questions in order to understand the differences and motives of the different groups in the electorate.

In this paper, I investigate the effect political satisfaction on voting behavior. I define it as an aggregated score of satisfaction in government, parliament, politicians, political parties and democracy. These are all very important determinants of one's political satisfaction and it could have major impact on people's voting behavior. Political scandals, for instance, can greatly reduce trust in political parties, politicians and democracy. If certain politicians are involved in these scandals, it can have very negative consequences for the number of votes they will receive in the next election. People who are very dissatisfied in the government and the current form of democracy would perhaps be more likely to vote for parties that want to incorporate drastic changes. People satisfied about the current politics, however, are maybe more likely to vote for parties who reigned the country in the last period. They are probably happy with their personal situation and with the parties in power. I will also research the disaggregated satisfaction scores to find out what the source of dissatisfaction is and how this translates to one's voting behavior.

Political satisfaction can be a very important driver of voting behavior, but this link has

not been made before in existing literature when researching politics in the Netherlands. Therefore, this paper fills a gap that has not been filled yet by answering the following question: *“What is the effect of political satisfaction on voting behavior of the Dutch electorate?”*

I expect a negative relationship between political satisfaction and the likelihood to vote for, especially, old-established parties who do not reign the country. Over the past two decades, the Dutch cabinets have been characterized by a center-right right parties. As a left-wing party, the PvdA (Labor Party) has been a regular member of cabinets, but since the 1998 elections, no left-wing party has won the election. Therefore, I expect political dissatisfied people to be more likely to vote for left-wing parties like the SP (Socialist Party), the PvdA and GL (Green Left Party) and political satisfied people to vote for a right-wing reigning party, like the VVD (Liberal Party).

Because of the potentially many observable variables which could bias the estimates and the lack of more extensive data, this will be a correlational study. I will, however, use a smart research method in order to achieve the most accurate estimates possible with the available resources.

In the Netherlands, the PVV (Freedom Party) is often already ruled out for the formation of a new cabinet by many parties before elections have taken place. The party was founded in 2006 by Geert Wilders, who separated from the VVD after a conflict and founded his own party which eventually became the PVV. They want to stop Islamization in the Netherlands and have a nationalistic signature. Even though they have not yet been part of a coalition, the PVV is always fighting to become one of the largest parties in the parliament. They have a large following in the Netherlands, which may be logical when looking at the general satisfaction of migration policy by Dutch citizens. A lot of Dutch people would like to see less migration because of the already dense population, the additional crime and cultural differences. However, over the past two decades, the net immigration towards the Netherlands was 716,875<sup>1</sup>, which causes a lot of frustration in the Dutch population. The policy with regards to reception and integration of refugees and their return is generally evaluated fairly positively, but Dutch people are dissatisfied with the actual implementation of the return and integration policy<sup>2</sup>. The PVV is also known for its aversion towards the established political order, they accuse them being guilty of backroom politics and express their dissatisfaction about the current

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<sup>1</sup> Retrieved from Centraal Bureau voor de Statistiek (2021). See also Appendix A for a visual representation of the net immigration trend over the past two decades.

<sup>2</sup> Retrieved from Postmes et al (2018)

system.

Far right parties (in terms of culture and immigration) such as the PVV are often typed as populists. Many people associate this with something negative. It is not without reason that PVV leader Wilders has been protected for over more than a decade due to (assassination) threat. Many people associate PVV voters with being low educated or with being racist. The PVV mainly attracts people from lower educational levels and repels the higher educated.<sup>3</sup> There is could be a stigma on this party, which makes it difficult for PVV voters to speak freely about their vote in the last elections. The sub-research question asked is:

*“Is there a taboo on the PVV and how does this affect the electorate?”*

I will be using the Dutch LISS (Longitudinal Internet Studies for the Social Sciences) database provided by CentERdata. The representativeness of the dataset has been endorsed by, among others, the Erasmus Happiness Economics Research Organization & Institute of Leadership & Social Ethics (2018) and LISS Data (2018). Hence, I would expect no differences in voting outcomes when comparing the dataset to reality if this dataset is truly representative.

These endorsements could be questioned. It is an address-based survey, so in the first place, there is no selection bias. However, it is the participants' individual choice to accept the participation. There could be unobservable reasons why people refuse to participate, so that the survey is still not representative if a certain target group disproportionately refuses to participate. If I find consistent, big significant differences in voting shares between the dataset and the real election results, it may be a sign that the taboo is present, but no firm conclusion can be drawn. In the survey, respondents can fill in that they do not prefer to say which party they voted for. PVV voters may be more inclined to fill in this option or to lie about their party choice. Hence, this part of the paper can be seen as a steppingstone for new, more extensive studies in this area.

The structure of this paper is as follows: in section 2 I will cover a general overview of the political system of the Netherlands. Next, in section 3, I will cover insights of existing literature concerning voting behavior, political extremism and taboos on certain political parties. In section 4, I will provide information about the dataset and response values. In section 5, I will cover the empirical strategy I will be using to answer the research questions. Subsequently, in sections 6, 7 and 8, I will provide results, corresponding conclusions and a discussion including limitations to this research and recommendations for future research.

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<sup>3</sup> Retrieved from Van Dalen (2021)

## **2. The Dutch political system**

The Netherlands is a parliamentary constitutional monarchy. Formally, the king is the head of the state, but the country is lead under the responsibility of the ministers. The king's job is therefore mainly formal, and he does not interfere in making decisions. Previously, the king still had a task in forming cabinets, but since 2012 this has been entirely the task of parliament.

The Dutch parliament consists of two governing bodies: The Senate (in Dutch: Eerste Kamer) and the House of Representatives (in Dutch: Tweede Kamer). Both are formally equal, and have (co-)legislative and supervisory tasks, but the House of Representatives is seen as much more important. The cabinet usually has the initiative in making laws, but other members of the House of Representatives can also propose laws. If these laws are accepted by the House of Representatives, they will then be passed on to the Senate where they are checked again. If a law is accepted by both chambers, it will come into effect. The 150 members of the House of Representatives are chosen directly via elections, usually every four years. The 75 members of the senate are elected by the members of the twelve Provincial Councils and three Electoral Colleges from the Caribbean part of the Netherlands. The Senate is more remote from everyday politics, also because they are not directly chosen by the electorate. Lately, some critical questions arise on whether it might be better to disband the Senate.<sup>4</sup>

The Dutch House of Representatives is characterized with a lot of different political parties. In the elections of 2006 and 2010, 10 different parties ended up in the House of Representatives and in the elections of 2012 and 2017 these numbers were 11 and 13, respectively. In the election of 2021, 17 different parties ended up in the parliament (this number even became 18 due to an internal conflict at FvD and a subsequent split-off). Sadly, LISS does not provide data (yet) about this last election period. The number of parties in the Dutch parliament is usually much larger than the number of parties in other countries. This fragmented characteristic makes it very interesting to investigate Dutch politics. In Appendix B, a short overview is shown of the political parties in the Dutch parliament, including their place in the political spectrum (period 2006-2017).

## **3. Insights from the literature**

### **3.1 Determinants of voting behavior**

Many studies have been conducted on voting behavior, often with a focus on extremist parties. Political systems differ greatly around the world, just like the cultural characteristics of

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<sup>4</sup> See for example Oomkes (2019)

countries, making it difficult to externalize results. For example, the Netherlands is characterized by a parliament with many parties (fragmentated politics), while in England mainly two parties are in charge (Labor Party and Conservative Party), just as in the United States (Republicans and Democrats).

Many people vote on a particular party because they agree with party positions or they feel sympathy for the political leader or party. These are the main determinants of voting behavior. But what makes people agree with certain party positions? Why are people against immigration or in favor of a radical green movement? Why become people left-wing or right-wing minded? The literature provides some interesting insights.

Swank and Eisinga (1999) examined the effects of economic outcomes on party choice in the Netherlands. Their model revolved around a trade-off between equity and economic efficiency. It led to the prediction that right-wing parties benefit from poor economic growth prospects. Their intuition was that the better the growth circumstances are, the more people are willing to sacrifice economic growth for distributive policies.

Crutzen et al., (2020) researched the two common drivers of populist voting: anti-elitism and favoring popular will over expertise. They show that these characteristics of populism are responses to the common people being left behind. This could also be the case for people who vote PVV. They may feel left behind because of the “taking of jobs” by people who are not originally from the Netherlands and the additional criminality

Cohen (2020) conducted a research using panel data from 11 Western European polities. He found that far-right parties attract voters first and foremost by satisfying their demand for substantive policy. Policy-directed considerations dominate voters’ evaluations of far-right parties generally, but considerably more so in countries where far-right parties have a strong vote in the parliament. Far-right parties attract dissatisfied people, but by joining forces with mainstream parties in government, in contrast, far-right parties jeopardize their appeal to politically dissatisfied voters. The PVV is known as a party with a clear vision and has a strong vote in the parliament. Many citizens could therefore vote for PVV because they yearn for clear policy.

Voters’ attitude towards migration is a very important determinant of voting behavior as well. Van der Brug et al., (2000) explained that ideological proximity is the most important predictor of anti-immigration party preference. Van der Brug and his colleagues also explained that voters’ negative attitude towards migrants is the second most important predictor of far-right party preference. They also found that party size has influence on anti-immigration voting; voters tend to have a stronger preference for bigger anti-immigration parties.

Schumacher (2014) found that voters with deviant attitudes or alternative world views are more likely to vote green parties, a result of the fact that the green party has always had the position of a protest party. These people want to see environmental policy radically change and are therefore more likely to vote for green parties like GL This could be the reason that there are often protests from radical groups such as Greenpeace or Extinction Rebellion, which have to some extent affiliation with those sorts of parties.

Still, the causes of political attitudes are largely unknown. Often children learn from the ideology of their parents which eventually makes them to vote on a certain party. Income is also considered as an important determinant of voting behavior. Powdthavee and Oswald (2014) investigated whether lottery winners were more likely to vote for right-wing parties after they won the lottery. This is an interesting case, because there is an element of randomness. People's ideology does not change because they won a lottery. The authors found that lottery winners were more likely to vote for right parties and the larger the win, the more people tilt to the right. They came to the conclusion that money apparently makes people more right-wing.

