

# Voter trust in the Netherlands between 2006 and 2010

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**Abstract:** *In this paper the trust of Dutch voters in the election process is examined. Since the Parliamentary elections of November 2006, large changes have surrounded the Dutch election process. The widely used voting machines that were introduced in the Netherlands in 1966 were decertified in 2007, causing a return to paper ballot voting. Discussions took place both in the media and in Parliament on election technologies and the trustworthiness of the election process. However, based on survey data of the last two Dutch elections, these discussions so far have not significantly influenced the trust of voters in the election process. Furthermore, more voters still prefer the use of voting machines and feel that these machines are trustworthier than paper ballots. The presence of a 'winner-loser' effect on trust in the election process is not found for the Netherlands. In the meantime, some demographic variables are found that influence the trust in the election process. In the Netherlands, male voters have slightly higher levels of trust than female voters. Young voters are more trusting than older voters. Higher educated voters and voters with a higher personal income level show higher levels of trust. Voters who attend religious services on a regular basis also have higher levels of trust in the election process. However, the influence of these demographic factors is not very large. Further research will be necessary to develop a more accurately prediction model for Dutch voter trust.*

**Keywords:** e-voting, paper ballots, voter trust, the Netherlands

**I**n democracies, the trust of voters in the election process is of great importance. Elections are the link between citizens and their elected officials. If voters have doubts whether their votes are counted correctly and the results that are announced match the voter's intent, then the most fundamental aspect of the democratic system, the direct election of the leaders is in danger (Alvarez, Hall, and Llewellyn 2008; Atkeson and Saunders 2007). The legitimacy of those who are elected weakens when these doubts arise. This could ultimately undermine the strengths of the democratic process and institutions in a country. Most modern democracies have had times where the voters questioned the election process (Lehoucq 2002).

The United States experienced this after the 2000 election where it was unclear for a long period whether George W. Bush or Al Gore had won the election. In the United Kingdom, the introduction of postal voting led to allegations of election fraud among others in Birmingham in 2005. These allegations were proven true in several court cases (Stewart 2006). In the Netherlands, the election process was for a long time seen as functioning very well. However, in the municipal elections of March 2006, a candidate who was also a member of the polling station was subject of suspicion of fraud, since he obtained a very high number of preferential votes in his own polling station, compared to the other polling stations in the municipality. Real issues with voter trust rose during

the summer of 2006, when the Netherlands was preparing for parliamentary elections. A NGO called “we don’t trust voting computers” showed that the voting computers that were used in most of the Dutch polling stations could be hacked, as to alter the final results. Just before the parliamentary elections in November 2006, the voting computers from one company were decertified by the government and could not be used. Twenty-two municipalities voted with paper ballots, 421 municipalities still used voting computers. After the elections, the debate on the trustworthiness of the voting machines continued in Parliament. Ultimately, in 2007, the government decided to abandon the use of voting computers in the election process completely (Loeber 2008). During the 2009 European Parliamentary elections all voters voted through paper ballots.

After the Dutch municipal elections of March 2010, the question whether or not to use electronic voting again became a topic of debate (Hall and Loeber 2010). During these elections, which were held with the use of paper ballots, issues regarding recounts and the amount of time it took to count the ballots arose. Fifteen municipalities, including Rotterdam, the second largest city in the Netherlands, recounted all their votes, which in some cases led to a seat being awarded to a different party. Parties that felt they had been the victim of the problems with the paper ballots did try to raise the issue of trustworthiness of the electoral process. They called for the return of electronic voting.

Other issues that influenced the opinion on the integrity of this election were the large use of proxy votes and violations of vote secrecy due to the fact that in several cases, voters were in the polling booth together while casting their votes.<sup>1</sup> These issues are less connected to the voting technique that is being used, but more to the election process in general. Although the Dutch municipal elections of March 2010 seemed to turn into a politicized debate on the trustworthiness of the election process, this did not lead to a discussion within parliament on a reform of the election process. The decision to return to paper ballot voting after the parliamentary elections of November 2006 did lead to increased attention to poll worker training and procedures that are used by the municipalities in their preparation of the elections (Loeber 2008). In June 2010 parliamentary elections were held. Again, all voters voted by paper ballot. During these elections, fewer problems surfaced with regard to the election process, such as recount issues and problems with proxy voting. On December 9<sup>th</sup> 2010 a debate took place between the Minister of the Interior and the Parliamentary Committee for the Interior on the election process. Only two parties expressed an interest in a return to voting machines. The trust in the election process was not a topic of debate.<sup>2</sup>

