Determinants of Turnout in a Compulsory Voting Setting
Local Elections in Wallonia

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Introduction

The explanation of turnout has been done in numerous studies and for a variety of local, regional, national and supra-national elections (for an overview, see Geys, 2006), often in a cross-country comparison. Most of these studies tested the impact of institutional variables and of the electoral system on turnout. Yet, these studies seldom analyze electoral participation within one system (Geys, Heyndels, 2006: 368), particularly if this system presents some specific institutional or electoral characteristics. Compulsory voting is one of them.

In his meta-analysis, Geys (2006) lists 68 studies that tested the impact of compulsory voting on turnout. Among those studies, 61 confirm that compulsory voting leads to a higher turnout and Geys concluded that "the effect of compulsory voting on turnout is one of the robust findings in studies that analyse cross-national variation in voter turnout" (2006: 652). This effect has been empirically confirmed for national legislative elections (see for example Blais, Dobrzynska, 1998), for presidential elections (see for example Fornos, Power, Garand, 2004) or for regional elections (see for example Schakel, Dandoy, 2013), operationalizing this variable as a dummy but also in a more complex way (Fornos, Power, Garand, 2004). Additionally, compulsory voting does not only positively influence turnout, it is also viewed as a distorting effect on election outcomes (Moon et al., 2006). Yet, even if compulsory voting is expected to increase turnout, its effects largely depend on enforcement legislation (Fornos, Power, Garand, 2004). In some systems, the effect of compulsory voting is more due to a "sense of duty" rather than to a real coercion (Moon et al., 2006: 10).

But compulsory voting is not the only variable related to the electoral system that has proven to have an (significant) impact on turnout. The same applies to the proportional system. Following Blais and Carty (1990), we know that the system of transformation of votes into seats (i.e. mainly proportional representation vs. majoritarian system) has an

important effect on turnout. This has been for example proven by previous studies (Blais, Dobrzynska, 1998; Forrnos, Power, Garand, 2004; Geys, 2006). Similarly, voting age has a positive impact on turnout (Blais, Dobrzynska, 1998), meaning that systems where the minimum age for voting is 21 witness a higher turnout than systems where the minimum age is 18.

Belgium is the ideal case if one wants to analyze turnout while controlling for most of the effects of the electoral system (compulsory voting, PR and voting age), i.e. keeping them constant over time and across the territory. In this paper, we will analyze turnout for local elections in the Walloon region[1] of Belgium. Students of turnout believe that compulsory voting produces homogeneous participation rate, but this is far from being the case in Belgium. Dewachter and Lismont (1970) attempted to explain differences in turnout (as well as in the amount of invalid votes) for all local elections in Belgium between 1919 and 1968. More recently, Geys and Heyndels demonstrated that turnout rates vary considerably between Flemish municipalities in the local elections of 2000, allowing for an empirical analysis aimed at identifying the determinants of turnout (2006: 238).

We observe the same phenomenon for the local elections in the 262 Walloon municipalities in 2006 and 2012. Due to compulsory voting, turnout is high in Belgium and one of the highest in the world.[2] The average turnout for the local election in Wallonia was 93,76% in 2006 and 90,19% in 2012. But turnout is not only different across time but also different equal across municipalities. In Graphs 1 and 2, we present the distribution of turnout across the 262 Walloon municipalities. Turnout varies from a high 99,05% in Daverdisse in 2006[3] to a low 80,28% in Liège in 2012. Compulsory voting produces relatively high turnout rates that vary significantly across the Belgian territory. This paper aims to explain this variation.

Graphs 1 and 2 around here

Voting is compulsory in all policy levels of government in Belgium, but the study of local elections presents two main advantages. First, the number of municipalities permits a large N study, which is lacking in most studies of turnout at the national level. For example, in one of largest analysis of turnout in national elections for 91 countries between 1972 and 1995, Blais and Dobrzynska (1998) managed to deal with 'only' 276 elections. In this paper, we cover local elections in 262 municipalities in 2006 and 2012, which makes 524 elections.[4] Second, some of the variables traditionally used for

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[1] There are three main regions in Belgium: the Flemish region (308 municipalities), the Walloon region (262 municipalities) and the Brussels region (19 municipalities).

[2] See for example the world rankings of www.idea.int/.

[3] Out of the 1050 registered voters of Daverdisse, only 10 did not vote.

[4] We did not include by-elections that occurred in Brugelette in March 2013. Data collection for the 1994 and 2000 local elections are currently being collected.

explaining turnout are based on the national and not the district level. For example, the classic indicator used to measure the closeness of an election (i.e. the difference in vote shares between the two largest parties) only measures the impact of the overall systemic closeness. An election may very close at the national level, but not close at all in a number of electoral districts or vise versa (Blais, Dobrzynska, 1998: 249). The use of data based on the lowest policy level (the local level) allows controlling for these differentiated effects.

This paper is structured as follows. A first section reviews the characteristics of the electoral system for the local elections in Belgium. A second section lists the potential explanation of turnout by identifying three competing sets of hypotheses (institutional, political competition and socio-demographic). We will run a series of regression models explaining turnout and also invalid (blank) votes. A conclusion will summarize the main findings of this paper.

Electoral system in Belgium / Wallonia

Similarly to all other elections in Belgium (provincial, regional, community, federal and European, including by-elections), voting is compulsory for the local elections. Sanctions are minimal: a reprimand or a fine of 5 to 10 euros for the first infraction and a fine of 10 to 20 euros for the next infractions. After the fourth infraction within a period of 15 years, the voter is removed from the voting lists during 10 years and cannot receive a nomination, promotion or distinction from any public authority during this period. Overall these sanctions remain modest and can be viewed as an incentive rather than a requirement. It follows Moon et al. (2006: 10) that evaluate the effect of compulsory voting due to a "sense of duty" rather than to a real coercion.