Another, maybe unexpected, predictor whether someone is more likely to be right- or left-wing minded is whether this person has daughters or sons. Powdthavee and Oswald (2010) show that having daughters makes people more sympatric to left-wing parties and having sons makes them more sympatric towards right-wing parties. Females tend to have a preference for the provision of public goods and they sometimes face female wage discrimination. Children apparently influence their parents as well in their political preferences.

Emmenegger et al., (2015) investigated, among other things, how labor market disadvantage influences voting behavior, having used the same dataset as I will use in this paper. They found that disadvantages increase support for redistribution, reduce internal political efficacy or lower external political efficacy. This translates into support for pro-redistribution parties, vote abstention or support for protest parties.

### **3.2 Taboos on extremist parties**

In the Netherlands, some parties are seen as extreme and some people do not feel free to say that they voted for a certain party. There have been recent studies conducted in other countries as well which found that radical right parties are often stigmatized. Dennison and Mendes (2019) found that all previous radical right parties in both Portugal and Spain had been immediately greeted with negative media coverage and the social stigma of association with extremism. There has been a longstanding taboo on far-right parties because some people associate them with Nazism or fascism. This is also the case in the Netherlands. PVV voters



are often afraid that they will be ignored, and they are angry about that<sup>5</sup>. Political scientist Schumacher mentions that there is a taboo on almost everything that has to do with the PVV.<sup>6</sup> An additional disadvantage is that the party has difficulty attracting top politicians because of the taboo that reigns on this party. The party is often extreme and mainly attracts people from the middle class. Therefore, there are often unqualified people among the party candidates.

The PVV is often associated with racism which is a sensitive topic. This makes it particularly hard to participate in a coalition and thus turn their ideas into policy. Kantar Public conducted a study commissioned by Human which showed that 40% of the PVV voters associate the party with discrimination themselves, but this association was even more present among voters of other parties.<sup>7</sup>

Over the past decades, however, many far right parties have emerged in Europe and in some countries, they have a big vote in the parliament. Approximately half of the Dutch people view refugees as a threat to their security. Slightly less see refugees as a threat to the Dutch norms and values.<sup>8</sup> Hence, a substantial group of the Dutch population thinks that immigration is a big problem, which could explain the growing influence of anti-immigration parties.

Golder (2003) found that immigration has a positive effect on those populist parties. Radical right parties get more votes when the share of migrants is relatively high. The last few decades, Europe faced a lot of immigration of non-western refugees, which had as a result that many far right parties have grown significantly. Because of this, the taboo on these parties would maybe have become smaller over the years.

The connection between political satisfaction and voting behavior has not been made yet, using high-quality longitudinal data from 2006-2017 in the Netherlands. The possible taboo in the Netherlands has not been studied yet as well, using this longitudinal data. Therefore, I contribute to existing literature with examining these topics.

## 4. Data

### 4.1 LISS dataset

To answer this research question, I will make use of the household panel data from the Dutch LISS (Longitudinal Internet Studies for the Social Sciences) database provided by CentERdata. This database consists of 5,000 Dutch households comprising around 7,500 individuals that complete online questionnaires every month. The LISS database contains 10

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<sup>5</sup> Retrieved from Aalberts (2012)

<sup>6</sup> Retrieved from Dohmen (2017)

<sup>7</sup> Retrieved from Human (n.d.)

<sup>8</sup> Retrieved from Kloosterman (2018)

core studies about, among other things, politics, health, work and schooling. They also have a study for background variables like age, occupational status, marital status, etc. which respondents have to fill in monthly. This panel data consists of 12 waves, starting in 2007 and ending in 2020. The LISS database provides very good response rates and includes a lot of variables relevant for my research. It contains variables on for instance, government satisfaction, EU satisfaction, information on respondents' attitudes towards migration and the party the respondents voted for in the last elections.

### **4.2 Sampling design and response values**

The variable on the party a respondent voted for in the last elections is not informative when I combine all yearly waves into one big panel dataset. If an individual voted for a certain party in 2006, for example, this variable will be the same in 2007, 2008 and 2009, and is therefore not relevant. I will be using the effect of within-individual variation of political satisfaction on voting behavior to answer my research question. If an individual's satisfaction changes from 2006 to 2009, this has no effect on the voting behavior in the last elections. For this reason, I decided to only focus on the waves closest after the elections of 22/11/2006, 09/06-2010, 12/09-2012 and 15/03/2017. I used the waves 1, 4, 6 and 10 of the LISS core studies on *Politics and Values* (for more information on the core studies and waves, see CentERdata.nl, n.d., in the reference list). The surveys of waves 1, 4, 6 and 10 on *Politics and Values* were conducted in the periods 03/12/2007-25/03/2008, 06/12/2010-30/01/2011, 03/12/2012-29/01/2013 and 03/03/2017-30/05/2017, respectively.

The waves 1, 4, 6 and 10 contained 6,811, 5,394, 5,732 and 6,263 respondents, respectively. However, not all respondents filled in all four survey waves. I removed these respondents to preserve a constant sample size. It is likely that certain respondents from wave 1 were not present anymore in wave 10, because of the time span of roughly a decade. There were also missing values which drastically reduces the sample size. I.e., if an individual has a missing only once in one of the four time periods, this individual has to be completely removed from the dataset. I will perform two regressions: with and without control variables. The sample size of the regression without controls consisted of 1,225 individuals. The sample size of the regression with controls consisted of 404 individuals. This huge difference has to do with missing values. Because more information is needed in the regression with controls, it is more likely that an individual has a missing value in one of the time points. As mentioned, this greatly reduces the sample size, because I need all the information from the respondents over the entire time span. The remaining respondents provide very high-quality and complete data over a long

period of time. Table 7 (Appendix C) shows only 2 significant differences in voting shares for parties when comparing the population with and without control variables (one of them being significant only at a level of 90%). Hence, the two samples are fairly comparable with respect to the voting outcomes.

## 5. Empirical Strategy

### 5.1 Estimating the effect of political satisfaction

In the first part of the analyses, I will estimate the effect of political satisfaction on voting behavior using an individual fixed effects model.

#### 5.1.1 Problems with endogeneity

If the correlation between the variable of interest and the error term is zero, the variable of interest is called an *exogenous* estimator, i.e., the estimator is unbiased and shows the causal effect. Otherwise, the variable of interest is called *endogenous*. Endogeneity could have three possible sources which will be covered in the next three sections.

**Reverse causality.** If the variable of interest (political satisfaction) influences the dependent variable (voting behavior) and vice versa, this is known as reverse causality. It is plausible to think that voting behavior eventually also influences political satisfaction. For example, when someone votes on a certain party and regrets it afterwards, it could affect this person's political satisfaction.

**Omitted variables.** In this research, measures of political satisfaction are the independent variable, and the voting outcome will be the dependent variable. I cannot simply compare the voting outcomes of satisfied people with unsatisfied people. There are many variables which influence both satisfaction and voting behavior. If those variables are not taken care of, they will end up in the error term and the estimates will then be biased. For a given individual, I do not know what would have happened to the voting behavior of that particular person, if this person had a different level of satisfaction. Hence, I cannot observe the counterfactual. This is known as the Fundamental Problem of Causal Inference.

People differ in many unobserved characteristics; how they were raised by their parents, how motivated they are, what their philosophy of life is, their childhood background, etc. These variables are not in my dataset. Growing up in disadvantaged neighborhoods may plausibly be correlated with political satisfaction of these people later on in life. People from disadvantaged

neighborhoods may also be more likely to vote for different parties than people from rich neighborhoods. Furnham and Cheng (2019) found that educational level and occupational status influences the political interests of people. This can also have consequences for political orientation and satisfaction. Variables such as employment status and education also have strong effects on voting behavior. People often vote out of self-interest and will then, for example, vote for parties that stand up for the unemployed if they are unemployed themselves. Unemployed and lower educated people are disproportionately much settled in disadvantaged neighborhoods. If one would not be able to control for this, it would bias the estimates.

How someone is raised could also influence both political satisfaction and voting behavior. When parents tell their children how unfair the income distribution is, that people like them are paid far too little or that too many immigrants live in the Netherlands, it could trickle down to the satisfaction of the children later in life. It affects their views on the economy and politics. Children could also copy the voting behavior of their parents. Akee et al., (2018) found that there is a strong inter-generational correlation in voting across parents and their children.

Someone's philosophy on life such as religion influences voting behavior and their general political and economic satisfaction. Okulicz-Kozaryn (2010) found a bimodal relationship between religiosity and life satisfaction, i.e., religious people are more likely to be very satisfied or either very dissatisfied about life. This religious characteristic is also likely to influence voting behavior. Esmer and Pettersson (2007) found that religious values exert a significant influence on the preference to vote for religious parties.

The problem with variables like parental background, neighborhood background or philosophy of life is that those variables are impossible to catch in a number, i.e., they are unobserved. Another source of endogeneity stems from the availability of data. IQ, for example, could also be a source of endogeneity. IQ is a measurable variable, but it is not provided to me in the dataset.

**Measurement error.** Poorly documented data can also bias the results. For example, if there is a typo or a comma is misplaced. This source of endogeneity is not a big concern in this research, since the dataset is checked extensively and documented with care.

### ***5.1.2 Capturing political satisfaction***

There is no variable in the dataset which directly covers political satisfaction. The dataset, however, provides many satisfaction scores on important political topics. I choose to

create a political satisfaction index in order to investigate the effect of general political satisfaction on voting behavior. Subsequently I will also investigate the disaggregated effect of political satisfaction to explore the different sources and what their effect is.

One's political satisfaction could plausibly influence voting behavior. If someone is very dissatisfied about the current government, this person is maybe more likely to vote for an opposition party next election. In the past decade, major mistakes have been made by the parliament concerning the childcare benefits scandal. The Dutch cabinet was responsible for the childcare benefit scandal which also caused the cabinet to fall in January 2021.<sup>9</sup> This could influence people's voting behavior in future elections.

