

# Appendices

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## **Appendix A. Variables used in the Analyses.**

*-Attention to politics:* Adolescents' level of attention for politics is included as a measure of political interest. Previous research has argued that political interest is a crucial attitude as it predicts attention to electoral campaigns, feelings of political empowerment, and political knowledge (Shehata & Amnå, forthcoming). We focus on a measure of attention to politics, which consisted of a single item: "How much attention do you pay to political topics on television, the radio, newspapers or the internet?" Respondents could answer on a four-point scale ranging from "no attention at all" to "a lot of attention".

*-Talking about politics:* Given the fact that adolescents are not always in a position to decide for themselves, e.g., with regard to subscribing to a newspaper or following the television news, talking about politics can be considered as an important proxy indicator for this age group (Dassonneville & Hooghe, 2011; Klofstad, 2007). Respondents were asked "How often do you talk about political and social topics with the following people" and were subsequently asked to indicate frequency of discussion with both their parents and their friends on a scale ranging from "never" to "often". As the correlation between both variables is 0.52, we create one index "talking about politics" by adding the answers of the two questions, and dividing by two.

*-Political knowledge:* Political knowledge can be regarded as a crucial political resource (Delli Carpini & Keeter, 1996). In the Ghent Study, political knowledge was measured with five questions about the basic functioning of the Belgian political system:

-For the first two questions, respondents were asked to link the pictures of two well-known politicians with their respective political parties;

-“Who was alderman for education in the city council of the city of Ghent before the elections of 14 October 2018?”

-“Which parties were part of the city council of the city of Ghent before the elections of 14 October 2018?”

-“The Federal Parliament consists of...”

For each question, four answer options were given, as well as an explicit “don't know” option (apart from the two pictures, for which respondents could choose from a list of five parties). For respondents indicating not to know the answer, the answers were coded as wrong.

*-Internal political efficacy:* The feeling of political efficacy is a crucial resource to enable meaningful political participation. Respondents were asked to indicate to which extent they agreed with four statements:

- “I think I am capable to take part in politics”;
- “I think I would do as good of a job as most politicians we elect”;
- “I think I am better informed about politics than most people”;
- “I think I understand which are the problems our society is facing”.

For each statement, respondents could indicate the extent to which they agree on a four-point scale ranging from “fully disagree” to “fully agree”. As the answers to the different items load on one latent factor (eigenvalue 1.453, Cronbach’s Alpha 0.72), we create one index by adding up the answers to the questions and dividing by four.

*-External political efficacy:* Respondents were asked to indicate to which extent they agreed with four statements:

- “At election time one party promises more than the others, but in the end not much happens” [reversed];
- “A normal citizen has an impact on what the government does”;
- “It doesn’t make much sense to turn out to vote, parties do whatever they want anyway” [reversed];

For each statement, respondents could indicate the extent to which they agree on a four-point scale ranging from “fully disagree” to “fully agree”. The answers to the different items do not load very strongly on one latent factor (eigenvalue 0.715, Cronbach’s Alpha 0.52). However, as these items have been well-established theoretically, we create one index by adding up the answers to the questions and dividing by three.

*-Political trust:* Political trust expresses most comprehensively a generally positive view on the legitimacy of, and the basic values underlying the political system. A large number of studies also suggest a connection between political trust and other indicators for political engagement (Uslaner, 2018). Respondents were asked to which extent they trust the national Parliament, the National Government, politicians, and political parties, on a scale ranging from 0 (no trust at all) to 10 (full trust). As we expect these different items to measure one latent general feeling of trust, we include them in a factor analysis:

Trust in...	Factor loading
National Parliament	0.889
National Government	0.883
Politicians	0.794
Political parties	0.790
Eigenvalue	2.827
Cronbach's Alpha	0.897

As expected, the different items load on one concept. Hence, we create the measure 'political trust' as an index by adding up the answers on the different items and dividing by four.

Table A.1: Descriptive statistics of the variables in the analyses

	Mean	Std. Dev.	Minimum	Maximum
Attention politics	0.448	0.270	0	1
Talking politics	0.592	0.287	0	1
Political knowledge	0.531	0.316	0	1
Internal efficacy	0.458	0.204	0	1
External efficacy	0.498	0.187	0	1
Political Trust	0.524	0.176	0	1

## Appendix B: Online (intended) discussion

Our operationalisation of political discussion in the main models is fairly traditional, as it is based on a measure of how often the adolescent talks about politics with their parents or friends. Among this age group, it is possible that increased involvement with politics mainly happens online, by posting/sharing/commenting political news through online forums and social media.