Both during the parliamentary elections of November 2006 and June 2010 a Dutch Parliamentary Election Study took place. In this study voters were asked a number of questions with regard to the elections, including questions on the trust these voters had both in the election process in general and in the different types of voting technologies that were or could be used. With the use of this data, I will examine whether the trust of the Dutch voters in the election process has changed between 2006 and 2010. Because of the controversies surrounding the March 2010 municipal elections, which received a lot of media attention, my hypothesis is that the trust of voters in the election process will have declined since 2006. I will also examine which factors influence the trust of Dutch voters in the election process.

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1 <http://www.nd.nl/dossiers/politiek/gemeenteraadsverkiezingen-2010> (in Dutch only, accessed November 20th, 2010).

2 [www.tweedekamer.nl](http://www.tweedekamer.nl) (in Dutch only, accessed last on December 11th 2010).

## 1. Literature review

Voter confidence in elections is a specific part of support for government in a democracy. Trust in government became a focus of political science scholars in the 1950s. Since then, scholars have noted a decline in the confidence levels both in the United States and Europe (Dalton 1999). In theory, the higher the level of government trust, the more stable a democracy will be. Lower levels of trust can lead to destabilization and economic insecurity (Atkeson and Saunders 2007).

Although there has been a great deal of attention to issues of trust in government in general, the study of trust in the election process seems to be neglected until recently (Alvarez and Hall 2006). An important question was how to measure the confidence voters have in the election process. Voter confidence is related to trust in government, but distinct in the way that voter confidence deals with the feelings voters have about the mechanism of choosing who will hold office. Voters can trust the election process and still feel that the person that was elected cannot be trusted and voters can trust the elected officials, but feel the election process lacked integrity (Atkeson, Alvarez and Hall 2010). Most of the work done in this area has focused on the United States. The 2000 presidential elections led to an increase in studies of voting technology and the process of voting in American elections (Hall and Loeber 2010; Stewart 2009). The measure that is used in most of these studies to measure public support for the mechanism of voting is voter confidence. This is defined as the confidence that a voter has that his ballot was counted correctly in the election (Alvarez and Hall 2004; Alvarez and Hall 2008).

The research on voter confidence has provided several factors that could influence the trust a voter has in the election process. Some of these factors are short term, others long term in character. There are social, economic and political factors that influence voter confidence. The first factor that is mentioned is known as the 'winner-loser' effect. For the United States, it has been shown that voters who voted for the candidate that won the election have higher levels of trust in the election process than voters who voted for a candidate that lost (Hall and Loeber 2010). Of course, the United States has a "winner-takes-all" election process that put a premium on winning, more so than is the case in the Netherlands, which has a proportional representation system that allows those who vote for other parties to still "win" if their party is included in the coalition. Moreover, often there is no clear winner because several parties gain some seats and several parties lose some seats compared to the previous election.

The experience a voter has while casting his vote is also an influencing factor on the level of trust of the voter. If a voter has problems casting his vote, does not understand the ballot or feels that poll workers were not trained well, the level of confidence goes down (Hall, Monson and Patterson 2009; Gronke and Hicks 2009). Finally, the method that a voter used to cast his ballot also influences trust. Absentee voters; voters who cast their vote in the United States before the election day, had significantly less voter confidence (Alvarez, Hall and Llewellyn 2008).

In the American context, several demographic factors have been found to influence voter confidence: education (Atkeson and Saunders 2007), race, gender, and age (Alvarez, Hall and Llewellyn 2008). Birch (2008), studying confidence in a transnational context found that socio-economic status and religiosity play a role in shaping confidence. These findings may be more reflective of the Dutch experience.