In the LISS data, there are many variables available concerning political satisfaction. Respondents were asked to grade their satisfaction about several determinants of political satisfaction on a scale from 0 to 10. They had to grade the following determinants:

- Government
- Parliament
- Politicians
- Political parties
- Democracy

### 5.1.3 The use of OLS Multiple Regression

Because all people differ in characteristics, one could use the Ordinary Least Squares Multiple Regression to control for observed differences. This method mainly relies on the Conditional Independence Assumption (CIA). This means that the differences between the people is only due to observed characteristics. If this is the case, one can control for these variables by adding them to the regression equation, so that the correlation between the variable of interest and then error term is zero. The OLS regression will be:

$$Vote_{p,i,t} = \beta_0 + \beta_1 PS_{i,t} + \beta_2 \vec{X}_{i,t} + \varepsilon \quad (1)$$

Where  $Vote_{p,i,t}$  is a dummy variable which takes the value 1 if individual  $i$  voted for party  $p$  in period  $t$  and takes the value 0 otherwise.  $PS_{i,t}$  displays the political satisfaction score of individual  $i$  in period  $t$ .  $\vec{X}_{i,t}$  is a vector of control variables of individual  $i$  in period  $t$ .

The problem with this OLS method is that the CIA is a tricky and unrealistic one in this

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<sup>9</sup> See for example Wikipedia-bijdragers (2021e)

setting. There are many unobserved variables which cause problems. Therefore, one would find biased estimates when running this regression.

#### 5.1.4 *The use of individual fixed effects*

Individual fixed effects is a very good method to circumvent all time-invariant omitted variables. Hence, I do not have to measure these types of variables or even know what they are. This method uses the within-individual variation of the variable of interest to estimate its effect on the dependent variable, i.e., the individual itself is used as the counterfactual. For this method, I need observations of individuals over multiple periods. As said in section 4, LISS provides this kind of data. The regression equation looks as follows:

$$\begin{aligned}
 &Vote_{p,i,t} - Vote_{pit-1} = \\
 &\rho(PS_{i,t} - PS_{i,t-1}) + (\gamma_t - \gamma_{t-1}) + \eta_{\neg}(X_{i,t} - X_{i,t-1}) + (\varepsilon_t - \varepsilon_{t-1})
 \end{aligned} \tag{2}$$

Where  $\rho$  displays the effect of the within-individual variation on voting behavior, where  $\gamma$  displays the time effect on voting behavior, which are equivalent to time dummies. All other variables still have the same meaning as in equation 1, the only difference being an additional time period. In Appendix D, I will show how this equation is derived from the general equation for estimating an effect with panel data.

In this equation there is still a vector of control variables. Individual fixed effects cannot account for time-varying omitted variables and therefore they should be implemented in the regression in order to achieve an unbiased estimate.

One reason this method is particularly attractive is that many unobserved variables which influence both political satisfaction and voting behavior are likely to be constant over time. Parental background, for example, this variable is formed before a person belongs to the electorate. Parental background does not change afterwards. So, this method removes all bias stemming from this variable. The same is likely to apply for variables like neighborhood background, religiosity, IQ and education.

**Threats to the internal validity of the model.** A big disadvantage of an individual fixed effects model is that it cannot account for time-varying omitted variables. Therefore, if these types of variables are present, they must be added to the model.

*Party/leader likeableness.* How likeable someone finds the party and its political leader

is one of the most important determinants of voting behavior in the Netherlands<sup>10</sup>. Many people vote on a certain party because they think the political leader is likable or they have sympathy for the party itself. It could plausible be that this sympathizing varies over time. Political leaders or parties can make mistakes or be involved in scandals, which suddenly diminishes their likeableness. If the likeableness of a political party of leader is correlated with the political satisfaction of an individual, I would obtain a biased estimate. It is reasonable to think that people's politician and party satisfaction correlates with their likeableness.

Someone's voting behavior could be the result of their sympathy for a certain party and not their political (dis)satisfaction. Therefore, I would not estimate the true effect of political satisfaction on voting behavior if this is correlated with party- and leader sympathy. To overcome this problem, I will add the individual party and leader sympathy variables into the model. By doing this, the bias stemming from the feeling of sympathy for a party will be removed.

***Employment status.*** Whether an individual is unemployed could vary over time. This could have a big impact on someone's political satisfaction and voting behavior. Therefore, I will have to include employment status in the model. When someone becomes unemployed, it can change their satisfaction of politics, for example their government satisfaction. Unemployed people are also more likely to vote for parties that stand up for people at the bottom of the income distribution.

Information on employment status is not provided in the *Politics and Values* study. My measure of unemployment is based on a monthly background measure of respondents' employment state. I code a person as having experienced unemployment if I observe at least four or more months of unemployment per year. Shorter unemployment periods (three months or less) are not considered as being unemployed, because it might reflect frictional unemployment. I merged all months into yearly datasets and eventually I merged this dataset with the Masterfile. I used the background survey waves corresponding to the election year. Hence, irrespective of the timing of the election.

***Social image.*** Vision on society could be an important determinant of voting behavior and it could vary over time. Someone's view of what is fair influences voting behavior with regard to which parties prefer much or little redistribution. The extent to which someone is

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<sup>10</sup> Retrieved from I&O Research (2019)

satisfied with the way society works, probably also influences government satisfaction and therefore political satisfaction.

There is no variable which directly captures social image. therefore, I will try to proxy it using multiple variables which have to do with someone's social image. Important determinants of social image have to do with education, migration, European unification, health care, the economy and whether people prefer more or less redistribution. I will include satisfaction variables of those determinants into the model to overcome the possible bias stemming from the time-varying social image. Some determinants are scaled from 0-10 and some determinants are scaled from 1-5 with the reversed meaning of high to low satisfaction. Therefore, I scaled all determinants to a 0-1 scale with the same meaning: 0 means low satisfaction, 1 means high satisfaction.

### ***5.1.5 Ordered Logit Regression***

The variable of interest in this research is a Likert scale variable. The Likert scale is a method for interrogating data that is difficult to quantify, for example political satisfaction. By grading satisfaction on a scale from 0 to 10, such qualitative variables can still be quantified. A Likert scale is an ordinal ranking. As a result, the difference between 1 and 2 is not the same as the difference between 2 and 3 (the differences are not experienced as the same). Individual fixed effects uses OLS estimates to determine the effect of interest. OLS, however, assumes that the differences between, for example, 1-2 and 2-3 are the same. This can cause problems for the interpretation of results.

The possible solution to this problem could be an Ordered Logit Regression model. It is an extension of the logistic regression model, but allowing for more than two response categories, i.e., grading satisfaction in the mentioned scale. This method relies on the Proportional Odds Assumption (POA): the relationship between each pair of outcome groups is the same. In other words, it assumes that the coefficients that describe the relationship between the lowest level versus all higher categories of satisfaction are the same as those that describe the relationship between the next lowest category and all higher categories of satisfaction, etc.<sup>11</sup>

The interpretation of results in such logit models are relatively difficult and it often goes wrong. It is also unclear whether the POA holds. It may therefore be better to use individual fixed effects which uses OLS estimates to keep the interpretation of results relatively intuitive.

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<sup>11</sup> Retrieved from the Institute for Digital Research & Education (n.d.)



The trade-off is therefore on the one hand a simpler interpretation of results and on the other hand solving the problem associated with ordinal ranking. In this setting, I consider the net-benefits of OLS higher than the net-benefits of Ordered Logit. It is important to be able to explain results relatively simply, because then all voters and politicians can take the findings of this research into account.

## 5.2 Discovering a possible taboo on extremist parties

If the dataset I am using is representative for the Dutch electorate, there should be no big differences between the real election results and the fictitious election results derived from the database. The respondents were asked for which party they voted in the last election. Hence, I can figure out the voting share of each party and compare this to the voting share following from the real elections. In order to know whether these voting shares differ significantly, I will perform a two-sample t-test. I can set up confidence intervals for the differences in voting shares. If the number zero is outside this confidence interval, I can conclude that the difference is significantly different from zero and that the voting share means are different. The formula of a confidence interval looks as follows:

*Confidence interval* =

$$(Voting\ Share_{LISS,p} - Voting\ Share_{Real\ election,p}) \pm t^* \sqrt{\frac{S_{LISS,p}^2}{n_{LISS}} + \frac{S_{Real\ election,p}^2}{n_{Real\ election}}} \quad (3)$$

Where  $Voting\ Share_p$  displays the voting share of political party p following from the LISS data or the real election.  $S^2$  displays the variance in voting shares of political party p, according to the LISS data or the real election. n displays the total number of votes in the LISS data or real election. The critical t-values are 1.645, 1.96 and 2.576 for the confidence levels of 90%, 95% and 99%, respectively. How the variances and standard errors are calculated, is shown in Appendix F.

If I find consistent significant lower voting shares in the LISS data compared to the real election result for a party like the PVV, this may be due to the representativeness of the dataset or due to a possible taboo reigning on this party. People may not feel free to say that they voted PVV and lie about their vote or fill in “Prefer not to say” when they were asked for which party they voted in the last election.

## 6. Results

### 6.1 The effect of political satisfaction on voting behavior

I attempt to control for unobserved variation which influences political satisfaction and voting behavior by using an individual fixed effects model. Tables 1 and 2 show the regression results for two scenarios: No controls and controls included. The reason for doing this is to show the bias stemming from those variables had they not been included and the importance of those control variables.

#### 6.1.1 Analyses without controls

In Table 2, the results for 50Plus, DENK and FvD are not shown. The reason for this is that the party- and leader sympathy is not available for all years. Those parties did not participate in all elections I am investigating. The individual fixed effects model uses the within individual variation of (control) variables to estimate the effect on voting behavior. The leader- and party sympathy for DENK and FvD are only available for one time period, i.e., there is no variation in this variable. Therefore, the effect when including those control variables cannot be estimated using this method. There is, however, variation possible in leader- and party sympathy for 50Plus, because they participated in two elections as presented in the first table. This variation would be stemming from the period 2012-2017, while I am investigating the period 2006-2017 for the other parties. This would make the estimates for 50Plus less reliable, so I decided to leave this party out of the table as well.