To test for this, we estimated the models again, this time asking respondents about their current online activities: ‘How often do you do each of the following activities: (1) put a reaction or a picture about a political or social issue online; (2) react or share something about a political or social issue that someone else has posted.’ Respondents could indicate their online engagement using a four-point scale: “never”, “rarely”, “sometimes”, “often”. As the answers to both questions are strongly correlated (Pearson correlation of 0.64), we combine them into a single indicator of “online political activity”. We also asked about respondents’ future intended participation: ‘Will you take part in any of these activities in the future: (1) contribute to an online discussion board about political or social issues; (2) organise an online group to take a stance about a controversial political or social issue; (3) take part in an online campaign.’ Respondents could answer these questions by means of a four-point scale with the following answer options: “I will definitely not do this”, “I will probably not do this”, “I will probably do this”, “I will certainly do this”. As the answers to these questions have correlations ranging from 0.54 to 0.62, we combined them to construct an indicator of “future online participation”. To investigate whether there are differences in adolescents’ (intended) online behaviour following enfranchisement, we estimate the same models as those reported in the main text. The results are included in Table B.1. Note that, for ease of interpretation, all variables are standardised to range from 0 to 1.

Table B.1. Effects of youth enfranchisement on online political activity of adolescents

	16-year-olds	18-year-olds
Online activity	-0.003 [-0.100;0.094] (0.953)	0.049 [-0.036;0.133] (0.260)
Future online activity	0.042 [-0.092;0.177] (0.538)	-0.055 [-0.147;0.037] (0.239)

*Note:* coefficient is a Regression Discontinuity point estimator, 95% confidence intervals in brackets and p-value in parentheses. Data: Ghent Study.

The results reported in Table B.1 show no strong differences in (future) online activity between unfranchised and enfranchised groups. It seems that even when considering the effects on more youth-oriented measures of discussion and political activity, youth enfranchisement does not seem to a strong impact.

## Appendix C: Model choice and falsification tests

### Local polynomial vs. local randomisation methods

In this study, we use a discrete running variable: as date of birth can only take the value of specific days, respondents are clustered in days. With this kind of data, it is not always appropriate to use local polynomial methods, but rather local randomisation analysis (Cattaneo et al., forthcoming). Whether or not local polynomial methods are warranted, depends on the amount of mass points in the data. In the example used by Cattaneo et al. (forthcoming), the data set consists of 4,362 observations, but these only take 430 separate values – hence, the observations are clustered by averagely approximately 100 observations per value. This number is “a moderate value”, and is on the edge of warranting using the running variable as continuous. In our study, we sent out surveys to a wide range of birth dates – more specifically, respondents being born between 15.10.1998, and 14.10.2000. This gives the potential for 1,460 different values, and in practice the birthdate variable has 1,282 unique values. As we have birthday data for 2,307 respondents, on average, we only have 1,8 respondents on every day of birth. Hence, we dispose of many mass points, which seems to warrant using traditional methods. This consideration also becomes clear when we look at the number of observations around the cut-off – which we report in Table C.1.

Table C.1. Observations at closest mass points

16-year-olds			18-year-olds		
Birth date	Days from cut-off	N	Birth date	Days from cut-off	N
19.10.2002	-5	1	19.10.2000	-5	1
18.10.2002	-4	1	18.10.2000	-4	0
17.10.2002	-3	3	17.10.2000	-3	2
16.10.2002	-2	1	16.10.2000	-2	0
15.10.2002	-1	1	15.10.2000	-1	1
14.10.2002	0	1	14.10.2000	0	0
13.10.2002	1	2	13.10.2000	1	4
12.10.2002	2	2	12.10.2000	2	0
11.10.2002	3	0	11.10.2000	3	1
10.10.2002	4	2	10.10.2000	4	1
09.10.2002	5	3	09.10.2000	5	0