## 2. Data and Method

The data sets that are used in this study are the 2006 Dutch Parliamentary Election Study<sup>3</sup> (known in Dutch as the NKO 2006) and the 2010 Dutch Parliamentary Election Study (known in Dutch as the NKO 2010).<sup>4</sup> These studies are conducted in two waves before and after elections for Parliament interviewing the same group of persons. For each Study, persons are randomly selected out of the entire Dutch population. This means that it is possible that the same persons participate in different studies, but the chances of this happening are small. Selected persons are interviewed in person twice, a few weeks before the election and directly after the elections. These interviews are conducted at the homes of the participants. After the second interview, the participant is also asked to fill in a short written questionnaire. The Dutch Parliamentary Study contains nearly 700 questions on a wide range of subjects. The Dutch Parliamentary Election Study is conducted at each Parliamentary election in the Netherlands since 1971. During each study certain questions are added or removed, based on current events (Schmeets and Van der Bie 2008). During the 2006 Study a series of questions was added on voter trust, both on the elections in general, as well as on different voting methods. These questions were asked in the post-election wave of the study. The same questions were asked in the 2010 Survey. In 2006, 2806 persons participated in the Survey, in 2010 there were 2621 participants.

One of the questions is comparable to the question on voter confidence that is used in the United States. In the Dutch survey, voters were asked the following question: “How much trust do you have in general in a fair process of the election? The possible responses were: “very much”, “much”, “much nor little”, “little”, or “very little”.<sup>5</sup> In the coding scheme of the Election Study, very much trust is represented by 1 and very little trust by 5. For this study, this variable was recoded so that a score of 1 means that the respondent has very little trust and a score of 5 that a respondent has very much trust in the election process. In appendix 1 the questions, answer possibilities and coding of the variables that are used in this study are shown.

With regard to the technology that was used in the election, the Dutch Parliamentary Election Study does not provide information on how the voter cast his vote. In the 2006 election, 22 municipalities voted by paper ballot. The other 421 municipalities used a DRE machine build by a company called Nedap. A small group of voters voted from abroad.<sup>6</sup> They could vote via the Internet, by mail, in person in a polling station within the Netherlands and by giving a proxy vote. This means that the majority of the Dutch voters voted with the use of a direct-recording electronic (DRE) voting machine in 2006. However, since there is no data on the technology that a voter used during the 2006 elections, I cannot test whether this technology has an influence on voter confidence. In 2010 the use of voting machines was discontinued, as was the use of Internet voting. This means that all respondents in 2010 voted through paper ballots.

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3 The questionnaires of the Dutch Parliamentary Election Study 2006 are available on [http://www.dpes.nl/pages/nko\\_2006.php](http://www.dpes.nl/pages/nko_2006.php) (Dutch only). The data is available through <http://easy.dans.knaw.nl>.

4 The questionnaires of the Dutch Parliamentary Election Study 2010 are available on [http://www.dpes.nl/pages/nko\\_2010.php](http://www.dpes.nl/pages/nko_2010.php) (Dutch only). The data has not been made public yet. The data set used in this paper is the original data that is collected by Statistics Netherlands (CBS) and organisation of the Dutch Parliamentary Election Study. Because the data set is not finalized yet, it is possible that the data in the set will undergo some changes in order to rectify mistakes made during the reporting process.

5 This question is slightly different than the question used in the American context but taps the same construct (see Hall and Loeber 2010).

6 Around 30.000 voters voted from abroad, 19.815 voters used the Internet voting option, 8.366 voted through mail.

First, the level of trust of all the voters in the election process will be determined for 2006 and 2010. In light of the discussions surrounding the use of different election technologies that were held between 2006 and 2010 and the problems with the use of paper ballots in the March 2010 municipal elections, I come to the first hypothesis.

Hypothesis 1: The trust of voters in the election process will be higher in the 2006 elections compared to the 2010 elections.

Second, to measure the effect of the debate on the use of voting machines in the Dutch election process, the trust of voters in both voting machines and paper ballots will be determined for 2006 and 2010. Since voters were also asked which method they prefer and in which method they had more trust when comparing the two, the answers to these questions will be compared for 2006 and 2010. The assumption is that voters have more trust in a voting technology they have used before (Stewart, Alvarez and Hall 2010). The fact that in 2006 most voters were not used to voting by paper ballot, whereas the parliamentary election of 2010 was the third election in which only paper ballots were used leads to my second hypothesis.<sup>7</sup>

Hypothesis 2: The trust in voting machines will have decline between the 2006 elections and the 2010 elections and the trust in paper ballots will have remained the same or gone up during this period.