Voters are automatically inscribed on the voting lists based on the registries of population in each municipality. Foreigners, including non-UE citizens have the right to vote in the local elections. If they want to participate in the elections, they need to register in their municipality more than three months before the elections. However, once they register, the legislation on compulsory voting fully applies for these foreigners and the sanctions (reprimand, fine, etc.) are the same as for the Belgians. Voting age is 18.

The electoral system is based on proportional representation with semi-open lists. Voters can either cast their ballot for their preferred candidate(s) or cast a vote for the entire list. The effects of the list vote (vs. the preferential vote) is reduced to one half. The local elections take place on the same day as the (second-order) provincial elections[5] and the voter has to cast two ballots (yet with no order). Computer-based

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[5] For more information on the 2006 and 2012 provincial elections (electoral system, parties, issues and results), see Dandoy (2013).

voting is used in 39 Walloon municipalities (out of 262). In these municipalities, the voter needs to vote first for the provincial elections and then for the local ones. Local elections take place every six years on the second Sunday of October.

Since 2006, there is gender parity on the list, i.e. the same amount of male and female candidates on the list[6] and both gender has to be represented on the first two places of the list. Seats are allocated based the Imperiali system, which tends to favour larger lists. There is no threshold. The number of seats in each municipality depends on the total population but the minimum number of seats per district is also regulated (a minimum of 11). The number of aldermen is also related to the size of the municipality, with a minimum of 3 and a maximum of 9 (in the city of Charleroi). The number of seats and of aldermen has been revised before the local elections of 2006 and 2012. As any other level in Belgium, the local executive needs to contain at least one woman and one man.

Overall, there are very few differences across the Walloon territory and across time regarding institutions and the electoral system for the local elections. Exceptions are to be found in the computer-based voting and the number of seats to be elected. The voter fatigue phenomenon is not expected to have an effect on turnout since the time since previous elections did not vary much. The 2006 local elections occurred 847 days after the 2004 regional elections while the 2012 local elections occurred 854 days after the 2010 federal (national) elections.

Hypotheses

Similarly to Blais and Dobrzynska (1998), we divided the explanatory factors into three competing sets of hypotheses: institutional, political competition and socio-demographic. Basic descriptive statistics if these variables are presented in the Appendix.

Electoral system

The impact of such variables should remain very limited as, *de facto*, we control for most of the effects of the electoral system (i.e. compulsory voting, PR system and voting age) on turnout. Yet, some other institutional elements have to be considered as potential explanatory variables. We have seen above that some municipalities implemented a system of computer-based voting. Even if this system does not require particular skills, we expect that some categories of the population (in particular older people) would feel more reluctant to go to the polling station if the voting act requires the use of a computer rather than a ballot paper. We expect that computer-based voting would

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[6] Whit the exception of the list composed of an uneven number candidates, including the lists composed of one single candidate.

reduce turnout.

Even if closely related to the size of the municipality (see the socio-demographic variables), the number of seats in the local assembly may have an impact on turnout. It is expected that voters will feel less concerned by elections if (s)he has the feeling that his/her vote would not have an impact on the electoral outcome. This is likely to be the case in large communities and in large cities.

Finally, there is a structural difference in terms of the amount of voters per polling stations. Polling stations are supposedly equally dispersed across municipalities. However, the amount of voters per polling station varies across municipalities: it is is larger in urban area and smaller in dispersed areas. This is not without consequence on the waiting time before being able to vote. We expect that voters - especially the experienced ones – would be discouraged to vote in municipalities where the average number of voters per polling stations is large.

Political variables: electoral competition

Political factors – and more particularly factors related to the party competition – have a large impact on turnout. Many studies underlined the fact that the expected benefit of voting is influenced by the probability of affecting the election results. The competitiveness of an election "increases uncertainty as to the electoral result and thereby strengthens elites' incentives to campaign as well as citizens' incentives to turn out and cast a ballot" (Gorecki, 2013: 236).

This competitiveness is often associated to the closeness of an election. If close election results are expected, it should increase the expected utility of voting and thereby the voter turnout. In addition, parties and candidates would invest more efforts and resources in the campaign of they believe that they can change the electoral outcome. The vote share difference between the first two parties in elections is the standard measure used in numerous studies (see for example Seidle, Miller, 1976; Kenney, Rice, 1985; Blais, Dobrzynska, 1998; Siaroff, Merer, 2002; Hajnal, Lewis, 2003; Franklin, Hobolt, 2011; Gorecki, 2013). The logic is that the smaller the votes difference between these two parties, the larger the competitiveness of the party system and therefore the higher the expected turnout.

Yet, the use of such measure in the Belgian case is without problems.[7] Blais and Lago (2009) demonstrated that that the impact of competitiveness of elections – based on this standard measure – on district-level turnout tends to vanish in PR systems with large district magnitudes (when district magnitude increases). They concluded that the "margin of victory is not a valid measure of competitiveness in a PR district" and that

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[7] Not to mention the fact that some authors - such as Fornos, Power and Garand (2004) - found out that this measure had no significant impact on turnout.

competitiveness needs to be measured differently in a PR system (2006: 95). Local elections in Belgium are based on a PR system (see above).

Another specificity of local elections in Belgium is that there is a huge variation in the party system of each municipality between two elections.[8] There are different dynamics at stake: local parties may change their name, split into different units or simply disappear; new local parties can be created or join an existing party; national parties can create an electoral alliance with a local or another national party; can change name or simply decide to not participate in the elections; etc. With very few exceptions (i.e. mainly in larger municipalities), the local party system for an election is not comparable to the one in the previous elections. As a result, it is impossible to link the two largest parties at time t-1 with parties at time t. In addition, given the specificities of the local level (no available opinion polls or surveys before the elections, particularly for small municipalities), the use of *ex post* measures of electoral closeness is not relevant, not to mention the fact that the use of *ex ante* measures generate a significantly higher success rate than the use of *ex post* measures (Geys, 2006: 648).

