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Does the Internet Affect Political Behavior? Evidence from Russia*

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Abstract

One of the important features of the Internet is that it is much more difficult for the government to control compared to traditional media. Besides, the Internet not only provides information, but also helps people to communicate. The question studied in this work is whether Internet usage can change people's attitudes towards the government in Russia, i.e. a country with limited media freedom. I also analyze the Internet's impact on political participation. I use survey data on individual-level Internet usage and overcome the identification problem by constructing instrumental-variable estimates based on the distance to the Internet Service Providers' backbones. The estimates suggest that on average there is no statistically significant effect of Internet usage on attitudes towards United Russia and Vladimir Putin, and on willingness to vote. However, the effect is found for people with at least unfinished higher education.

Keywords: Internet, media, Russian politics

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1 Introduction

During the recent years the Internet became both a popular source of information and an important mean of communication. There are a number of questions related to the importance of the Internet. In particular, does the Internet play a prominent role in the process of shaping political views of people and changing their political behavior? The Internet has some features which distinguish it from other types of media. Firstly, the Internet is much more difficult for the government to control compared to traditional media. Secondly, the Internet not only provides information from online media outlets, but also helps people to communicate. Both features contribute to the specific role of the Internet. In particular, it is often argued that social media served as an important coordination device during the wave of demonstrations in the Arab world in 2010–2011. Another example is a series of protests in Russia in the end of 2011 and the beginning of 2012. Not only the information about the demonstrations was distributed exclusively via the Internet, but also one of the notable leaders of the opposition, Alexey Navalny, gained his popularity owing to the Internet. The information about his activities as a corruption-fighting lawyer spread through web sites, blogs and Twitter.

The current work examines the effect of the Internet on political views of people. In particular, I use data on individual-level Internet usage to study how it is related to the support of the incumbent government and to the political participation in Russia. Methodologically, the most important problem in determining a causal relationship is to distinguish the effects of the Internet usage from the effects of other important socio-economic variables which are likely to be correlated with the characteristic of interest. I overcome the identification problem by constructing instrumental variable estimates which are based on distances to the Internet Service Providers' (ISPs) backbones, i.e. “the principal data routes between large, strategically interconnected networks and core routers.”¹

The estimates obtained suggest that Internet usage increases the probability of supporting Yabloko, a democratic opposition party, by 0.1 (for the full sample of individuals)

¹The definition is taken from http://en.wikipedia.org/wiki/Internet_backbone

and decreases the probability of supporting United Russia, a government party by as much as 0.8 (for a subsample of educated people). The effects for women are larger (and significant) than those for men when I consider both attitude towards Yabloko (a point estimate of almost 0.2, significant at the 5% level) and willingness to vote (an estimate of 0.2, significant at the 10% level). However, there is no statistically significant (at the conventional levels) effect of Internet usage on attitudes towards most of the parliamentary parties (and most importantly United Russia), Vladimir Putin (the President in 2000–2008, reelected in 2012, and the Prime Minister in 2008–2012), Dmitry Medvedev (the President in 2008–2012 and the Prime Minister from May, 2012), and on willingness to vote when I consider the full sample of individuals.

There are a number of recent papers which study the effects of the Internet on political behavior of people. Golde and Nie (2010) studies how the availability of the Internet affects political participation and political polarization. Although there is a positive effect on the interest in politics, the authors find no effect on political participation and almost no effect on political polarization. Another paper by Nie et al. (2010) focuses on political polarization and finds that consumers which use online news in addition to cable news sources are likely to be more extreme than those who consume cable news only. Czernich (2011) studies the effect of the Internet on political participation. The author finds a positive relation between the availability of a DSL Internet connection and voter participation.

A work most closely related to mine is Miner (2011). The author finds that the availability of the Internet can increase the turnout and decrease the support of the incumbent party which is controlling other types of media. The main differences between that work and the current one are the following. Miner (2011) uses a district-level IP per voter measure of Internet penetration. My data contain individual-level self-reported Internet usage which allows to evaluate the effects for different groups of people. Unfortunately, my data on backbones location is much less precise than that of Miner which leaves space for further development.