To measure the possible influence of the winner-loser effect, I compare the party choice with the expressed level of confidence. Because the questions on confidence in the election process were asked after the results of the election were made public, a voter knew when answering whether his party had won or lost. In the elections of 2006, the big winners were the Socialist Party (SP), the Christians Union (CU), the Party for Animals (Partij voor de Dieren), and the Freedom party (PVV). Big losers were the Labor Party (PvdA), the Liberals (VVD), the Democrats 66 (D66), and the list of Fortuyn (LPF). In 2010 big winners were the PVV, the VVD and D66, big losers were the Christian Democrats (CDA) and the SP. The levels of trust of voters per party are then compared. Based on the findings in the United States on a winner-loser effect, I can expect:

Hypothesis 3: There will be a “winner’s effect” in the Netherlands; voters who vote for a party that won more seats in the election than it had before will have a higher level of confidence than other voters.

For the demographic variables I include those that in previous research have shown to influence the level of trust. This means that I will include in this study the variables sex, age, education, personal income level, the fact whether a voter considers himself as religious and how often the voter attends a religious service. I recoded two of these variables from the Election study database. For this study, I used these same age categories that were used by Alvarez, Hall and Llewellyn (2008). Age is therefore coded as follows: 1 = 18-29, 2 = 30-39, 3 = 40-49, 4 = 50-65 and 5 = 66 and above. The variable attendance of religious services was also recoded. In the code scheme of the Election study, 1 represents attendance of religious services once a week or more and 5 (almost) never. For this study, this coding scheme is reversed, with 1 meaning (almost) never and 5 meaning once a week or more.<sup>8</sup> Based on the findings by Alvarez et. al. in the United States on the influence of sex and age on the levels of confidence, I expect (Alvarez, Hall and Llewellyn 2008):

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7 The other two elections were the 2009 European Parliament elections and the March 2010 municipal elections. Turnout in the EP elections is low at 30%, turnout in the municipal elections is usually around 60%, turnout for parliamentary elections is 80% on average. For some voters, the parliamentary elections of 2010 therefore will have been their first elections on paper ballot.

8 See appendix 1 for the coding of all the variables used.

Hypothesis 4: Women will have lower levels of confidence than men.

Hypothesis 5: Young voters will have higher levels of confidence than older voters.

Factors that have had a constant significant influence on voter confidence are social-economic status and religiosity (Birch 2008). Birch (2008) finds that members of a religious minority in some countries have lower levels of trust in the election process. According to the data on religiosity in 2009, 44% of the Dutch citizens are not religious, 28% are a member of the Roman Catholic Church, 6% belong to the Protestant Church, 9% are Dutch Reformed, 3% are Reformed and 10% belong to other religions.<sup>9</sup> This means that all persons in the Netherlands, who state that they are religious, are members of a religious minority. This leads to the final two hypotheses.

Hypothesis 6: Voters with higher income levels will have a higher level of trust than voters with lower income levels.

Hypothesis 7: Voters with a higher level of education will have a higher level of confidence than voters with lower levels of education.

Hypothesis 8: Dutch voters who are part of a religious minority will be less confident than are voters who are not.

To test the influence of the demographic variables, I use a multiple regression model.

### 3. Results

In 2006 78.9% of the voters expressed having much or very much trust in the election process in general. In 2010 this number was 76.8%. This means that there was almost no change in the trust the voters had in the election process between the 2006 Parliamentary election and the 2010 Parliamentary election. The switch from the use of voting machines to paper ballots apparently did not have a significant effect on voter trust. My first hypothesis therefore is not supported by the data.