In the literature, other (alternative) measures of competitiveness have been be used, such as the effective number of parties in competition, the effective number of parliamentary parties, the number of parties with 3% of seats, the size of the largest party, the two-party vote concentration, the two-party seat concentration, and the seat ratio first to second party (Blais, Dobrzynska, 1998; Siaroff, Merer, 2002; De Winter, Sandri, Franssen, 2008; Franklin, Hobolt, 2011). Based on the assumption that parties that won the absolute majority of the votes in the previous elections would remain unchanged (unlike other types of parties are more likely to witness important changes – see above), we developed a first measure of political competition: the presence of a party that won the absolute majority of the votes in the previous elections. Blais and Dobrzynska (1998: 249) expect that elections that produce one-party majorities lead to a higher turnout.

The second measure concerns the number of parties in competition. This measure is used in numerous studies (see for example Blais, Dobrzynska, 1998; Hajnal, Lewis, 2003; Fornos, Power, Garand, 2004; Geys, Heyndels, 2006). This measure is based on two conflicting arguments. First, it is expected that a larger number of parties would give more choice for the voter and therefore produce a higher turnout. Second, it is expected that a larger number of parties should lead to a lower turnout. A fractionalized party system often requires coalitions but this process of coalition formation being unpredictable, voters may feel that they do not directly select the government (Fornos, Power, Garand, 2004: 914).

However, Geys and Heyndels (2006: 373) demonstrated that both the number of parties

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[8] Paradoxically, the national and regional party systems are very stable over time.

and size inequalities between parties have to be measured. In the context of the local elections, it is not rare to witness a large set of folkloric and tiny parties that participate in the elections. In some municipalities, out of the ten parties in competition, only four of them do seriously participate in the elections and manage to present a large number of candidates. Using the number of parties participating in the elections as standard measurement would artificially increase the competitiveness of the election. A solution is to look at the number of candidates participating in an election. In our example, four parties will present a full list of candidates while the remaining six will only propose tow or three individuals. Overall, the number of candidates mitigates the disproportionate effect of the number of parties. Elections with a smaller number of candidates may be more personal (especially in low-density areas) and lead to a lower turnout.

Concerning the type of parties that enter the electoral competition, Copus et al. underlined the importance of small and independent parties. They expect that these parties are able to galvanise political opinion and "act as a vehicle by which discontent can be signalled to political elites" (2009: 7). Following this latter argument, we believe that – in a compulsory voting setting – turnout can be related to the presence of so-called protest parties. Protest parties can attract the votes of the people that are discontent with politics or with mainstream parties and candidates. In Belgium, three types of parties can be identified as protest parties: the green parties (that advocate an alternative way of doing politics or that want to change the existing political culture) and radical-right and radical-left parties (that can also be labeled as anti-politics or anti-establishment parties).[9] Since we believe that a portion of voters do send a (protest) signal to established parties and candidates by not participating to the elections, we expect that these voters would reconsider their decision not to vote if one or several protest parties participate in the elections in their municipalities.

Finally, local elections are not only a matter of local politics and local issues, but are also to be understood in a national framework. National parties often participate in local elections and bring along more stakes and incentives for the voter. Indeed, in those municipalities where one or several national party present a list of candidates, the voter can not only vote in function of local issues but also in function of national issues. Following the argument of the second-order theory, a voter might be willing to vote, in order to be able to punish electorally the national party in government. As a result, we included a dummy variable that indicates whether at least two national parties participate in the local election in a municipality.

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[9] There are two other types of non-mainstream parties that could mobilize protest voters: the regionalist party (FDF) and the Pirate Party. However, these parties only participated to the 2012 elections, in only a small amount of municipalities and they obtained an insignificant electoral result those elections. We therefore did not include them in our operationalization of protest parties.

Socio-demographic variables

According to Degan and Merlo (2011), turnout is in general not uniform in the population of eligible voters, but is correlated with several demographic characteristics such as age, education, gender, and race. Similarly, we will include several socio-demographic variables in our explanatory models.

Previous analyses of turnout across countries and regions demonstrated that small entities are often related to a higher turnout (Blais, Dobrzynska, 1998: 250). The explanation of this relationship is to be found in the fact that elections in these countries take place in political environments where citizens feel closer to the decision-makers and have a more direct impact on policies (Blais, Dobrzynska, 1998; Costa-Font, 2009: 168). In addition, in large communities, one single voter is less likely to make a difference, de facto decreasing the expected utility from voting (Geys, 2006: 642). A greater sense of community and larger participation rates may be expected in small cities while, in large cities, it is expected that public life becomes more impersonal and distant (Blais and Carty, 1990; Dahl and Tufte, 1973).

Similarly, studies of the impact of population density on turnout believe that if voters are spread over the territory, they will be less exposed to group pressure to vote; it will be more difficult to mobilize them; and it is likely that the distance to the polling station is larger (and therefore discouraging some voters). In Belgium, huge variations can be observed among municipalities regarding their size (from more than 200.000 inhabitants in Charleroi to not even 1.500 in Daverdisse). We measure the size of municipality by using the amount of registered voters. This measure is a very good proxy for the population of a municipality since voting is compulsory for all Belgian citizens above 17 years and permitted for all non-Belgian residents (see above).

Somehow connected to the size of the municipality and to its population density, urbanization is also used in studies of turnout. Urbanization is expected to lead to a weakening of interpersonal bonds since cities are more individualistic and characterized by a lower social pressure to turn out (Geys, 2006: 643). We measure the degree of urbanization by using the Eurostat concept for each municipality.