The data in Table C.1 show that there are no values on which there are particularly high numbers of observations. The highest number of observations on the same day in the whole

data set is 8. Even though date of birth is a discrete value, given the low number of observations per value and in particular, we think that a local polynomial method is appropriate (Cattaneo et al., forthcoming, p. 58). Furthermore, as the number of observations per day around the cut-off is so low, using a local randomisation analysis, we would be comparing the answers of just one respondent to the left of the discontinuity with the answers of one other respondent to the right of the cut-off point. In the case of 18-year-olds, we do not have any observation from someone born on the exact day that would grant eligibility. We therefore have to increase the bandwidth to have a larger number of observations. Hence, the data at hand do not allow estimating this kind of model. Therefore, we use local polynomial methods. To take into account the clustering, we report the results of a collapsed data set. To verify whether this has an effect of our results, we present the results using the raw data in Table C.2. It is reassuring that the results of both sets of analyses are very similar. The main difference seems to be that, using the raw data, there seems to be a significant positive effect of enfranchisement at age 16 on talking about politics.

Table C.2. Effects of youth enfranchisement on the political engagement of adolescents – raw data

	16-year-olds	18-year-olds
Attention to politics	0.161 [0.040;0.282] (0.009)	0.098 [0.005;0.192] (0.040)
Talking about politics	0.136 [0.008;0.263] (0.037)	-0.094 [-0.201;0.013] (0.084)
Political knowledge	0.044 [-0.106;0.194] (0.564)	0.096 [-0.035;0.228] (0.152)
Internal political efficacy	0.066 [-0.020;0.152] (0.134)	0.071 [0.006;0.136] (0.032)
External political efficacy	-0.046 [-0.128;0.037] (0.275)	-0.008 [-0.084;0.069] (0.847)
Political trust	-0.012 [-0.082;0.057] (0.729)	0.053 [-0.034;0.141] (0.231)

*Note:* coefficient is a Regression Discontinuity point estimator, 95% confidence intervals in brackets and p-value in parentheses. Data: Ghent Study.



## Test for selection bias

It is possible that the “treatment” (i.e., being enfranchised) affected respondent’s willingness to reply to the survey. We present several tests for this bias.

First, we compare observable characteristics of treated and control non-respondents. As we have the birthdate data of all citizens of the city of Ghent in the age categories of interest available, we can make this comparison based on the characteristics for which we have data: exact age on election day, and sex. We estimate t-tests to test whether the respondents of our survey differed in these characteristics from the population. These tests are reported in Table C.3.

Table C.3. T-tests comparing respondents to the population

	Non-respondents	Respondents	Difference
Age	16.982	16.877	-0.105**
Sex	0.469	0.546	0.077***

Significance levels: \*\*:  $p < 0.01$ ; \*\*\*:  $p < 0.001$ .

The results in Table C.3 show some differences between the sample of respondents and the population. First, it seems like the pool of respondents is somewhat younger than the population. This is most likely due to how we contacted our respondents. In our study, we each time contacted the youngest sibling of a family, asking them to pass on the questionnaires to their sisters and/or brothers. Most likely, not all of these respondents passed on the questionnaires, and this leads to a somewhat “young” sample. Second, there is a small difference in the gender-distribution (variable coded as 0=male; 1=female). More specifically, there seem to be more women in our sample than their proportion in the population. Adolescent girls seem to have been more likely to respond to our survey.

Second, we conducted a density test of the running variable. In this way, we can assess whether the number of observations left and right of the cut-off is similar. We conducted this test using the “rddensity” command. First, we conducted the test for only those respondents that answered our survey. Here we did not find any significant differences in density on the cut-off (p-value= 0.679 for 16-year-olds, and 0.494 for 18-year-olds). We also perform this test for the whole citizenry. These tests also revealed no significant differences in density (p-value=0.997 for 16-year-olds, and 0.647 for 18-year-olds).