However, the results show that the level of trust in voting machines went down between 2006 and 2010. In 2006, 83.6% of the voters expressed much or very much trust in voting machines, to only 69.3% in 2010. Trust in ballot paper became slightly higher in 2010. In 2006, 76.3% of the voters had much or very much trust in paper ballots; in 2010 this number was 79.6%. This data confirms my second hypothesis. It seems that the problems with the paper ballots in the March municipal elections of 2010 did not cause an issue of trustworthiness with paper ballots for the voters in the June 2010 parliamentary elections. Also, the level of trust expressed in paper ballots in 2010 is higher than the level of trust expressed in voting machines, whereas in 2006 this was the other way around. Further research in this area is necessary, but this data supports the assumption that voter trust in a voting technology is affected by the technology that voters actually use during the elections.

What is of interest is that this apparent higher level of trust in paper ballots is not reflected in the preferred voting technology of voters. In 2006 56.1% of the voters preferred a voting machine to a paper ballot and 13.3% preferred the paper ballot to a voting machine. In the 2010 Study 46.7% preferred the voting machine and 24.3% expressed a preference for the use of paper ballots. When it comes to comparative trust between voting machines and paper ballots, the picture becomes even more diffused. In 2006 33.6% of the voters stated that they had higher levels of trust in a voting machine than in paper ballots. 11.4% expressed the reverse; they found paper ballots more trustworthy. In 2010 27.2% of the voters found in a direct comparison the voting machine more trustworthy than paper ballots and 21.6% had higher levels of trust in paper ballots

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<sup>9</sup> Data available through Statistics Netherlands (CBS) to be found on [www.cbs.nl](http://www.cbs.nl).

compared to voting machines. There seems to be a contradiction between these numbers and overall levels of trust in voting machines and paper ballots in 2010 as reported above. When asked only to rate a specific voting technology, the voters in the 2010 Dutch Parliamentary Election Study expressed more trust in paper ballots than in voting machines. However, when asked to compare paper ballots and voting machines, voters find the voting machines more trustworthy. To discover the reason for this contradiction more research would be necessary. In the light of the current discussion in the Netherlands whether or not to reintroduce the use of voting machines, it would be very useful to investigate this issue.

Figure 1 shows the expressed trust of voters for different parties in the election process for the 2006 elections.

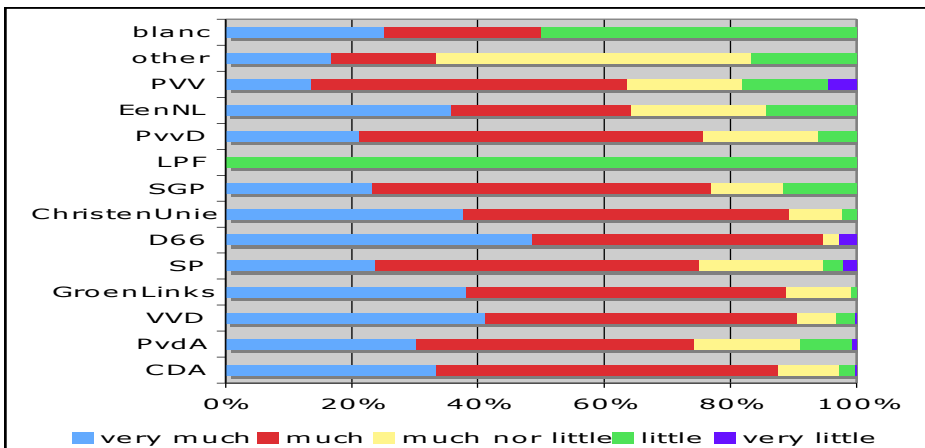


Figure 1: Trust in elections process of voters per party in 2006

Figure 2 shows the same information for the 2010 elections.