Regarding education, it is expected that turnout will be higher when associated to high education (Blais, Dobrzynska, 1998; Fornos, Power, Garand, 2004; Gallego, 2009). The reasoning behind this argument is that the more educated citizens are, the more liberal and the better informed they tend to be, and the higher their sense of civic duty (Degan, Merlo, 2011: 211). We included data from 2006 on the percentage of citizens with superior education degree in each municipality.[10]

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[10] Data source: Institut National de Statistique and IWEPS

Even if connected to variables measuring urbanization and education (Fornos, Power, Garand, 2004: 912), the socio-economic status of the voter is important. The idea is that economic development does seem to facilitate turnout. Several authors included such variables in their model by looking for example at GDP per capita, median household income, poverty rate or the percentage of the population that owns its housing (see for example Blais, Dobrzynska, 1998; Hajnal, Lewis, 2003; Fornos, Power, Garand, 2004). Since all these measures are correlated[11], we only use unemployment rate as measure of the economic development of a municipality.[12]

Age or experience in voting is often used as an explanatory variable of turnout (see for example Gallego, 2009; Gorecki, 2013). Younger cohorts are often related to a lower turnout as well as for (much) older cohorts. Similarly to Hajnal and Lewis (2003) and Geys and Heyndels (2006 : 384) that used the percentage of elderly population in theirs models, we include a measure of the percentage of population over 60 in each municipality rather than the average age of the population.[13]

Finally, we included a measure of the proportion of foreigners in each municipality (in percentage of the total population).[14] Since non-Belgian are allowed to vote for the local elections (see above), they supposedly have an impact on turnout. Foreign citizens that recently moved in the municipality and/or that have been politically socialized in another country will feel less concerned by the local elections than the Belgian citizens. As a result, we expect to observe a lower turnout in the municipalities where there is a larger share of foreigners.

Explaining turnout in local elections

We first test the influence of the institutional variables on turnout. In our model, we explain turnout by measuring the effect of computer-based voting (voters in 39 municipalities used computers while the others used ballot papers), the number of seats in the local council and the voter density (the number of voters per polling station). Even if our research design controls for most of the effects of institutions and of the electoral system (i.e. compulsory voting, PR system and voting age), we find that these three institutional variables have a significant impact on turnout (see Model 1). As expected, computer-based voting has negative effect on voting. Municipalities with such voting system witness a decrease of turnout of about 2,76%. This effect is huge, considering the

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[11] We estimated our models using alternatives measurement of the socio-economic status (employment rate, median income), leading to similar results. However, in their models explaining turnout in Flemish municipalities in 2000, Geys and Heyndels (2006: 384) used both variables of unemployment rate and average income.

[12] Data source: Institut National de Statistique and IWEPS

[13] Data source: Institut National de Statistique and IWEPS

[14] Data source: Institut National de Statistique and IWEPS

cross-municipality variation of turnout (standard deviation = 3,21).

Table 2 around here

The number of seats has also an impact on turnout: turnout is lower in large city councils and higher in small city councils. Each additional seat in the local assembly produces a decrease of 0,25% of electoral participation. However, the effect of this variable may be related to the size of the municipality since the correlation between the number of seats and the number of voters is .83. Voter density also has a negative impact on turnout. Turnout is lower when there is a high amount of voters per polling station.[15] Finally, the variable controlling for the German-speaking municipalities is surprisingly significant. In these municipalities, turnout is 2,22% lower than in French-speaking municipalities.

The set of institutional variables delivers interesting results and manages to partially explain turnout in local elections. However, turnout is not only a matter of institutions and electoral systems, but also of competing parties and candidates. As outlined above, the incentives for voting highly depend on the expected benefit of voting. If the voter is convinced that his/her vote will not influence the electoral outcome, (s)he may not turn out. This likely to be the case if the municipality has been ruled by a single party that benefitted from an absolute majority of the votes during the previous term. Indeed, our results confirm (see Model 2) that turnout is lower (by 0,84%) in municipalities dominated by a single party. Voters are likely to think that the electoral outcome will confirm or prolong this current situation.

We also observe that the amount of candidates influences voting behavior. Elections where a large amount of candidates participate lead to lower turnout rates. And the impact of the amount of candidates is considerable: for each additional candidate, turnout drops by 0,03%. When one observes that the amount of candidates per municipality ranges from 11 to 405, this effect is potentially important. Not only candidates do influence turnout but also the type of parties that participate in the local election.

We finally tested whether the type of parties that compete in a particular municipality do influence turnout. The presence of at least two national parties among the lists in competition reduces turnout by 0,8%. Local elections are mainly about local issues, local candidates and local politics. The presence of national parties – and *a contrario* the absence of local parties – tends to reduce the stakes of an election and diminish turnout.

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[15] If we run a separate analysis for the 2012 elections taking into the variation of the number of aldermen per municipality (see above), we observe that voter density does no longer play an role and that the varying number of aldermen leads to an increase of turnout: each additional alderman in a municipality produces an additional 0,7% participation rate. Computer-based voting and the number of seats remain negative and significant.

Quite surprisingly, the presence of protest parties is negatively linked to turnout. We expected that the protest vote would lead to a higher turnout when citizens have the opportunity to vote for one (or more) protest party. Yet, none of the variables that measures the presence of a protest party (green, radical right, radical left) is significant. An alternative measurement of the presence of at least one protest party (see Model 3) leads to similar results. As in previous models, the variable controlling for language indicates a much lower turnout in German-speaking municipalities (-3,75%).

Our third set of variables concerns the demographic and socio-economic aspects of voting. Model 4 introduces the demographic variables in the explanation of turnout rates for both 2006 and 2012 elections. Both variables have an important impact on turnout. The number of voters – or, to put it simply, the size of the municipality – is linked to turnout. Turnout is higher in small municipalities than in large one. Similarly, the degree of urbanization of the municipality is also connected to turnout. Turnout is higher in rural municipalities than in urban ones. These results confirm previous findings on the impact of the demographical characteristic of an entity in election results. Turnout is also lower in German-speaking municipality (-3,9%) even it most of them are small (small amount of voters) and rural.