I investigate the effect of my political satisfaction index on the probability to vote for a certain party. Because the dependent variables are binomial (1 if an individual voted for that party and 0 if not), these regressions are linear probability regressions. Hence, these coefficients show probabilities. From Table 1 can be seen that individuals who score 1 point higher on the political satisfaction index have a greater chance of 2.1 percent to vote for the VVD, *ceteris paribus* (significant at 99%-level). For the PVV, this effect is reversed: 1 point higher of political satisfaction results in a 0.9% lower chance of voting for the PVV (significant at 90%-level). Other parties where significant effects can be seen are: D66, SP, PvdA, CU and SGP where the percentages are 1.2%, -1%, -0.9% 0.8%, -0.6%, respectively. The other parties show no significant effects, which means that the small effects found may also be due to chance. For this reason, little can be concluded about the effect on the other parties. From this table without controls, it seems that political satisfaction has a negative relationship with the likelihood to vote for mainly opposition parties. A strongest effect can be found for the VVD. This party has

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reigned the country since the elections of 2010. People who are satisfied with the status quo want it to stay that way. It is therefore logical that these political satisfied people vote for the party that has been around for a decade. However, no firm conclusion can be drawn from this table because of the possible time-varying omitted variables.

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**Table 1**

*Individual fixed effects regression results without controls*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	VVD	PVV	CDA	D66	GL	SP	PvdA	CU	PvdD	SGP	50Plus	DENK	FvD
<b>Aggregated</b>	0.021***	-0.009*	0.003	0.012**	-0.005	-0.010***	-0.009**	0.008***	-0.001	-0.006**	-0.004	-0.001	-0.001
<b>Political</b>	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)	(0.003)	(0.004)	(0.002)	(0.002)	(0.002)	(0.003)	(0.001)	(0.001)
<b>satisfaction</b>													
<b>index</b>													
Year effect													
2010	-0.065***	0.006	-0.042***	-0.009	0.050***	0.066***	0.054***	-0.016***	0.000	-0.022***	-	-	-
	(0.017)	(0.010)	(0.013)	(0.016)	(0.011)	(0.007)	(0.009)	(0.005)	(0.002)	(0.005)			
2012	-0.005	0.054***	-0.089***	-0.060***	0.062***	0.068***	0.015*	-0.020**	-0.001	-0.002	0.009**	-	-
	(0.017)	(0.011)	(0.013)	(0.010)	(0.011)	(0.008)	(0.008)	(0.008)	(0.002)	(0.007)	(0.004)		
2017	-0.079***	-0.114***	0.011	-0.043***	0.033***	0.094***	0.077***	-0.004	0.012*	-0.009	0.032***	-0.005***	0.010***
	(0.016)	(0.014)	(0.015)	(0.014)	(0.008)	(0.009)	(0.010)	(0.006)	(0.006)	(0.006)	(0.006)	(0.001)	(0.003)
Constant	0.141***	0.245***	0.133***	0.093***	0.074***	0.056***	0.074***	0.011	0.022*	0.060***	0.032**	0.009	0.008
	(0.034)	(0.029)	(0.032)	(0.027)	(0.023)	(0.018)	(0.020)	(0.013)	(0.010)	(0.014)	(0.015)	(0.007)	(0.006)
<i>N</i>	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225
Observations	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900

*Notes.* Robust standard errors in parenthesis. If there is no year effect shown in this table, it means that this party did not participate in that years' election.

\*\*\*P<0.01, \*\*P<0.05, \*P<0.10.

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**Table 2**

*Individual fixed effects regression results with controls*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)
	VVD	PVV	CDA	D66	GL	SP	PvdA	CU	PvdD	SGP
<b>Political satisfaction index</b>	0.029**	0.003	-0.012	0.000	-0.005	-0.017***	-0.019***	0.003	0.001	-0.008
	(0.012)	(0.009)	(0.011)	(0.009)	(0.008)	(0.006)	(0.007)	(0.004)	(0.004)	(0.005)
<i>(0-10 scale)</i>										
Unemployed	0.006	-0.001	0.035	-0.033	0.013	-0.002	0.025	-0.008	0.001	-0.028
	(0.035)	(0.069)	(0.056)	(0.056)	(0.038)	(0.036)	(0.054)	(0.023)	(0.009)	(0.025)
Party sympathy	-0.008	-0.001	0.001	0.023**	0.014*	0.013**	0.023***	0.003	0.003	0.003
	(0.009)	(0.012)	(0.010)	(0.010)	(0.007)	(0.005)	(0.006)	(0.005)	(0.003)	(0.004)
<i>(0-10 scale)</i>										
Party leader sympathy	0.016*	-0.006	0.012	-0.008	0.007	0.005	-0.009	-0.001	0.000	0.001
	(0.009)	(0.011)	(0.008)	(0.009)	(0.006)	(0.005)	(0.006)	(0.005)	(0.004)	(0.003)
<i>(0-10 scale)</i>										
Social image index	-0.082	-0.085	-0.050	-0.115	-0.048	0.012	0.248**	0.041	0.055	-0.019
	(0.135)	(0.130)	(0.131)	(0.139)	(0.117)	(0.071)	(0.094)	(0.050)	(0.048)	(0.068)
<i>(0-1 scale)</i>										
Year effect										
2010	-0.096***	0.009	-0.027	0.001	0.041**	0.052***	0.040**	-0.026***	-0.001	-0.016**
	(0.030)	(0.019)	(0.027)	(0.030)	(0.020)	(0.015)	(0.016)	(0.009)	(0.004)	(0.008)
2012	-0.010	0.058***	-0.091***	-0.072***	0.077***	0.053***	0.016	-0.038***	-0.005	-0.001
	(0.030)	(0.018)	(0.023)	(0.018)	(0.020)	(0.013)	(0.015)	(0.014)	(0.005)	(0.011)

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	2017	-0.081***	-0.124***	0.025	-0.066***	0.036***	0.080***	0.118***	-0.023**	-0.008	0.002
		(0.030)	(0.028)	(0.030)	(0.023)	(0.013)	(0.013)	(0.019)	(0.10)	(0.010)	(0.012)
Constant		0.103	0.275***	0.182**	0.157**	0.002	0.001	-0.084	0.015	-0.028	0.070
		(0.089)	(0.098)	(0.094)	(0.075)	(0.063)	(0.052)	(0.059)	(0.034)	(0.033)	(0.048)
<i>N</i>		404	404	404	404	404	404	404	404	404	404
Observations		1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616

*Notes.* Robust standard errors in parenthesis. 50Plus, DENK and FvD are left out of this table as explained before.

\*\*\*P<0.01, \*\*P<0.05, \*P<0.10.

### *6.1.2 Analyses with controls*

Table 2 shows that the results with controls differ a lot from the results without controls. No significant effects are found for the PVV, D66, CU and SGP, which were present without controls. The absolute magnitude of the effects was often upward biased. I.e., the effects were smaller in reality than as presented in Table 1. The robust standard errors are often larger because of the smaller sample size, this ensures that significant effects are found less, see for example CU. These differences indicate that adding these control variables is very important. If one were to perform a naive regression without control variables, one could easily draw wrong conclusions. Respondents could also fill in “do not know” when questions were asked regarding the control variables. I had to remove these respondents from the dataset, because this does not provide me any information on their attitude towards important topics. This had the consequence that the sample size became a lot smaller when including controls.

Individuals who score 1 point higher on the political satisfaction index have a greater chance of 2.9 percent to vote for the VVD, *ceteris paribus* (significant at 95% significance level). This effect is bigger than the effect found in the regression without controls, meaning that the effect from Table 1 is downward biased in case of the VVD. People who score 1 point higher on the political satisfaction index have a lower chance of 1.7% and 1.9% to vote for SP and PvdA, respectively, *ceteris paribus* (both significant at 99% significance level). It seems that political satisfaction only has a strong effect on old-established left- and right-wing reigning parties. Left-wing parties like PvdD and GL are less old established when comparing them to SP and PvdA.

No significant effects are found for the other parties; hence no firm conclusions can be drawn from these coefficients. The negative effects from Table 1 of the PVV and PvdD swapped signs and became slightly positive. The effect on CDA also swapped sign and became negative. There seems to be no effect of political satisfaction on the likelihood to vote for D66. Negative effects are found for the likelihood to vote for GL and SGP. There is a slight positive effect on CU. The year effects seem to have a strong effect on voting behavior of the Dutch electorate. This can be the result of how things have progressed with a party over the years, or which problems were important at that time and which party responded best to them. A party may also have conducted a very good (or bad) campaign or have been mostly positive or negative in the news. The party leader's sympathy for the VVD (Mark Rutte) has a significant positive effect on the likelihood to vote VVD. Positive significant effects were also found for the party sympathy of D66, GL, SP and PvdA.

Concluding, political satisfaction has a positive effect on the likelihood to vote for the

VVD and it has negative effects on the likelihoods to vote for SP and PvdA. VVD has reigned the country since 2010, so that could be the underlying reason why political satisfied people are more likely to vote for the VVD. The PvdA has traditionally been one of the largest parties. However, this has changed and the PvdA suffered a historic loss of 29 seats in the 2017 election. There has been no PvdA prime minister since the 2002 elections, which is quite a long time for a traditionally large party. This loss of influence of this left-wing party could explain this effect of political satisfaction. People who prefer a left-wing government have been dealing with a center-right cabinet for years. These dissatisfied people may therefore be more inclined to vote for PvdA, because they want to see a more left-wing government. The same holds for the SP. This is also an old-established party which is on the far-left side of the political spectrum, which implies that this party has radically different ideas than the ruling parties: much more redistribution and egalitarianism. These dissatisfied people may want to change current center-right politics and therefore vote for left-wing parties like SP and PvdA.

### ***6.1.3 The effect of the different determinants of political satisfaction***

To further investigate the effect of the determinants of political satisfaction, I have to disaggregate political satisfaction. It is of fundamental importance to know the effect of the different determinants in order to be able to know what the main drivers of voting behavior are when it comes to political satisfaction. Therefore, I perform the same regressions as in Tables 1 and 2, but then with respective determinant as the variable of interest.