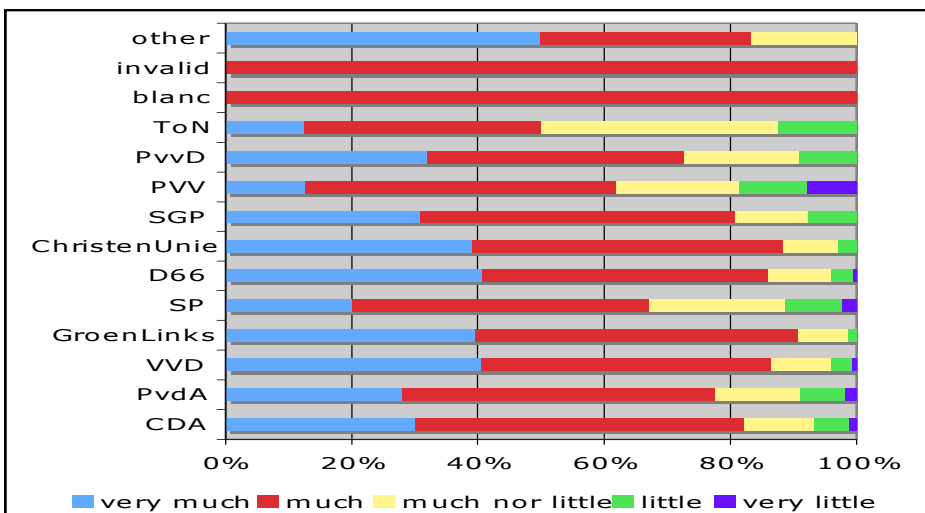


Figure 2: Trust in election process of voters per party in 2010

The figures show that there is no clear 'winner-loser' effect on trust in the election process. From the big winners in 2006, the SP and PVV show lower levels of trust than the average voter, the Party for the Animals an average trust level and the ChristenUnie a slightly higher level of trust. The big losers show the same diffuse picture for 2006, the PvdA and LPF do show lower levels of trust, but the VVD and D66 voters express higher levels of trust than the average voter. In 2010 again there is no clear influence of the party voted for and the trust in the election process. Voters

who voted for the PVV the biggest winner, show very low levels of trust. Voters for the other two winning parties, the VVD and D66 show higher levels of trust. The voters who voted for the CDA, which lost half its seats, have an average trust level, whereas voters who voted for the SP, the other losing party have slightly lower levels of trust, compared to the average voter. This means that the data does not support my third hypothesis that voters who voted for a winning party would show higher levels of trust than voters who voted for losing parties.

Finally, I used a multiple regression model to test whether the demographic variables are of influence on voter trust. For 2006 the results are shown in table 1 and for 2010 in table 2.

**Table 1: demographic variables and voter trust in the election process 2006**

	<b>B</b>	<b>SE B</b>	<b>β</b>
Constant	3.265	0.195	
Age	-0.005	0.020	-.009
Sex	-0.182	0.057	-.109**
Religious	0.113	0.085	.043
Attendance religious services	0.067	0.017	.127*
Highest education completed	0.160	0.024	.240*
Personal income	0.020	0.005	.139*

Note:  $R^2 = .148$  ( $p < .001$ ). \*  $p < .001$  \*\*  $p < .05$ .

**Table 2: demographic variables and voter trust in the election process 2010**

	<b>B</b>	<b>SE B</b>	<b>β</b>
Constant	3.412	0.247	
Age	-0.053	0.025	-.079**
Sex	-0.155	0.073	-.086**
Religious	0.005	0.094	.002
Attendance religious services	0.053	0.021	.093**
Highest education completed	0.185	0.030	.249*
Personal income	0.018	0.007	.114**

Note:  $R^2 = .134$  ( $p < .001$ ). \*  $p < .001$  \*\*  $p < .05$ .

Both in 2006 and 2010  $R^2$  is significant. This means that the demographic independent variables have a significant influence on the dependent variable, the level of trust in the election process. However, this influence is not very large. In 2006 14.8% of the changes in the trust level are explained by the independent variables in the model. In 2010 these variables cause 13.4% of the changes in the dependent variable. Of the independent variables in 2006 the variable 'religious' does not have a significant influence on the level of trust. The 2010 model confirms this finding; again the variable 'religious' is not significant. This means that my eighth hypothesis is not true. However, the frequency of attendance of religious services is a significant variable, both in 2006 and 2010. Both in 2006 and 2010 the direction of this influence is positive; the higher the frequency of visits to religious services, the higher the level of trust in the election process. In 2006 this influence is significant at the  $p < .001$  level, in 2010 at the  $p < .05$  level.