Table 3 around here

Due to data availability[16], the socio-economic model could only be tested for the 2006 elections and one should be aware of obvious problems of ecological fallacy. Yet, socio-economic variables do play a role in the understanding of turnout (see Model 5).[17] The characteristics of the municipality have an impact on the electoral participation of its inhabitants. They are less likely to turn out if the municipality contains a larger proportion of foreigners, if the municipality contains a larger proportion of old inhabitants, and if the municipality contains a larger proportion of unemployed persons. These findings are not surprising since the literature teaches us about the lower turnout in these more fragile or less socially included categories of population. Yet, the results also demonstrate a more surprising result: the inhabitants of a municipality are less likely to turn out if the municipality contains a larger proportion of inhabitants with a degree of superior education (university or a school of superior education). Again, being in a German-speaking municipality decreases turnout by 4,8%.

The integration of both types of variables – demographic and socio-economic – into the same model for the 2006 elections delivers approximately the same results (see Model 6). Turnout is negatively influenced by number of voters, urbanization and the proportions of old, unemployed and educated inhabitants. German-speaking municipalities witness a lower turnout. The only difference concerns the proportion of foreigners in the municipality. It is likely that its effect are now taken over by the

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[16] Official figures for education, age, percentage of foreigners, etc. will only be released at the end of 2013.

[17] The mean income variable has been removed from the model because of multi-collinearity.

variables of number of voters and urbanization since most of the foreigners in the Wallonia are found in large and urban municipalities.

In a larger model, we test the three competing sets of explanatory variables (see Model 7). The results are striking. Institutional (and socio-economic in Model 8) variables matter in the explanation of turnout in local elections in Belgium. With the small exception of the presence of absolute majorities in the previous elections, variables related to the (political) competition do not influence turnout. Turnout rates appear independent from the number list and/or candidates in competition, the presence of national parties and of protest parties. The same applies to the demographic variables (size and urbanization of the municipality). Model 7 demonstrates that – even in a system with compulsory voting, PR and similar voting age – institutions matter. Computer-based voting, a large number of seats and a large number of voters per polling station lead to a lower turnout. With the exception of the latter, these effects remain present when including socio-economic variables. For the 2006 elections, the socio-economic characteristics of the municipality are crucial for the understanding of turnout. A municipality with a larger share of old, educated and unemployed persons witnesses a lower turnout. These findings have to be confirmed for the 2012 elections but call for further research.[18]

> *Table 4 around here*

Turnout differences and invalid votes

In a final section, we will test the impact of the same variables on three alternative dependent variables. We observed previously that there have been large differences in turnout in 2006 and 2012. In 2006, the average turnout was 93,76% while it drops in 2012 to 90,19%. And the decrease in turnout is overall similar in all municipalities, sometimes dramatically as in the case of Saint-Vith (-10,08%). Between 2006 and 2012, only two municipalities out of 262 witnessed an increase of turnout.[19] Following Rose (1973), we do not only analyze differences between municipalities by looking at their turnout rate but we also analyze differences between municipalities by calculating their deviation from the regional mean. This measurement of the deviation from the regional mean for each election year allows disentangling the overall effects due to the 2006 and 2012 campaigns. We ran similar models but using the deviation from the regional mean as the independent variable.

Compared to previous models, Model 9 indicates that most of previously identified variables do not explain turnout deviation. Two exceptions have to be found in the

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[18] We controlled this latter model by using alternative measures such as the average age or the average income in the municipality. The obtained results remain broadly the same.
[19] Mont-de-l'Enclus with +0,04% and Herbeumont with +0,16%.

number of seats, indicating that turnout is smaller than the regional mean in municipalities with a larger city council, and in urbanization, indicating that turnout is smaller in urbanized municipalities. Compared to Model 7, the computer-based voting or the voter density no longer have an effect. Yet, German-speaking municipalities display a different pattern than French-speaking ones: in those municipalities, turnout is -2,87% smaller than the regional mean.

Table 5 around here

However, turnout – especially in a country where voting is compulsory – does not fully indicate dissatisfaction with parties or politics. This dissatisfaction – or protest behavior – can be observed through the analysis of the invalid and blank votes.[20] Indeed, some citizens that would not vote if voting would not be compulsory and might use the possibility of producing a blank vote as a way to protest or to express its dissatisfaction. Our data for 2006 and 2012 elections indicate that turnout and invalid votes are connected to a certain extent but negatively. The correlation between the two variables is -.403 indicating that a higher rate of invalid votes is likely to be found in municipalities with a lower turnout and vice versa.[21] In other words, the presence of a high number of invalid votes reinforces the effect of a low turnout. It is likely that our measure of turnout is too conservative and that both phenomena should be somehow combined in order to properly measure non-participation in local elections in Belgium. The average percentage of invalid votes was 5,59% in 2006 and 6,10% in 2012.

Similarly to turnout, few variables related to the electoral system might explain the rate of invalid votes. The exception is to be found in the municipalities with a computer-based voting system. Even if the voter has the possibility to produce a blank vote, these systems do not permit invalid votes per se. As a result, we expect that the computer-based vote would lead to a lower rate in of invalid votes. The impact of all other variables (institutions, competition, demographic and socio-economic) on invalid votes is expected to be similar than on turnout.