As a more stringent test, we estimate RD models using participation in the survey as dependent variable. As we have the full data of birth dates of all adolescents in the age groups under investigation, we can create a binary indicator for every adolescent in these age groups in Ghent: participated in our study or not. Using this indicator, we estimate RD models at the 16- and the 18-cut-off. The results are presented in Table C.4

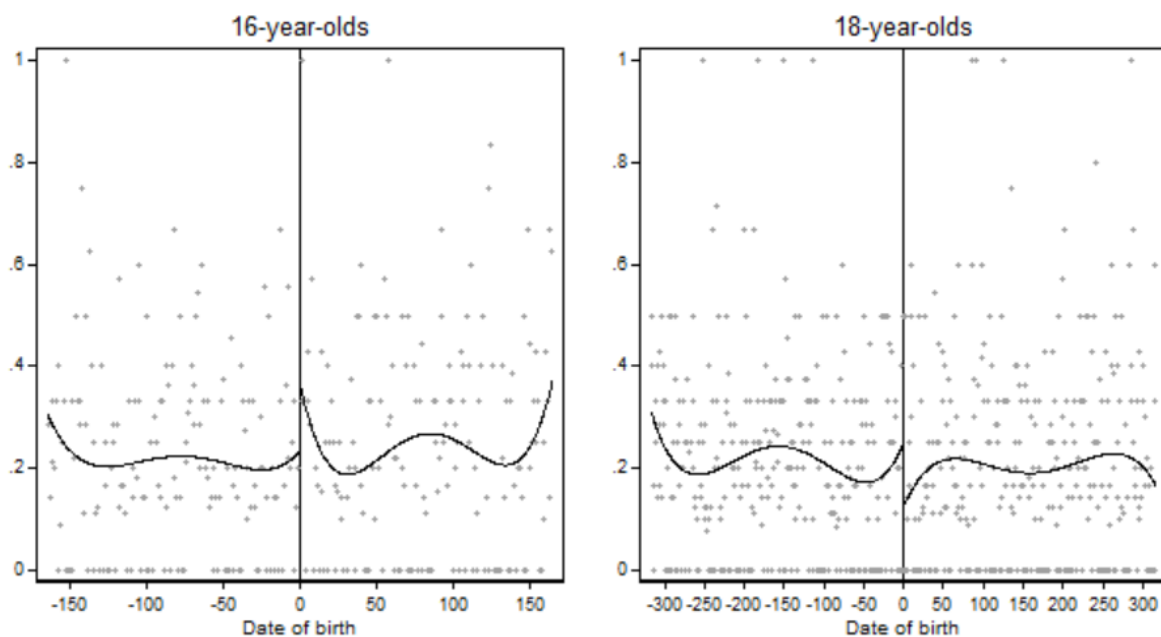
Table C.4. RD-analysis for participation in The Ghent Study

	16-year-olds	18-year-olds
Participation in study	0.038 [-0.059;0.135] (0.444)	-0.007 [-0.064;0.051] (0.814)

*Note:* coefficient is a Regression Discontinuity point estimator, 95% confidence intervals in brackets and p-value in parentheses. Data: Ghent Study.

The results in Table C.4 reveal no significant difference in participation in the survey study between the different age groups. These results are graphically displayed in Figure C.1.

Figure C.1. The effect of enfranchisement on taking part in the survey study



*Note:* The line shows the local polynomial smooth below and above the cut-off respectively (Table C.4).

It is clear from the results that enfranchisement itself does not seem to be related to participation in our study. Hence, we can rule out this alternative explanation for our findings.

## Falsification tests

In line with the recommendations of Cattaneo et al. (forthcoming), we estimated RD-models including demographic covariates. More specifically, we include sex of the respondent, the self-reported amount of books at home (a measure of social class), and expected future education. We included these variables in models analogous to our main models – both at the 16- and 18-year-old cut-off. The results are reported in Table C.5.

Table C.5. Falsification analysis

	16-year-olds	18-year-olds
Sex	-0.200 [-0.085;0.485] (0.169)	-0.020 [-0.199;0.159] (0.823)
Number of books at home	-0.138 [-0.764;0.487] (0.664)	-0.735 [-1.353;-0.118] (0.019)
Expected education	-0.099 [-0.011;0.812] (0.831)	-0.358 [-1.034;0.319] (0.300)

*Note:* coefficient is a Regression Discontinuity point estimator, 95% confidence intervals in brackets and p-value in parentheses. Data: Ghent Study.

The results in Table C.5 show that there are only small differences in these demographic covariates at the age cut-offs. The only difference that reaches significance is the number of books at home, which seems to increase when young adults turn 18. One possible explanation of this effect might be that 18-year-olds might not live with their parents anymore (i.e., they live alone, or in a student room), and the reference to their “home” might be different than for adolescents. However, it is reassuring that in five out of six cases, there is no significant difference.