The factor age is not a significant influence in the 2006 model, but in the 2010 model, its influence on the dependent variable is significant at the  $p < .05$  level. The direction is negative; this means that higher age groups have less trust in the election process. This data supports the fifth hypothesis. The independent variable sex has a significant influence on the dependent variable both in the 2006 election and the 2010 election. For both models, the significance level is at the  $p < .05$ . The direction is negative in both models. Since the variable is coded 1 for male and 2 for female, the negative direction means that female voters have less trust in the election process than male voters, supporting the fourth hypothesis. The variable highest education completed is significant at the  $p < .001$  level for both the 2006 and the 2010 model. The direction of the influence of this variable on the dependent variable is positive, meaning that the voters who have completed a higher level of education have more trust in the election process than voters with a lower level of completed education. The direction of the influence of the variable personal income level after taxes is also positive; voters with a higher personal income express more trust in the election process than voters with a lower level of income. For 2006, this difference is significant at the  $p < .001$  level, in 2010 at the  $p < .05$  level. This finding confirms my sixth and seventh hypotheses.

#### **4. Conclusions**

Voter confidence in election results is of the utmost importance for the legitimacy of the chosen legislators. When the trustworthiness of the techniques and methods that are used during the elections become subject of debate, this can have a negative impact on the confidence of voters. Traditionally, the election process in the Netherlands has not been the subject of a lot of attention, not from the media, nor from the public. The introduction of electronic voting in the 1960s went relatively smoothly and in March 2006 99% of the Dutch voters voted with DRE's. In 2004 and 2006 experiments were held with Internet voting for voters from abroad and Parliament was asking for nationwide introduction of Internet voting. However, this broad support for electronic voting in Parliament diminished due to the campaign of the NGO 'we don't trust voting computers'. This NGO actively used the media in their campaign against voting computers and Internet voting. Besides from newspaper articles, they also managed to broadcast their hacking of a voting computer on one of the public television channels. Most voters are in all likelihood exposed to some of the doubt this NGO expressed in the trustworthiness of voting machines. All voters were exposed to the results of the campaign when Parliament decided to abandon the voting machines and the use of Internet voting and return to paper ballot voting (Loeber 2008). For a large number of voters, the June 2010 elections were the first Parliamentary elections in which they had to cast their vote by paper ballot.

However, the change in voting technology, the negative attention in the media and debates in parliament on the election process apparently have not had impact on the trust voters have in the election process. In 2006, 78.9% of the voters expressed to have much or very much trust in the election process. Although this number is lower than levels of trust found in American studies (Alvarez, Hall and Llewellyn 2008), the large majority of the Dutch voters trust the election process. The level of trust also has not significantly declined between 2006 and 2010, since in 2010, 76.8% of the voters had much or very much trust. The debate that was held in Parliament and the media on the trustworthiness of the election process during this period did not lead to lower levels of trust.

The trust that voters have in different voting technologies however did change between 2006 and 2010. Trust in voting machines declined and trust in paper ballots increased a little. Since most voters voted on a voting machine during the 2006 elections and all voters voted on paper ballot during the 2010 election, this might indicate that voters trust a voting technology they know and used. However, the data on the preference of voters and the expressed trust when paper ballots and voting machines are compared show a different picture. In 2006 a clear majority of the voters

preferred the voting machine. Even though this majority has declined, even in 2010 more voters prefer a voting machine to the use of paper ballots. Also, more voters feel that voting machines are trustworthier than paper ballots, both in 2006 and 2010. It might be that because of the long history of the use of voting machines in the Netherlands, voters feel more comfortable with voting machines. It could also be that the problems with the paper ballots during the March 2010 municipal elections caused the feeling that voting machines are better than paper ballots. Based on the existing data, it is not possible to draw an informed conclusion on the contradictions in the answers of voters on the trust in voting machines, paper ballots and the comparison between these technologies. Further research would be necessary to explain this contradiction in the levels of expressed trust in the different technologies and the levels of trust when the technologies are directly compared.

There is no 'winner-loser' effect on voter trust in the Dutch context. An explanation for the absence of this effect might be found in the electoral system of the Netherlands. The Dutch system of proportional representation coupled with coalition government means that even parties that lost seats in the election can become part of the government. Winning or losing in the elections is therefore more relative in the Netherlands than in countries with a 'winner takes all' system such as the United States (Hall and Loeber 2010). Although there are differences in the levels of trust between voters for different parties both in 2006 and 2010, these differences cannot be explained by looking at the 'winner-loser' effect. Further research is necessary to find the causes for these differences.