Since invalid votes and turnout are similar or, at least, connected phenomena, we tested whether they may be explained by the same variables. Concerning institutional variables, turnout was explained by computer-based voting, the number of seats and voter density (see Model 7). Unexpectedly, computer-based voting does not similarly influence the rate if invalid votes (see Model 10). There is a smaller number of invalid in municipalities with computer-based systems but the effect is not significant. It is likely that those who would express an invalid vote do not turn out. In addition, voter density

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[20] In parallel to this paper, I ran a series of interviews with election officials and election observers for the local elections of 2012. They overall confirm that purely invalid votes (i.e. votes where the voter unconsciously invalidates his/her vote) are not common and that the large majority of invalid votes are in fact blank votes.

[21] In the following models, turnout has been used a control variable.

does not affect the number of invalid votes. On the contrary, the number of seats indicates that a higher rate of invalid vote is to be found in municipalities with larger city councils. Yet the variable measuring the number of voters is also significant but negative. Both variables are connected to the size of the municipality but indicate contradicting results. More efforts are needed to disentangle these diverging effects.

Concerning competition variables, turnout was poorly explained by these variables with the exception of the effect of absolute majorities. On the contrary, the rate if invalid votes is best explained by the presence of national parties (negative effect) but, more importantly, by the presence of protest parties. The rate if invalid votes is lower in municipalities where (several) protest parties participate in the elections.[22] This confirms that voters use the possibility to express a blank vote when they are not given the opportunity to express their distrust towards mainstream political parties and candidates. The amount of candidates and the presence of an absolute majority in the previous term do not influence the amount of invalid votes.

Finally, our two control variables are significant. Similarly to what we observed regarding turnout rate, German-speaking municipalities do witness a much larger amount of invalid votes. These municipalities do not only display a lower turnout rate (-2,48% in Model 7) but also a much higher rate of invalid votes (+4,43%). This confirms the connection between turnout and invalid votes. Indeed, our model indicates that turnout has a negative impact on the amount of invalid votes. Since the phenomena of turnout and invalid votes concern similar voters, it is not surprising to witness a higher amount of invalid votes in municipalities that already displayed a low turnout.

In a last model, we tested whether our variables could explain the rate of invalid votes measured as a deviation from the regional mean (see Model 11). The obtained results are almost similar as for the previous model. The size of the municipality – measured in terms of the number of seats in the local council – explains this deviation, together with the presence of national and protest parties. Municipalities display a higher rate of invalid votes in larger municipalities and in the absence of national parties and of protest parties. Finally, the amount of invalid votes is also related positively to the German-speaking municipalities and negatively to the regional deviation of the turnout rate. This final model confirms once again the connection between turnout and invalid votes: a lower turnout is associated to higher proportion of invalid votes.

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[22] We ran the same regression model but distinguishing between different types of protest votes. The presence of a green party decreases invalid votes by -0,43% while the presence of a radical right party decreases it by -0,39%. The presence of a radical left party has no influence on the proportion of invalid votes.

Conclusion

This paper aimed at understanding turnout in a very specific electoral setting: compulsory voting. Our research strategy is not only to analyze turnout rate in a constraining environment but also to keep constant some of the effects of the electoral system (PR and voting age). Altogether, we aimed at identifying the factors that could explain variation in turnout when the vote is compulsory and when the electoral rules are about the same for all electoral districts. We choose to analyze local elections in Belgium since they not only allow a large N study but also demonstrated important variation across municipalities. If the electoral system does not explain these variations, what contributes to a low or high turnout ?

The results are rather puzzling. Elements related to the electoral still play a role. It is the case of the computer-based voting (that decreases turnout) and voter density (that also decreases turnout). The size of the municipality (via the number of seats in the local council, not the number of voters) also has a negative impact on turnout. But the most surprising effects come from the variables that do not play a role: political and party competition do not influence turnout. This is maybe related to the length of the term (6 years) and the voter's lack of information on the current balance of power between parties. Yet, the major events that occurred in the local party system in the recent years could have also played in role in the stakes of these elections. Not only the parties and candidates in competition do matter but probably the political changes since the last election. Local party systems are characterized by a important instability: new parties are created, dissidences emerge, parties are split or merged, individual and candidates more from one party to another, etc. In a further step, we need to take these events into account in order to have a larger picture of the actual pattern of party competition.

We also tried to include socio-economic explanations in our models. Due to data availability (the data for 2012 will only be available in 2014), we could only test their impact on turnout for the 2006 elections. Yet, our results demonstrated that these variables potentially have an important effect on turnout and, more particularly age, education and unemployment rate. Still, one particular result was rather counter-intuitive: the inhabitants of a municipality are less likely to turnout if this municipality contains a larger proportion of inhabitants with a degree of superior education (university or a school of superior education). More work and data are needed in order to investigate properly these effects.

Another important element of this paper is the identification of a German-speaking exceptionalism. Voters living in German-speaking municipalities demonstrated a different voting behavior than voters in French-speaking municipalities in all our models. As mentioned above, we need more information about the characteristics of each local party system and it is likely that the pattern of party competition is different in those municipalities. French-speaking local political parties are often structured

according the regional / national political landscape, while German-speaking have more leeway in determining their own ideology or electoral strategy. These differences in turnout may also explained by the political culture or can be related to the peculiar history of this linguistic community in Belgium. Indeed, the German-speaking municipalities only joined Belgium after WWI as a 'prize' for the Belgian victory over Germany. In the inter-bellum period, inhabitants of these municipalities have often been considered as second-order citizens. In addition, due to the events that occurred before and during the WWII[23], a large set of voters have been deprived of their voting rights in the aftermath of the war. It is likely that these events somehow shaped differently the relationship between German-speaking citizens and the (local) elections.