There is also a strand of literature which explores non-political effects of the Internet. For example, Bauernschuster, Falck, and Woessmann (2011) studies how the Internet

affects social capital and finds that it is unlikely to be reduced and even increases according to some measures. Bhuller et al. (2011) explores the relation between the availability of the Internet and the number of committed sex crimes. The authors conclude that the availability of a broadband Internet connection can increase the amounts of committed rapes and child sex abuses.

There are a number of papers looking at the political impact of traditional media: Gentzkow (2006), DellaVigna and Kaplan (2006), Enikolopov, Petrova, and Zhuravskaya (2010), Gentzkow, Shapiro, and Sinkinson (2009). The first paper explores the influence of television on the voter turnout. It argues that the introduction of television in the U.S. decreased the turnout because television substituted media with higher political coverage. The second paper studies the effect of the introduction of Fox News channel on the Republican vote shares in different towns and finds a positive impact. Enikolopov, Petrova, and Zhuravskaya (2010) studies how the availability of the sole independent TV channel in Russia influenced the outcome of the 1999 parliamentary elections. The authors conclude that the independent TV channel decreased the vote share of the government party by almost 9 percent, increased the aggregated vote share of the opposition parties by more than 6 percent and decreased the turnout by almost 4 percent. Gentzkow, Shapiro, and Sinkinson (2009) uses the data on entries and exits of daily newspapers in the U.S. and finds a positive effect of the newspapers' availability on the turnout.

This work is also related to the literature on media and accountability. Strömberg (2004) studies how the number of radio listeners in the U.S. counties affected the amounts of funds received by these counties during the New Deal relief program. The effect is positive and significant. Another paper, Snyder and Strömberg (2008), focuses on the differences between newspaper markets and political districts and finds that the U.S. House representatives who are less covered by local newspapers are likely to do less for their constituencies.

The text is organized as follows. I outline the political situation and the role of media in Russia in Section 2. Section 3 discusses the main hypotheses. Section 4 describes the data. The identification strategy is presented in Section 5. Section 6 reports the results. Several alternative specifications are considered in Section 7 and Section 8 concludes.

2 Background information

2.1 Political landscape

In the beginning of 2011 70% of the seats in the lower house of Russia's parliament (the Duma) belonged to United Russia (ER), a centrist pro-government party. Other parliamentary parties were: the Communist Party of the Russian Federation (KPRF) with 12.7% of the seats, the Liberal Democratic Party of Russia (LDPR), 8.9% of the seats, and Just Russia (SR), 8.4%. Although United Russia was able to won 70% of the mandates in the 2007 parliamentary elections, the 2011 elections were not that much successful for the party, United Russia gained 52.9% of the seats. This not-so-successful result is especially emphasized by the widespread belief that the government party could have attempted to engage in different types of election fraud.²

The popularity of United Russia (as well as those of President Medvedev and Prime Minister Putin) declined in 2010–2011. The rating of the government party according to the Public Opinion Foundation (FOM) was 52% in the first half of 2010 and 40% on the 3rd of November 2011. The figures for President Medvedev and Prime Minister Putin (respectively) were 58% and 66% in the first half of 2010 against 41% and 48% on the 3rd of November 2011.³

The official figures for the turnout for the two elections are comparable: 63.7% in 2007 and 60.2% in 2011.

It is sometimes argued that there is at least a correlation between the popularity of the government party and the Internet's availability. For example, Charles Clover, a Financial Times journalist, wrote: "The rise in [I]nternet use has accompanied a steady decline in the popularity of the ruling party United Russia, and a fall in audiences for television news."⁴ Another example is a study carried out by Ted Gerber from University of Wisconsin-

²For example, from 42% to 54% of the Levada Center respondents in 2011 expected the elections to be "rather "dirty" (with slander, pressure on voters, manipulations with ballots, etc.)" See <http://www.levada.ru/25-11-2011/vybory-v-gosdumu>

³See <http://www.rbcdaily.ru/2011/11/10/focus/562949982006308>

⁴See <http://www.ft.com/intl/cms/s/0/85dd8e96-1c2d-11e1-9631-00144feabdc0.html>

Madison. The correlations between political views and consumption of specific online content suggest that those who use the Internet for political communication are less likely to support Putin and Medvedev. Those who use online media also support Putin less.⁵ One of potential links between Internet usage and political views is the increasing communication between people via the Internet. In particular, it enables people to share information about potential violations by authorities and cases of corruption.