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**Table 3**

*Sources of political satisfaction split up*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	VVD	PVV	CDA	D66	GL	SP	PvdA	CU	PvdD	SGP	50Plus	DENK	FvD
<i>Panel A</i>													
<b>Government</b>	0.018*** (0.004)	-0.007** (0.004)	0.000 (0.004)	0.011*** (0.003)	-0.007*** (0.003)	-0.004 (0.002)	-0.011*** (0.003)	0.006*** (0.002)	0.000 (0.001)	-0.005*** (0.002)	-0.001 (0.002)	-0.001 (0.001)	-0.001* (0.001)
<b>Parliament</b>	0.016*** (0.004)	-0.008* (0.004)	0.000 (0.004)	0.005 (0.004)	-0.002 (0.003)	-0.005* (0.003)	-0.005* (0.003)	0.006*** (0.002)	0.000 (0.002)	-0.004** (0.002)	-0.003 (0.002)	0.001 (0.001)	0.000 (0.001)
<b>Politicians</b>	0.017*** (0.005)	-0.009** (0.004)	0.002 (0.005)	0.013*** (0.004)	-0.004 (0.003)	-0.008** (0.003)	-0.007** (0.003)	0.005*** (0.002)	-0.001 (0.002)	-0.003 (0.002)	-0.004* (0.002)	-0.001 (0.001)	-0.001 (0.001)
<b>Political parties</b>	0.015*** (0.005)	-0.005 (0.004)	0.003 (0.005)	0.011** (0.004)	-0.003 (0.004)	-0.009*** (0.003)	0.006** (0.003)	0.003* (0.002)	-0.002 (0.002)	-0.003 (0.002)	-0.004* (0.002)	0.000 (0.001)	-0.001 (0.001)
<b>Democracy</b>	0.001 (0.005)	-0.001 (0.005)	0.004 (0.004)	-0.001 (0.004)	0.001 (0.004)	-0.009*** (0.003)	0.003 (0.003)	0.005*** (0.002)	0.000 (0.002)	-0.004 (0.002)	-0.002 (0.002)	-0.002* (0.001)	0.000 (0.001)
Controls included	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Year effects included	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<i>N</i>	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225
Observations	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900
<i>Panel B</i>													
<b>Government</b>	0.022*** (0.007)	-0.004 (0.006)	-0.008 (0.007)	0.008 (0.006)	-0.007 (0.006)	-0.007* (0.004)	-0.016*** (0.005)	0.005* (0.003)	0.002 (0.002)	-0.006** (0.003)			

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<b>Parliament</b>	0.022*	-0.004	-0.007	-0.001	0.000	-0.012**	-0.009	0.001	0.000	-0.009**
	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.005)	(0.006)	0.003)	(0.004)	(0.004)
<b>Politicians</b>	0.025*	0.006	-0.011	-0.002	-0.001	-0.014***	-0.017***	0.005	0.000	-0.004
	(0.010)	(0.008)	(0.009)	(0.007)	(0.006)	(0.005)	(0.006)	(0.004)	(0.003)	(0.004)
<b>Political parties</b>	0.023**	0.011	-0.006	-0.004	-0.002	-0.016***	-0.012**	-0.002	-0.001	-0.005
	(0.010)	(0.008)	(0.009)	(0.007)	(0.007)	(0.005)	(0.005)	(0.004)	(0.003)	(0.004)
<b>Democracy</b>	-0.008	0.007	-0.006	-0.010	-0.004	-0.007	0.000	-0.001	0.004	0.000
	(0.010)	(0.011)	(0.010)	(0.009)	(0.007)	(0.006)	(0.007)	(0.004)	(0.004)	(0.006)
Controls included	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year effects included	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<i>N</i>	404	404	404	404	404	404	404	404	404	404
Observations	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616	1,616

*Notes.* Robust standard errors in parenthesis. This table shows the results of individual fixed effects regressions with each determinant of political satisfaction as the dependent variable. Hence, each coefficient stems from a different regression. In Panel A, no controls were included. In Panel B the same controls were used as in the regressions from Table 2. All political satisfaction determinants are scaled from 0-10. The coefficients of 50Plus, DENK and FvD were left out of Panel B for the same reason why they were left out from Table 2.

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

Panel A shows the results of the regression results without controls. One can clearly see that these estimates are biased because the magnitude and significance of the coefficients from Panel A differ from the results of Panel B. From Panel B can be seen that some determinants have a greater influence on voting behavior than others. Government satisfaction shows the highest number of significant effects while democracy satisfaction shows no significant effects. The other determinants such as parliament, politicians and parties also show some significant effects. When looking at the number of significant effects, I conclude that government satisfaction is the most important driver of voting behavior. This can be explained from the fact that the government has the greatest influence on the policy that is made. The satisfaction of this policy is logically an important driver of voting behavior. The effect of government satisfaction is clearly reflected in Table 2, where the same positive and negative significant effects were found for VVD, SP and PvdA as in this table.

### **6.2 Unobserved time-varying omitted variables**

As can be seen from the regression results, the coefficients change a lot when controls are included. This could be a sign of trouble. When the coefficients change a lot when including control variables, it would probably mean that there are also a lot of unobserved time-varying variables. Therefore, this method cannot provide causal estimates. Many researchers tried to overcome this problem. The idea of Altonji et al., (2005) is that one can learn from the selection on observables to say something about the selection on unobservable variables. They developed a method which estimates the effect of interest under a ‘worst-case’ scenario in which the selection on unobservable variables is equally large as the observables. This method cannot be used with large sample in panel data, but it might be an interesting option in other settings when analyzing politics.

There is, however, also a positive side to this research regarding purer estimates. Typically, the selection on unobservable variables is smaller than the selection on observables, since:

1. The variables of interest are mostly carefully selected in surveys;
2. The error term will also reflect idiosyncratic variability (noise);
3. The error term includes variation in the outcome variable that is determined after the change in the variable of interest.<sup>12</sup>

Therefore, I expect my estimates to be less different from the real, unbiased coefficient than the

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<sup>12</sup> Retrieved from Van Kippersluis (2021a), not publicly accessible

difference in coefficients with and without controls.

## **6.2 Taboo on extremist parties**

Table 4 (next page) shows the differences in percentages of votes on the different parties following from the LISS data and the percentages of votes on the parties following from the real elections. It is clear that the voting behavior of the LISS sample is sometimes significantly different from the voting behavior of the entire Dutch electorate. The Animal Welfare Party (PvdD) shows no significant differences from the entire electorate over all four periods. The PvdA shows positive and negative significant differences in different periods, while the Christian Democrats (CDA) show a negative significant difference only once. The VVD shows negative significant differences in the data in three of the four periods compared to the real election results. The PVV also stands out, this party got significant less votes from the people in the database compared to the real elections in all four periods. This can maybe be explained by changes in party sympathy. Also, perhaps all parties sometimes suffer from a stigma or halo.

Significant differences can be found for many parties, but the magnitude of those differences seems party depended. In the 2017 elections, the PVV got only 64.8% of the votes in the LISS data, as a percentage of the voting shares in the real elections, while a lot of other significant differences are a lot smaller. Even though a sample is representative for the real population, there can always be different outcomes due to chance or small sampling mistakes. Therefore, it is important to not only look at the significant differences but also to look at the magnitude of the differences and the consistency of the differences. The results for 50Plus, DENK and FvD are less reliable, because those parties are relatively new and small compared to the other parties. Hence, one should keep in mind this unreliability when looking at the results.

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**Table 4**

*Comparison between voting shares based on LISS data and real election results*

	2006			2010			2012			2017		
(1) Party	(2) LISS	(3) Real election result	(4) $\Delta$	(5) LISS	(6) Real election result	(7) $\Delta$	(8) LISS	(9) Real election result	(10) $\Delta$	(11) LISS	(12) Real election result	(13) $\Delta$
CDA	23.68 (42.51)	26.5 (44.14)	-2.82*** (0.58)	13.09 (33.73)	13.6 (34.29)	-0.51 (0.51)	8.85 (28.41)	8.51 (27.90)	0.34 (0.41)	11.83 (32.31)	12.38 (32.93)	-0.55 (0.46)
PvdA	18.15 (38.55)	21.2 (40.87)	-3.05*** (0.53)	18.33 (38.70)	19.6 (39.72)	-1.27** (0.59)	23.92 (42.66)	24.84 (43.21)	-0.92 (0.62)	7.93 (27.02)	5.70 (23.19)	2.23*** (0.38)
VVD	14.93 (35.64)	14.7 (35.38)	0.23 (0.49)	20.34 (40.25)	24.6 (40.36)	-4.26*** (0.61)	24.60 (43.07)	26.58 (44.18)	-1.98*** (0.63)	18.49 (38.83)	21.29 (40.93)	-2.8*** (0.55)
SP	16.46 (37.08)	16.6 (37.19)	-0.14 (0.51)	9.6 (29.46)	9.8 (29.76)	0.2 (0.45)	10.96 (31.24)	9.65 (29.53)	1.31*** (0.46)	8.84 (28.39)	9.09 (28.74)	-0.25 (0.40)
GL	5.86 (23.5)	4.6 (20.96)	1.26*** (0.32)	7.64 (26.57)	6.7 (24.95)	0.94** (0.41)	2.6 (15.90)	2.33 (15.10)	0.27 (0.23)	10.25 (30.33)	9.13 (28.80)	1.12*** (0.43)
D66	2.33 (15.08)	2.0 (13.88)	0.33 (0.21)	7.64 (26.57)	6.9 (25.43)	0.74* (0.41)	8.17 (27.40)	8.03 (27.18)	0.14 (0.40)	13.23 (33.89)	12.23 (32.76)	1.0** (0.48)
PVV	4.04 (19.69)	5.9 (23.54)	-1.86*** (0.27)	12.11 (32.63)	15.4 (36.14)	-3.29*** (0.50)	7.43 (26.22)	10.08 (30.11)	-2.65*** (0.38)	8.46 (27.83)	13.06 (33.69)	-4.6*** (0.39)
CU	4.6 (20.95)	4 (19.53)	0.6*** (0.21)	3.54 (18.48)	3.2 (17.71)	0.34 (0.28)	3.28 (17.81)	3.13 (17.40)	0.15 (0.26)	4.17 (20.00)	3.39 (18.09)	0.78*** (0.28)
PvdD	1.64 (12.70)	1.8 (13.40)	-0.16 (0.17)	1.12 (10.52)	1.3 (11.32)	-0.18 (0.16)	1.64 (12.70)	1.93 (13.77)	-0.29 (0.19)	3.44 (18.22)	3.19 (17.57)	0.25 (0.26)