## Appendix D. Learning about politics at the discontinuity

We tested whether 15-year-olds were exposed to civic classes in school as were their older peers. To examine this, we look at the extent to which they indicate having learned about the following topics: (1) voting in local elections; (2) voting in national elections; (3) how laws are made and implemented in Belgium; (4) how civil rights are protected in Belgium. For each of these topics, respondents could indicate whether they learned about it in the current school year “never” (code 0), “few”, “a little”, or “a lot” (code 3). Furthermore, to test whether one group heard about the experiment specifically to a larger extent than the other, we asked through which means they heard about the initiative of the city of Ghent to allow 16- and 17-year-olds to cast a vote. We combine the respondents who indicate having heard about it at school or having had a series of classes about democracy, and test whether there is a difference in the proportion of respondents indicating this answer.

As can be seen in Table D.1, there is no difference in the extent to which adolescents just below and just above the cut-off date had heard about the experiment at school.<sup>1</sup> In terms of the content of learning at school, while there is a small difference between both groups for the question about learning about voting in local elections, there are no significant differences with regard to the other topics. Overall, it has to be noted that despite the efforts of the city, few respondents reported having learned extensively about local elections at school.<sup>2</sup> The general conclusion therefore is that, most likely, the 15- and the 16-year-olds were exposed to roughly the same kind of political information in the period leading up to the elections of October 2018. However, given the small and significant difference for learning about voting in local elections, when interpreting the results one should take into account the possibility that this imbalance has increased the political information and attention in this age group somewhat. Furthermore, it needs to be noted that, even if there are no strong differences in civic learning between the different age-groups, it is possible that the classes resonated more among those that were eligible to vote than those who were not.

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<sup>1</sup>. To make for a hard test, we make the comparison for a limited group of respondents around the cut-off. To identify the two groups of comparison, we rely on the bandwidth used in the RD model. In the model investigating the difference in political attention (see Table 2), the bandwidth is 90. Hence, we look at the mean scores for adolescents born 90 days before and 90 days after 14 October 2002 respectively.

<sup>2</sup>. An important side-note is that the school year traditionally starts on the first day of September in Belgium, and hence there was not much time for schools to provide students with civic education before the local elections of 14 October.

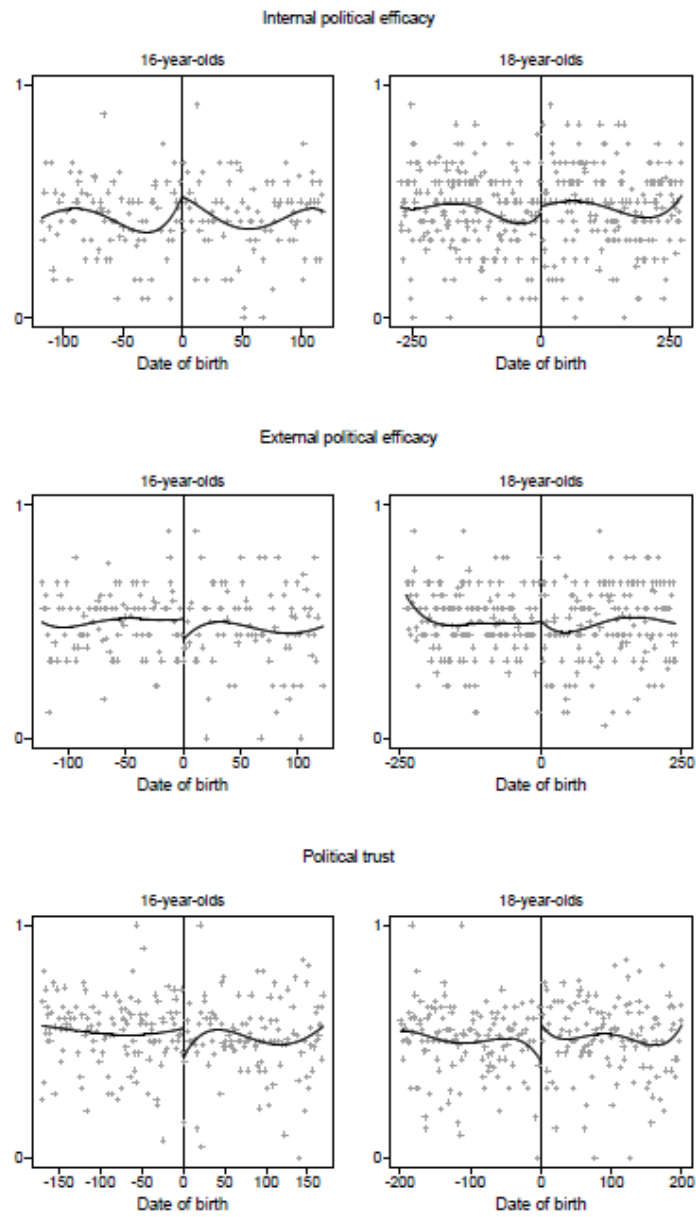
Table D.1. Learning in school and hearing about experiment in school for adolescents just below and just above cut-off.