Finally, we tested whether our model could contribute to the explanation of a phenomenon often related to turnout in compulsory voting settings: invalid and blank votes. It has been often argued that since voters do not have the opportunity to express their dissatisfaction or distrust by the act of non-voting (as voting is compulsory), they tend to vote in a invalid way or vote blank. Our data for 2006 and 2012 elections indicate that turnout and invalid votes are connected to a certain extent but negatively. The correlation between the two variables equals -.403 indicating that a higher rate of invalid votes is likely to be found in municipalities with a lower turnout and vice versa.[24] In other words, the presence of a high number of invalid votes reinforces the effect of a low turnout. We need further research to analyze properly these phenomena: should we somehow combine then in order to properly measure non-participation or protest (non-)voting in local elections in Belgium or should they be considered separately ?

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[23] Some inhabitants and elected politicians of this community openly supported the Nazi regime.

[24] In the following models, turnout has been used a control variable.

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Appendix

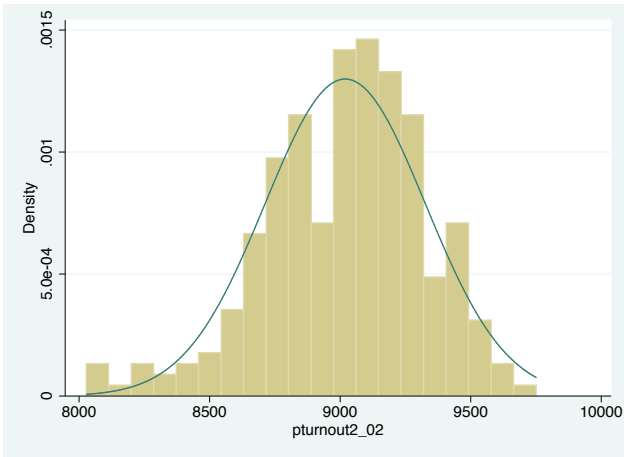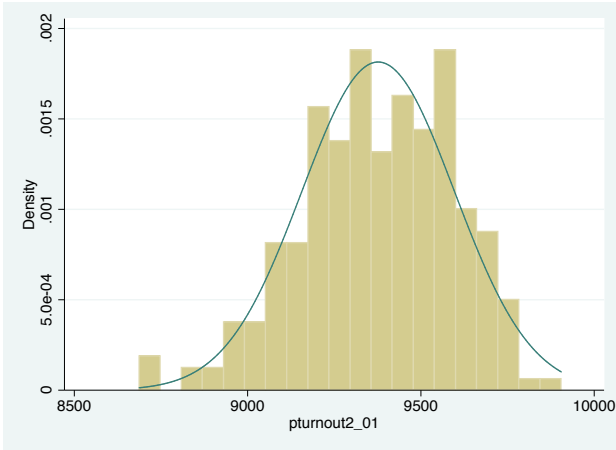Graphs 1 and 2: turnout distribution across municipalities (2006 and 2012)

Table 1. Descriptive statistics

	N	Mean	Std. Dev.	Min	Max	Elections
Dependent Variables						
Turnout Rate (%)	524	91,97926	3,21178	80,28	99,05	2006-12
Turnout Deviation (%)	524	0,004255725	2,667771	-9,91	7,32	2006-12
Invalid votes (%)	524	5,842443	1,870799	-0,96	13,91	2006-12
Invalid votes Deviation (%)	524	-0,002557252	1,8534	-4,63	7,81	2006-12
Independent Variables						
Number of Voters	524	9596,538	14293,6	1050	136806	2006-12
Δ Number of Voters	262	389,5573	359,9046	-837	2154	2012
Number of Lists	786	3,974555	1,503072	1	14	2000-12
Δ Number of Lists	524	-0,1316794	1,150205	-4	4	2006-12
Number of Candidates	524	75,23664	48,10931	11	405	2006-12
Δ Number of Candidates	262	-0,2824427	18,8699	-60	76	2012
Number of Seats	524	20,08397	6,814997	9	51	2006-12
Δ Number of Seats	262	0,351145	0,7822128	-2	2	2012
Number of Aldermen	524	4,328244	1,056295	3	9	2006-12
Δ Number of Aldermen	262	-0,0916031	0,4540222	-1	1	2012
Number of Polling Stations	524	6,293893	11,2616	1	148	2006-12
Voter Density	524	1685,372	462,5517	487	2717	2006-12
Computer-based Voting	524	0,148855	0,3562856	0	1	2006-12
Absolute Majority	524	0,480916	0,5001131	0	1	2006-12
National Parties	524	0,5305344	0,4995437	0	1	2006-12
Radical Right Party	524	0,1087786	0,3116588	0	1	2006-12
Radical Left Party	524	0,0496183	0,2173626	0	1	2006-12
Green Party	524	0,6272265	0,4838505	0	1	2006-12
Protest Party	524	0,7480916	0,7274304	0	3	2006-12
Urbanization	524	1,851145	0,6749229	1	3	2006-12
Average Age	262	39,64847	1,441788	34,9	43,8	2006
Older than 60 (%)	262	20,66679	2,441547	13,6	29,3	2006
Foreigners (%)	262	6,242748	5,66983	1,3	49,7	2006
Income	262	13044,06	1566,051	9515	18974	2006
Unemployment (%)	262	14,05802	5,215023	3,5	30,7	2006
Higher Education (%)	262	25,41374	7,018599	11,3	53,5	2006
Control Variable						
German-speaking	786	0,0343511	0,1822454	0	1	2000-12

Table 2. Explaining turnout rates

		Model 1	Model 2	Model 3
Institutions	Computer	-276.9357***	-	-
		(60.51883)		
	Seats	-25.46652***	-	-
		(2.014353)		
	Voter density	-.1608028***	-	-
		(.04342)		
Competition	Candidates	-	-2.845015***	-2.861525***
			(.3931612)	(.3724178)
	Absolute Majority	-	-84.96872***	-85.16089***
			(23.77287)	(23.33085)
	National Parties	-	-79.88959**	-80.49973**
			(28.96566)	(27.60502)
	Green Party	-	-50.60431	-
			(28.78529)	
	Radical Right Party	-	-20.36816	-
			(42.90213)	
	Radical Left Party	-	-74.59989	-
			(63.61602)	
	Protest Party	-	-	-44.90134
				(23.07372)
Control	German-speaking	-222.3339**	-375.6602***	-375.1117***
		(78.21084)	(62.83284)	(62.72118)
Model Summary	Constant	10029.27***	9543.885***	9543.356
		(76.46321)	(29.20807)	(26.55491)
	N	524	524	524
	Groups	262	262	262
	R^2 (within)	.3624	.0128	.0105
	R^2 (between)	.5979	.5536	.5558
	R^2 (overall)	.4178	.3532	.3525

Note: GLS regression, random effects. *** $\rho < 0.001$; ** $\rho < 0.01$; * $\rho < 0.05$.