THE EFFECT OF POLITICAL SATISFACTION ON VOTING BEHAVIOR

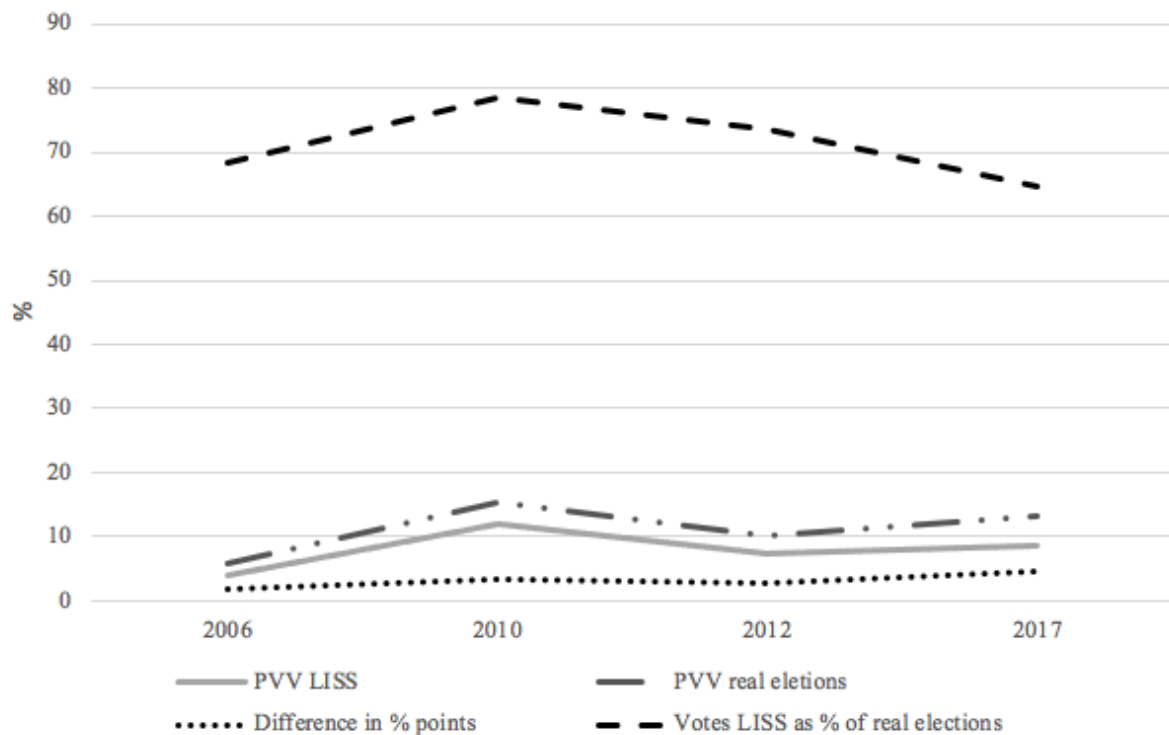
SGP	1.81 (13.31)	1.6 (12.38)	0.21 (0.18)	1.37 (11.64)	1.7 (13.07)	-0.33* (0.18)	1.75 (13.10)	2.09 (14.30)	-0.34* (0.19)	1.69 (12.89)	2.08 (14.28)	-0.39** (0.18)
50Plus	-	-	-	-	-	-	2.70 (16.22)	1.88 (13.60)	0.82*** (0.24)	3.50 (18.37)	3.11 (17.36)	0.39 (0.26)
FvD	-	-	-	-	-	-	-	-	-	1.45 (11.96)	1.78 (13.22)	-0.33* (0.17)
DENK	-	-	-	-	-	-	-	-	-	0.46 (6.74)	2.06 (14.19)	-1.6*** (0.10)
<i>N</i>	5,371	9,838,683		4,293	9,416,001		4,699	9,424,235		5,034	10,516,041	

*Notes.* The numbers in this table represent the share of votes a party (shown in column 1) got in the elections of 2006, 2010, 2012 and 2017. Every third column of each year (columns 4, 7, 10 and 13) shows the difference between the voting shares based on the regular LISS dataset (i.e., without observations removed when missing for other variables) and the results of the real elections in that particular year. When the voting share of a party is not shown, it means that this party did not participate in that election. Standard errors are shown in parenthesis. Real electoral results are retrieved from Wikipedia (see reference list for more information on these election results), in Appendix F is shown how the standard errors of the real electoral results are calculated from these numbers. More parties participated in the elections than presented in this table, but those parties received too little votes to have a seat in the parliament, so I decided to leave them out. In the LISS data, people could also choose the answers “other party”, “blank”, “I prefer not to say” and “I do not know”, which are also left out of this table.

\*\*\*P<0.01, \*\*P<0.05, \*P<0.10.

**Figure 1**

*Comparison PVV voting shares LISS and real election results*



*Notes.* The y-axis shows the voting shares of the PVV and the x-axis shows the election years.

Figure 1 visualizes the difference in PVV voting behavior of the LISS database and the entire electorate. Remarkable to see is that in the LISS database, for all years, the PVV received relative less (and significant) votes than in real life. This is visualized by the dashed line with dots which is constantly above the solid line. The dashed line shows the voting shares of the LISS data as percentages of the voting shares of the real election, which is fluctuating around 70%. The reason why the PVV receives a lower share of votes in the database compared to the real elections will be explained in the next two sections. The time-varying presence of a taboo could also be a source of endogeneity, but as can be seen from this figure, the space between the dashed line with dots and the solid line is approximately the same during the whole investigation period, implying that the possible taboo is time-invariant, which is beneficial for the individual fixed effects model.

### **6.2.1 Representativeness of the Dataset**

If the dataset is not representative for the Dutch population, it could explain why the PVV gets less votes from the people in the dataset, compared to the real elections. The same applies to the other parties where significant differences can be seen. Perhaps they are

disproportionately more or less reached by the LISS panel. Especially PVV voters might be hard to reach or they do not want to participate in such surveys.

The LISS database is, however, a probability-based panel, i.e., there is no self-selection in the sample. The samples are selected on basis of address and they were drawn up in collaboration with Statistics Netherlands (CBS). If a household does not have a broadband connection and/or computer, it will receive the necessary equipment on loan from CentERdata to be able to still participate in the panel. Furthermore, the data consists of people from all ages (>16), levels of education and regions, etc.<sup>13</sup> It could however be the case that some people from certain parties reject the invitation or that some people without a computer feel ashamed to loan equipment from CentERdata. This would make these groups underrepresented. Therefore, I cannot draw the conclusion that my results expose the taboo. Even though the differences between the dataset and the real elections are very big, it could still be because of the unrepresentativeness of the dataset.

### ***6.2.2 Taboo on the PVV***

The difference in voting behavior could also stem from the respondents not being honest about their voting behavior or that PVV voters in the dataset fill in the answer “I prefer not to say” a lot. The percentage of people who fill in that answer is relatively high: 4.04%, 3.42%, 2.66% and 2.9% for the elections of 2006, 2010, 2012 and 2017, respectively. This percentage is correlated ( $\rho = 0.10$ ) with the difference in PVV voting shares (LISS and real election) as a percentage of the real election PVV voting shares. This gives a signal that the bigger the differences between data and real life are (as a percentage of the PVV voting shares in real life), the more people fill in that they prefer not to say which party they voted last elections.

The significant differences between voting shares on the PVV are possibly due to the reigning stigma on this party. It is, however, impossible to disentangle whether PVV voters lie about their voting behavior, forgot the party they voted, prefer not to say that they voted for the PVV or that PVV voters are underrepresented, based on available data.

The same could be said about other parties where significant differences can be seen. The VVD and GL also show significant differences in three of the four periods. It could be that voters from all parties contain a certain group that would rather not say which party they voted for or lie about their vote. It could for example be that voters pretend to vote for GL, because this party is seen as very environmentally friendly (positive stigma). This could explain why

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<sup>13</sup> Retrieved from LISS Data (2015)



many significant differences can be seen in voters for many parties. As said, not only the significance is important, also the magnitude of the difference is important. The differences between the real results and the dataset, relative to the real results, are constantly much larger in the case of the PVV as can be seen in Table 4. This excess difference could be due to the taboo on this party.

**Table 5**

*Differences between LISS and real election results, as percentages of the real results*

(1) Party	(2) 2006	(3) 2010	(4) 2012	(5) 2017	(7) Average difference
CDA	-10.64	-3.75	4.00	-4.44	-3.71
PvdA	-14.39	-6.48	-3.70	39.12	3.64
VVD	1.56	-17.32	-7.45	-13.15	-9.09
SP	-0.84	2.04	13.58	-2.75	3.01
GL	27.39	14.03	11.59	12.27	16.32
PVV	-31.53	-21.36	-26.29	-35.22	-28.60
CU	15.00	10.63	4.79	23.01	13.36
PvdD	-8.89	-13.85	-15.03	7.84	-7.48
SGP	13.13	-19.41	-16.27	-18.75	-10.33

*Notes.* This table presents the differences between the voting shares of parties from the LISS database and the real election results, as percentages of the voting shares of the real election results. I chose to express the numbers this way so that the differences are made relative to the size of the party in real life. Column 7 presents the average differences between the LISS data and real elections; all elections are weighted equally. 50Plus, DENK and FvD are left out of this table. Those parties are small compared to some other established parties. They did not participate in all elections and are relatively new, while all other parties have a seat in the parliament for a very long time. This makes the estimates of those parties very unreliable and therefore, no reliable conclusions can be drawn from this analysis. Those parties are more vulnerable to sampling mistakes.

As can be seen from this table, the PVV shows by far the largest average differences of all established parties when comparing the LISS database to the real election results. Another party which stands out is GL, it shows some big positive differences, this means that more people fill in that they voted GL compared to the real election results. However, the average difference of the PVV is still much larger. No firm conclusions can be drawn from these results, because it is impossible to disentangle whether people lie about their vote, prefer not to say which party they voted for or told the truth. The only thing these results show is that it is very striking that the PVV consistently gets a much lower voting share in the database than in real life, while the database should be representative. The PVV is also not the only party that shows

major differences, perhaps there is also a (positive) stigma on GL? However, it is very likely that there is actually a taboo on the PVV because these results indicate it and several political scientists already endorsed this, but it is impossible to know for sure on the basis of these results.