Finally, although demographic factors explain some of the differences in the trust voters have in the election process, the influence of these demographic variables on the trust level is not very large. Male voters have slightly higher levels of trust than female voters. Young voters are more trusting than older voters. Higher educated voters and voters with a higher personal income level show higher levels of trust. Voters who attend religious services on a regular basis also have higher levels of trust in the election process.

Since the influence of the demographic variables that were included in this study on voter trust is limited, it would be useful to look at other factors that might explain the differences in trust in the election process. Possibly in the Netherlands, there is a correlation between trust in the election process and trust in other governmental and public institutions. In the Dutch Parliamentary Election Study, respondents are asked how much trust they have in different national and international institutions such as the press, the army, judges, the European Union and NATO. In future research, the answers to these questions could be compared to the level of trust in the election process. Another topic of further research could be the relationship between trust in the election process and political and social participation of a voter. This study showed that the regular attendance of religious services increases the trust in the election process. It might be useful to see whether factors such as the membership of a political party, trade union or other types of organizations have a similar impact on trust in the electoral process.

The aim of this paper was to give some insights into the trust of Dutch voters in the election process. The level of trust has not changed significantly between 2006 and 2010. Although some factors were found that influence voter trust, further research will be necessary to develop a more accurate prediction model for Dutch voter trust.

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## Appendix 1: Variables used from the Dutch Parliamentary Election Studies 2006 and 2010

For all the variables, first the label is mentioned as used in the Election Study. Then the name used in 2006 and the name used in 2010 are shown. Finally, the coding used in the Election Study is mentioned.

Trust in elections general: v582, algemeen. Coding: 1 = very much, 2 = much, 3 = much nor little, 4 = little, 5 = very little.

Trust in voting machines: v575, StemComp. Coding: 1 = very much, 2 = much, 3 = much nor little, 4 = little, 5 = very little.

Trust in ballot paper: v576, Papier. Coding: 1 = very much, 2 = much, 3 = much nor little, 4 = little, 5 = very little.

Prefer voting machine or ballot paper: v577, Voorkeu2. Coding: 1 = voting machine, 2 = ballot paper, 3 = no preference.

Trust voting machine compared to ballot paper: v578, Betrouw. Coding: 1 more trustworthy, 2 = less trustworthy, 3 = no difference.

Party voted for in 2006 parliamentary elections: v512, WelkPart. Coding: differs in 2006 and 2010 because of different parties participating. Parties are named, also 'other party', 'blanc' and 'invalid'.

Sex of respondent: v420, M\_V. Coding: 1 = male, 2 = female.

Year of birth respondent: v421, LFTOP\_a. Coding: years from 1900 to 2003.

Respondent is religious: v425, gelovig. Coding: 1 = yes, 2 = no.

Attendance of religious services: v427, Kerkbez. Coding: 1 = once a week or more, 2 = 2 a 3 times a month, 3 = once a month, 4 = several times a year, 5 = (almost) never.

Highest education (completed) of respondent: v430, VLTopLop. Coding: -1 = currently elementary, 1 = elementary, 2 = lower vocational, 3 = secondary, 4 = middle level vocational, higher level secondary, 5 = higher level vocational, university.

Personal income (after taxes): v437, NP2008\_P. Coding: in each study 20 categories are named. In 2006 1 = < 2573 and 20 = > 58270. In 2010 1 = < 3068 and 20 = > 75830.

## **About the Author**

### *Leontine Loeber*

Leontine Loeber studied law and has worked as a legislative lawyer at the Ministry of the Interior and Kingdom Relations of the Netherlands. In this capacity she was responsible for drafting changes in the Election Law. After this, she worked at the Dutch Electoral Council, where among other tasks, she was involved with organizing elections. During this period, the Netherlands switched from e-voting to paper ballot voting. Currently Leontine works at the Council of State as a legislative lawyer. She is also finishing a master in Political Science at the University of Leiden. She has published some articles on e-voting in the Netherlands.