Table 3. Explaining turnout rates

		Model 4	Model 5 (2006)	Model 6 (2006)
Demographic	Voters	-.0072111***	-	-.003483***
		(.0011012)		(.0007388)
	Urbanization	-161.2528***	-	-86.69323***
		(23.43498)		(17.70767)
Socio-Economic	Foreigners	-	-.5299982*	-.0950561
			(.211954)	(.2054866)
	Age	-	-.9969335*	-1.104112**
			(.4245651)	(.3880712)
	Education	-	-1.607081***	-1.037285***
			(.1727023)	(.1750803)
	Unemployment	-	-3.187176***	-1.952888***
			(.2756722)	(.3005079)
Control	German-speaking	-390.4958***	-481.4545***	-440.2973***
		(77.31721)	(69.43707)	(63.67531)
Model Summary	Constant	9579.043***	10488.73***	10357.22***
		(42.46329)	(111.6366)	(105.1796)
	N	524	262	262
	Groups	262	-	-
	R^2 (within)	.5439	-	-
	R^2 (between)	.5165	-	-
	R^2 (overall)	.3368	-	-
	Adj. R^2	-	.5196	.5949

Note: GLS regression, random effects. *** $\rho < 0.001$; ** $\rho < 0.01$; * $\rho < 0.05$. Model 5-6 : OLS regression.

Table 4. Explaining turnout rates

		Model 7	Model 8 (2006)
Institutions	Computer	-251.6195***	-83.03789*
		(66.00484)	(39.63881)
	Seats	-26.78856***	-16.56252***
		(5.232486)	(3.408678)
	Voter density	-.1550006**	-.0200823
		(.046461)	(.0287044)
Competition	Candidates	.5696859	-.081176
		(.727246)	(.4779024)
	Absolute Majority	-61.44325*	-13.81216
		(24.6681)	(16.3811)
	National Parties	-7.82559	-20.48064
		(31.66881)	(20.52736)
	Protest Party	-45.3377	-29.49888
		(23.51784)	(16.66957)
Demographic	Voters	.0012737	.0023129*
		(.0018308)	(.0010508)
	Urbanization	-31.39571	-21.71377
		(27.5138)	(18.04648)
Socio-Economic	Foreigners	-	.0775993
			(.1867727)
	Age	-	-.9624442**
			(.3526007)
	Education	-	-.7989453***
			(.1638934)
	Unemployment	-	-1.456422***
			(.2812051)
Control	German-speaking	-248.3762**	-328.9773***
		(84.01324)	(61.72115)
Model Summary	Constant	10113.82***	10427.65***
		(88.33266)	(105.5022)
	N	524	262
	Groups	262	-
	R^2 (within)	.2450	-
	R^2 (between)	.6085	-
	R^2 (overall)	.4331	-
	Adj. R^2	-	.6819

Note: GLS regression, random effects. *** $\rho < 0.001$; ** $\rho < 0.01$; * $\rho < 0.05$. Model 8: OLS regression.

Table 5. Explaining turnout deviation, invalid votes rate and invalid votes deviation

		Turnout Dev. (Model 9)	Invalid (Model 10)	Invalid Dev. (Model 11)
Institutions	Computer	-64.01609	-26.43522	-25.34071
		(48.95819)	(40.79572)	(39.81488)
	Seats	-20.47691***	13.03449***	11.60238***
		(3.557529)	(2.852139)	(3.011152)
	Voter density	.0237309	-.000992	.0082115
		(.0338504)	(.0283155)	(.0273736)
Competition	Candidates	-.258713	-.2108746	-.2772678
		(.4120325)	(.3099348)	(.3093257)
	Absolute Majority	.8056718	3.824059	5.390631
		(14.10298)	(10.71331)	(10.4885)
	National Parties	-20.0589	-31.51622*	-33.78235*
		(18.09453)	(13.59913)	(13.48333)
	Protest Party	-11.56574	-37.96656***	-38.01622***
		(12.99479)	(9.749436)	9.591612)
Demographic	Voters	.0007906	-.0021778*	-.0001384
		(.001329)	(.0010701)	(.0060017)
	Urbanization	-73.97231***	27.8402	19.54966
		(20.45646)	(16.57724)	(16.77843)
Control	German-speaking	-287.2657***	442.9283***	415.171***
		(63.81542)	(52.10271)	(52.92316)
	Turnout	-	-.1585464***	-.0023685
			(.0167958)	(.0070703)
	Turnout Dev.	-	-	-.249288***
				(.0352117)
Model Summary	Constant	558.803***	1799.663***	-207.3202***
		(63.69823)	(185.4118)	(54.21507)
	N	524	524	524
	Groups	262	262	262
	R^2 (within)	.0001	.3149	.1890
	R^2 (between)	.6386	.4532	.4586
	R^2 (overall)	.5923	.4388	.4352

Note: GLS regression, random effects. *** $\rho < 0.001$; ** $\rho < 0.01$; * $\rho < 0.05$.