### 7. Conclusion

In this paper, I used an individual fixed effects model to investigate how political satisfaction influences voting behavior of the Dutch electorate. This model is particularly attractive in this setting because it circumvents all bias stemming from time-invariant variables. There could still be bias stemming from time-varying omitted variables. I obtained cleaner estimates by adding variables into the model that influence both political satisfaction and voting behavior. The analysis with controls shows very different results than the analysis without controls for some parties.

I created a political satisfaction index coming from satisfaction variables on the government, the parliament, politicians, political parties and the democracy. This aggregated political satisfaction index is scaled from 0 to 10. I found that people who score 1 point higher on this index, on average have a higher chance of 2.9% to vote for the VVD, *ceteris paribus* (significant at 95% significance level). For the parties SP and PvdA, this effect is reversed: people who score 1 point higher on this index have a lower chance of 1.7% and 1.9% to vote for SP and PvdA, respectively, *ceteris paribus* (significant at 99% significance level). For all other parties, I found no statistically significant effects. People satisfied about the current politics are thus more likely to vote for the VVD. The VVD has been the largest party since 2010 and therefore exerts the greatest influence. People who are satisfied with the current policy are more likely to vote for a party that is already in power. My results show that the government satisfaction determinant of political satisfaction is the most important driver of voting behavior. The government exerts the biggest influence on policy which plausibly has consequences on people's voting behavior.

The plausible underlying mechanism why dissatisfied people vote for SP and PvdA is that the Dutch government is characterized center-right signature for years which causes dissatisfaction for left-wing minded people. These dissatisfied people want the government to be more left-wing and therefore vote for parties like SP and PvdA. Speaking in general terms: the findings suggest that political satisfaction is positively associated with the chance of voting for reigning parties and that it is negatively associated with the chance of voting for old-established parties with the opposite ideology of the reigning party. I found some similarities with the paper of Emmenegger et al., (2015). Political dissatisfaction is also a sort of

disadvantage and it translated to voting for parties who favor redistribution, like SP and PvdA.

I also analyzed whether there is a taboo reigning on the PVV. The results show consistent lower voting shares for the PVV in the database compared to the real elections. The PVV shows by far the largest negative differences in voting shares (50Plus, DENK and FvD excluded because of reliability). This may indicate that there is indeed a taboo reigning on this party. However, from these results it is impossible to know for sure. PVV voters may be more inclined to refuse the participation and are therefore underrepresented. It is also impossible to disentangle whether people lied about their vote, prefer not to say which party they voted for or told the truth. Hence, no firm conclusion can be drawn from these results, but at least it gives a signal that this taboo can be present.

### **8. Discussion**

The dataset I have used is very rich and can be used to assess many questions concerning politics. This article could help to better understand people's motive to vote and the important role political satisfaction sometimes plays in voting behavior. It could maybe help political parties and politicians to attract people to vote for them. This paper has, however, some limitations. Table 1 and 2 show some very big differences in results because of the controls added. It shows the importance of adding these control variables, which is good in itself, but it also means that there may be other time-varying variables that influence both voting behavior and political satisfaction of which I do not know about. It cannot be said with certainty that I have removed all bias by adding the mentioned control variables. I have also tried to proxy social image, but this proxy is not perfect and does not encompass the entire social image of an individual. Therefore, no causal relationship can be found with the individual fixed effects method. It is also unclear where the within-individual variation in political satisfaction comes from. Is it due to external shocks? Or is there something happening in someone's life that I do not know about which influences their voting behavior?

The introduction of new parties could also be a time-varying variable which influences voting behavior and political satisfaction. If a new party appeals to the same base as an existing party, then this may affect the likelihood of someone to still vote on that existing party. My method does not have a clear-cut solution to this problem. Therefore, the entry of new parties could bias my estimates.

There are many possible unobserved omitted variables (of which individual fixed effects already handles a lot), therefore, I would recommend an instrumental variable approach for future research. The main disadvantage is that it is difficult to find a good instrument, but this

would be a good solution for finding a causal relationship as long as a good instrument is found.

Regarding the external validity, the results are only valid for the Dutch population. As mentioned before, political systems differ a lot throughout the world and are characterized with very different numbers of political parties in the parliament. It would maybe be interesting for future research to research this effect in other countries as well to see if the same or other results are found.

The mentioned problem concerning the ordinal variable of interest could be a limitation to this research. Because this variable has an ordinal ranking, the interpretation of results can go wrong. For future research, I recommend performing an Ordered Logit analysis in addition to my main analysis to see if the differences in outcomes between the two analyzes are very large.

Regarding the possible taboo I have investigated, maybe a quantitative way of researching is not the best way to do it. A study with targeted, qualitative questions could perhaps be better to determine whether the taboo is really present. It may also be necessary to re-examine how representative the dataset really is. Concluding, the results provide some interesting insights which can be used as an steppingstone for future research.

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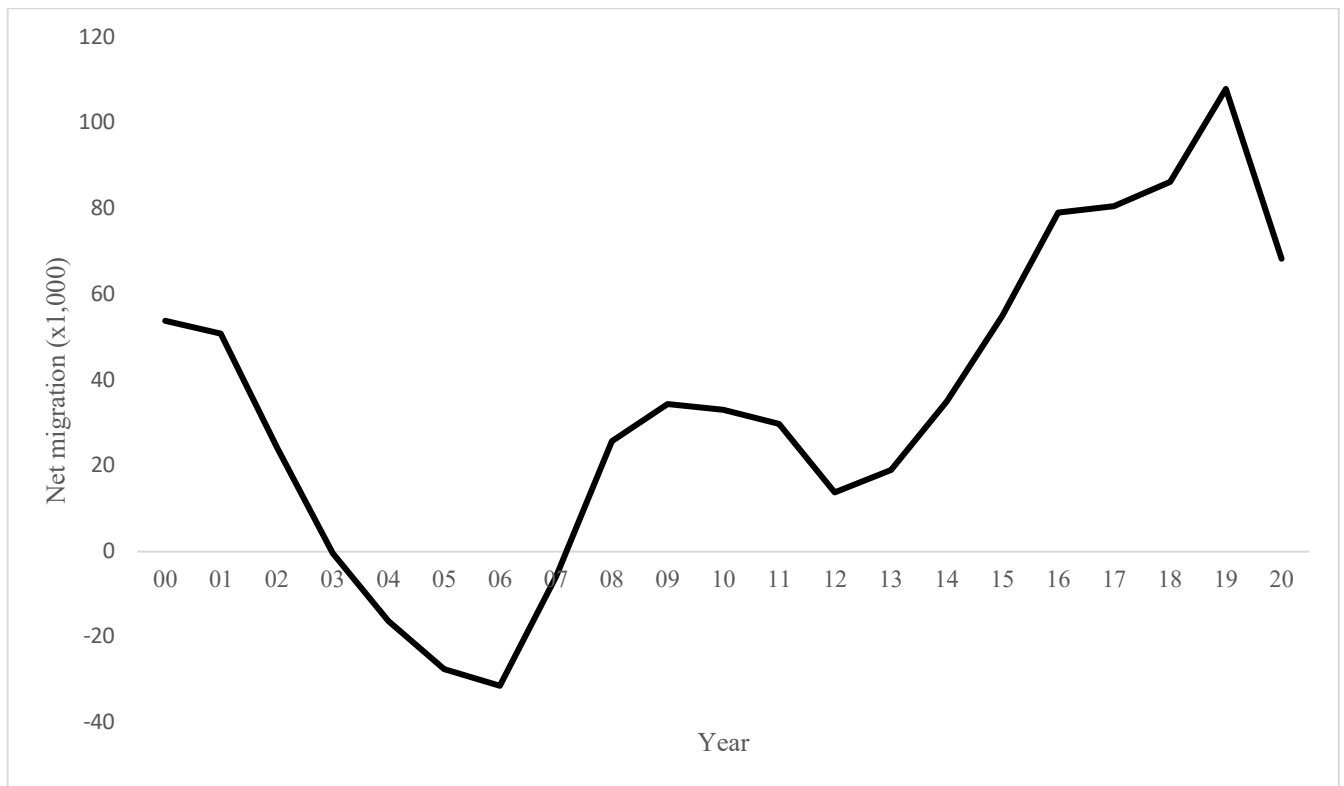
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**Appendix A: Net immigration (2000-2020)**

**Figure 2**

*Net migration towards the Netherlands*



*Notes.* The numbers on net migration were provided by Centraal Bureau voor de Statistiek (2021).

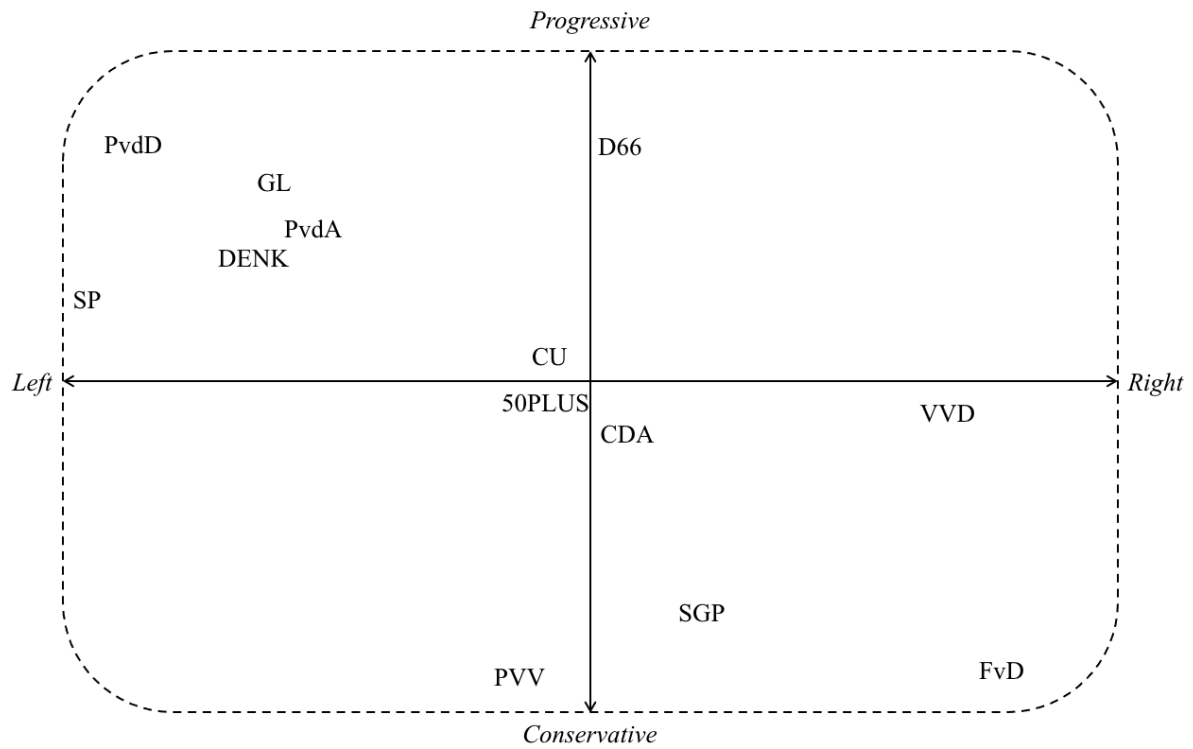


**Appendix B: Political parties in the Netherlands****Table 6***Dutch political parties*

Party	Description
CDA	Christian Democrats
PvdA	Labor Party
VVD	Liberal Party
SP	Socialist Party
GL	Green Left Party
D66	Social-Liberal Party
PVV	Freedom Party
CU	Christian Union
PvdD	Animal Welfare Party
SGP	Christian Reformed Party
50Plus	Elderly Party
FvD	Right Conservatives
DENK	Left Multicultural Party