Learned about...	Below cut-off	Above cut-off	Difference
Voting in local elections	1.063	1.357	0.295*
Voting in national elections	0.785	0.947	0.162
How laws are made and implemented in Belgium	1.035	0.951	-0.083
How civil rights are protected in Belgium	0.895	1.044	0.149
Heard about experiment through school or classes in school	0.430	0.368	-0.062

*Note:* Entries are the mean score of learning about different subjects on school on a 0-3-scale and the proportions of for adolescents having heard about the experiment through the school for adolescents born in the 90 days after and the 90 days before the cut-off point respectively. \*:  $p < 0.05$ .

## Appendix E. Regression Discontinuity figures

Figure E.1. The effect of (compulsory) enfranchisement political engagement



*Note:* The line shows the local polynomial smooth below and above the cut-off respectively.

## Appendix F. Robustness tests

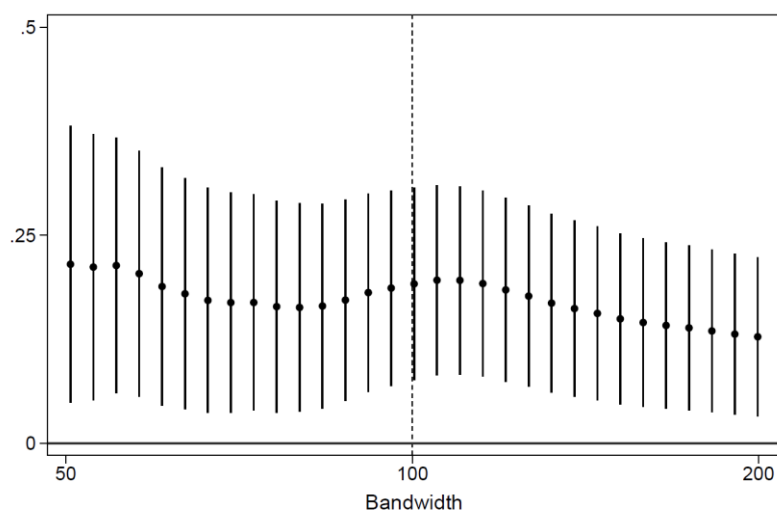
We report several robustness tests for the significant findings presented in the main text. More specifically, we each time include two additional tests:

- 1) We report the results of the conventional RD estimates with conventional variance estimator and bias-corrected RD estimates with robust variance estimator (rather than the bias-corrected RD estimate with conventional variance estimator reported in the text). See Calonico, Cattaneo, and Titiunik (2014) for more details.
- 2) We report the RD estimate using different bandwidths. Starting from the bandwidth calculated using the approach by Calonico, Cattaneo, and Titiunik (2014), we report the results ranging from half to double the suggested bandwidth.

### Attention to politics 16-year-olds

Estimator	
Bias-corrected, conventional variance (reported in main text)	0.165 [0.041;0.289] (0.009)
Conventional, conventional variance estimator	0.137 [0.013;0.261] (0.031)
Bias-corrected, robust variance estimator	0.165 [0.026;0.304] (0.020)

*Note:* RD results using different estimators. Data: Ghent Study. Significance levels: \*:  $p < 0.05$ ; \*\*:  $p < 0.01$ ; \*\*\*:  $p < 0.001$ .