**Figure 3**

*Dutch political spectrum*



*Notes.* This figure represents the positions of the parties in the political spectrum in 2021. The positions of the parties may change a bit over time, but these positions are the most recent ones.<sup>14</sup>

<sup>14</sup> Position of the parties in the political spectrum retrieved from Kieskompas (n.d.).

**Appendix C: Comparing voting shares of the sample with and without controls****Table 7***Comparing voting shares of the population with and without controls*

(1)	(2)	(3)	(4)
Party	Mean voting shares without controls	Mean voting shares with controls	$\Delta$
VVD	21.73 (41.25)	21.47 (41.08)	0.26 (1.18)
PVV	18.24 (38.63)	20.54 (40.42)	-2.30** (1.15)
CDA	11.69 (32.14)	12.50 (33.08)	-0.81 (0.94)
D66	13.12 (33.77)	12.31 (32.87)	0.81 (0.95)
GL	8.29 (27.57)	8.17 (27.40)	0.12 (0.79)
SP	5.94 (23.64)	5.51 (22.82)	0.43 (0.66)
PvdA	6.35 (24.38)	7.43 (26.23)	-1.08 (0.74)
CU	4.41 (20.53)	4.27 (20.22)	0.14 (0.58)
PvdD	2.16 (14.55)	2.23 (14.76)	-0.06 (0.42)
50Plus	20.20 (14.07)	1.86 (13.50)	0.16 (0.39)
SGP	2.04 (14.14)	1.98 (13.94)	0.06 (0.40)
DENK	0.47 (6.84)	0.19 (4.31)	0.28* (0.14)
FvD	0.35 (5.88)	0.37 (6.08)	-0.02 (0.17)
<i>N</i>	4,900	1,616	

*Notes.* Robust standard errors in parenthesis.\*\*\* $P < 0.01$ , \*\* $P < 0.05$ , \* $P < 0.10$ .

**Appendix D: deriving the equation for individual fixed effects**

**D.1 General equation panel data**

The most general form of an equation to measure the effect I am interested in using panel data looks as follows:

$$Vote_{p,i,t} = \alpha_i + \gamma_t + \sum_{k=-A}^{B-1} (\rho_k * PS_i[K_{i,t} = k]) + \rho_B * PS_i[K_{i,t} \geq B] + \varepsilon_{it} \quad ^{15} \quad (4)$$

Where  $P_{p,i,t}$  is a dummy variable for political party p which is 1 if individual i voted for this party in period t and 0 otherwise. Where  $\alpha_i$  is the individual fixed effect.  $\gamma_t$  is a time dummy which captures the time effect on  $Vote_{p,i,t}$ .  $K_{it}$  denotes the time to event.  $K_{it}=0$  represents the treatment period ( $K = -1$  one period before and  $K = 1$  one period after treatment). The first term after the summation sign in parenthesis includes event time dummies for every single period. Hence, the period before treatment has a certain coefficient, the treatment period has a certain coefficient, the period after treatment has a certain coefficient, etc. I allow these effects form -A until B-1. After B, I assume the treatment effect to be constant, i.e., it does not vary over time. The second term after the summation sign captures the treatment effect. Hence,  $\rho_k$  measures the effect of a certain period relative to the treatment and  $\rho_B$  measures the treatment effect. The problem here is that I can never estimate this equation since for a given individual calendar time and relative time to the event are perfectly collinear: time increases with one year, but the time to event also increases with one year.

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<sup>15</sup> Retrieved from Van Kippersluis (2021b), not publicly accessible

## D.2 Individual fixed effects

I can still use equation (4) to estimate the effect, but I will have to make a small adjustment. An individual fixed effects model imposes  $A = B = 0$ . This basically means that it does not allow for any anticipation before the treatment and that there is no dynamic pattern. This means that there is one treatment effect, namely  $\rho_B$  and it appears right after the treatment, i.e., at  $K = 0$ , at the time of treatment. In this case with “treatment”, I mean within individual variation in political satisfaction over time.

The following equation remains:

$$Vote_{p,i,t} = \alpha_i + \gamma_t + \rho_B PS_{i,t} [K_{i,t} \geq 0] + \varepsilon_{i,t} \quad (5)$$

This equation can be estimated for multiple time periods:

$$Vote_{p,i,t} = \alpha_i + \gamma_t + \rho_B PS_{i,t} + \varepsilon_{i,t} \quad (6)$$

$$Vote_{p,i,t-1} = \alpha_i + \gamma_{t-1} + \rho_B PS_{i,t-1} + \varepsilon_{i,t-1} \quad (7)$$

If I want to know the difference in  $Vote_{p,i,t}$  over time due to the variation in PS, I have to subtract equation (7) from equation (6). The following equation remains:

$$\begin{aligned} Vote_{p,i,t} - Vote_{p,i,t-1} = \\ \rho(PS_{i,t} - PS_{i,t-1}) + (\gamma_t - \gamma_{t-1}) + \eta(X_{i,t} - X_{i,t-1}) + (\varepsilon_t - \varepsilon_{t-1}) \end{aligned} \quad (8)$$

What stands out is that the  $\alpha_i$  term cancels out, this means that I do not have to measure time-invariant omitted variables. This term captures all individual specific characteristics.

**Appendix E: descriptive statistics of the political satisfaction determinants****Table 7***Averages of political satisfaction scores (0-10) over the past elections, Table 1 respondents*

(1)	(2)	(3)	(4)	(5)
Political satisfaction determinant	2006	2010	2012	2017
Government	5.37 (1.81)	5.73 (1.94)	5.01 (2.18)	5.55 (2.05)
Parliament	5.44 (1.69)	5.84 (1.76)	5.17 (2.10)	5.63 (2.01)
Politicians	4.99 (1.72)	5.29 (1.73)	4.63 (2.05)	4.98 (2.01)
Political parties	4.96 (1.73)	5.20 (1.71)	4.60 (2.03)	4.89 (1.99)
Democracy	6.38 (1.64)	6.46 (1.63)	6.13 (1.89)	6.34 (1.83)
Political satisfaction index	5.43 (1.54)	5.70 (1.51)	5.11 (1.87)	5.48 (1.82)
<i>N</i>	1,225	1,225	1,225	1,225

*Notes.* 0 means the lowest satisfaction possible and 10 means the highest satisfaction possible concerning the corresponding determinant in column 1. Standard errors shown in parenthesis.

**Table 8***Averages of political satisfaction scores (0-10) over the past elections, Table 2 respondents*

(1)	(2)	(3)	(4)	(5)
Political satisfaction determinant	2006	2010	2012	2017
Government	5.36 (1.90)	5.95 (1.93)	5.07 (2.29)	5.44 (2.14)
Parliament	5.44 (1.76)	6.07 (1.76)	5.31 (2.15)	5.61 (2.08)
Politicians	5.04 (1.83)	5.47 (1.73)	4.65 (2.06)	4.97 (2.08)
Political parties	4.98 (1.83)	5.33 (1.72)	4.67 (2.07)	4.86 (2.05)

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Democracy	6.47 (1.60)	6.59 (1.63)	6.17 (1.85)	6.41 (1.81)
Aggregated satisfaction	5.46 (1.61)	5.88 (1.52)	5.18 (1.90)	5.46 (1.87)
<i>N</i>	404	404	404	404

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*Notes.* 0 means the lowest satisfaction possible and 10 means the highest satisfaction possible concerning the corresponding determinant in column 1. Standard errors shown in parenthesis.

**Appendix F: Calculation of standard errors of Table 4**

The LISS dataset was implemented in Stata, where I made dummies for every political party. This software automatically calculates the standard errors of the voting shares for each party when I ran the command *Summarize [party]*. Data on the standard errors of the voting shares per party in the real elections is not provided by any source online and I do not have access to the real election results database. Therefore, I had to calculate the standard errors by hand. The formula for calculating the variance is as follows:

$$S_p^2 = \frac{(x_{p1}-\bar{X}_p)^2+(x_{p2}-\bar{X}_p)^2+ \dots+(x_n-\bar{X}_p)^2}{n-1} \quad (9)$$

$$\text{Standard error} = \sqrt{S^2} \quad (10)$$

Where  $S_p^2$  is the variance of party p, where  $X_{pi}$  is the vote of individual i on political party p.  $\bar{X}_p$  is the mean of the voting shares is party p. n is the total number of votes.  $X_{pi}$  is binomial: it takes the value 1 if someone voted for a certain party and it takes the value 0 otherwise. Therefore,  $\bar{X}_p$  is equal to the share of votes of party p. Wikipedia (see references) provided the total number of votes and the number of votes on a certain party. This allowed me to calculate the standard errors. The formula of the variance in case of binomial variables can be rewritten as:

$$S_p^2 = \frac{(1-\bar{X}_p)^2 \cdot \theta_p + (0-\bar{X}_p)^2 \cdot (n-\theta_p)}{n-1} \quad (11)$$

Where  $\theta_p$  is the number of votes on party.



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