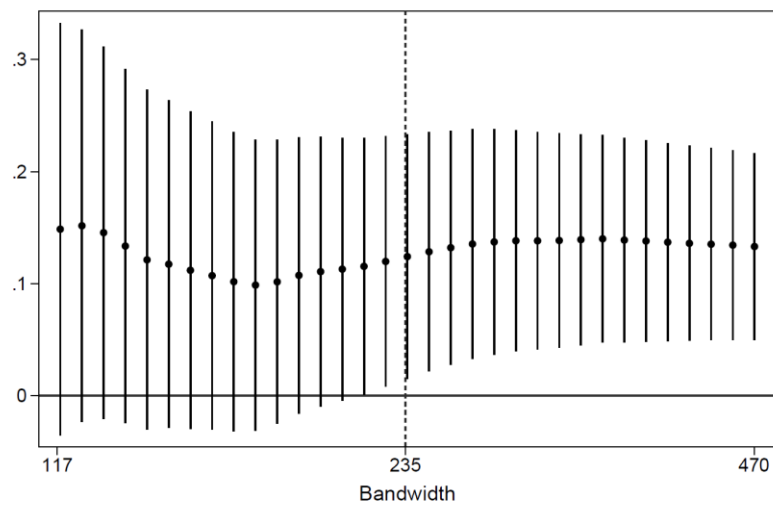


*Note:* Figure shows RD estimates using different bandwidths. Bars present 95% confidence intervals. Data: Ghent Study.

Attention to politics 18-year-olds

Estimator	
Bias-corrected, conventional variance (reported in main text)	0.139 [0.016;0.263] (0.027)
Conventional, conventional variance estimator	0.118 [-0.006;0.242] (0.062)
Bias-corrected, robust variance estimator	0.139 [-0.003;0.282] (0.055)

*Note:* RD results using different estimators. Data: Ghent Study. Significance levels: \*:  $p < 0.05$ ; \*\*:  $p < 0.01$ ; \*\*\*:  $p < 0.001$ .



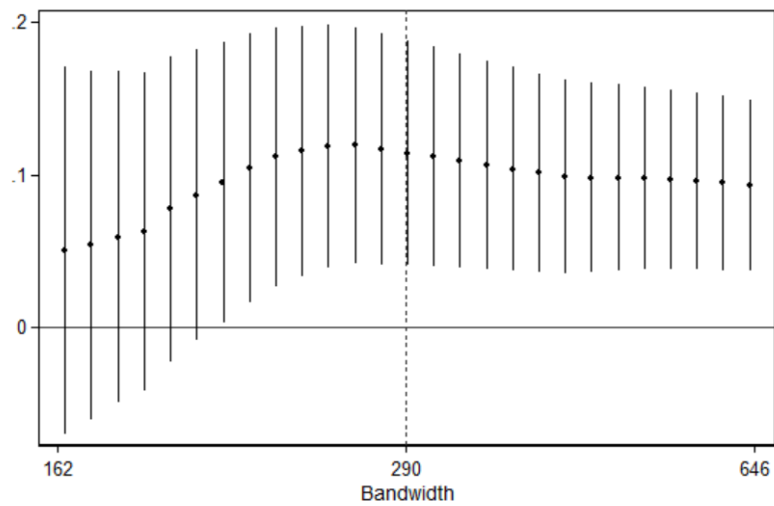
*Note:* Figure shows RD estimates using different bandwidths. Bars present 95% confidence intervals. Data: Ghent Study.



## Internal political efficacy 18-year-olds

Estimator	
Bias-corrected, conventional variance (reported in main text)	0.115 [0.025;0.206] (0.013)
Conventional, conventional variance estimator	0.101 [0.011;0.192] (0.029)
Bias-corrected, robust variance estimator	0.115 [0.009;0.221] (0.054)

*Note:* RD results using different estimators. Data: Ghent Study. Significance levels: \*:  $p < 0.05$ ; \*\*:  $p < 0.01$ ; \*\*\*:  $p < 0.001$ .



*Note:* Figure shows RD estimates using different bandwidths. Bars present 95% confidence intervals. Data: Ghent Study.

**Appendix G: results comparing with 16 year old voters and 16 year old non-voters respectively**

15 year olds versus...	16-year-old voters	16-year-old non-voters
	0.244	0.139
Attention to politics	[0.099;0.390] (0.001)	[0.044;0.234] (0.004)

## References

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