This work is aimed to provide some empirical evidence which, unlike simple correlations, can be interpreted in a causal way.

2.2 Media

The most popular type of media in Russia is television. For example, as stated in Enikolopov, Petrova, and Zhuravskaya (2010) according to Colton and McFaul (2003) in 1999 “television was the “basic source of information about political events” for 89% of adult population, compared to 8% who named radio, and 3% who named newspapers.” Similarly, in the forth quarter of 2011 Valery Fedorov, the head of the Russian Public Opinion Research Center (VCIOM), said: “According to the data we have obtained over the past three years, we can say that the most important and widespread source of information for the Russians is the central television, which as a source of information is used by 98% of Russian citizens. The second most important sources of information are regional media (71%) and central press (71%). The Internet as a source of information is preferred by 60% of the citizens.”⁶ If in 1999 among the three most popular TV channels (ORT, RTR, NTV) one was an independent channel which “openly criticized the Kremlin”⁷, by 2011 the situation has changed drastically. For example, as argued by Hale, McFaul, and Colton (2004), “[u]nder control of those closely tied to the Kremlin, the old NTV has gradually come to resemble the other two national television networks.” In this situation “the level of trust of Russian citizens towards the majority of media is decreasing. Primarily it affects the central and regional television. The Internet is the only

⁵More results: http://slon.ru/russia/polzovatel_i_interneta_menshe_lyubyat_putina_i_stalina-762175.xhtml

⁶See <http://tasstelecom.ru/news/one/5729>

⁷Enikolopov, Petrova, and Zhuravskaya (2010).

source of information the credibility of which is growing” (Valery Fedorov, VCIOM).⁸

The availability of the Internet in Russia has been constantly increasing. According to the data from World of Internet project carried out by FOM, the number of Internet users⁹ as a share of adult population in Russia was 7% in the beginning of 2003, had increased to 16% by the beginning of 2007 and had reached 40% by 2011.¹⁰ Although Internet penetration in Russia is lower than that for the European Union (67%) and especially North America (78%)¹¹ there is qualitative evidence that the importance of the Internet in Russia is rising due to both the increasing availability and the growing level of trust. For example, a YouTube video which demonstrates Vladimir Putin being booed after a martial arts match (just one of several videos) gained 3.7 million views which exceeds the average audience of evening TV news (equal to 3.1 million).¹²

3 Hypotheses

According to anecdotal evidence discussed above consumption of political content in the Internet in Russia can lead to less positive attitude towards the government (represented in this work by United Russia, Vladimir Putin and Dmitry Medvedev). If this statement is correct then in the regressions of political preferences (dummies for whether a person supports a party or a politician) on Internet usage one would expect a negative sign when a government party (or Vladimir Putin, or Dmitry Medvedev) is considered and a positive sign when an opposition party (Yabloko) is considered.

The effects may be different in magnitude (and significance) for different groups of people. In particular, I expect that educated people are more likely to read news in the Internet rather than use it for entertainment. These differences may be evaluated directly

⁸See <http://tasstelecom.ru/news/one/5729>

⁹Where Internet users are those who used it during the last week.

¹⁰<http://bd.fom.ru/pdf/Internet%20v%20Rossii%20vol%2033%20vesna%202011%20short.pdf>

¹¹The data is taken from <http://www.internetworldstats.com/stats9.htm> for the European Union and from <http://www.internetworldstats.com/stats14.htm> for North America.

¹²The data from <http://www.ft.com/intl/cms/s/0/85dd8e96-1c2d-11e1-9631-00144feabdc0.html> and <http://www.youtube.com/watch?v=armHReCv1P4>

by estimating the effects for different subsamples of people.

4 Data

4.1 GeoRating data

The data on political participation and preferences is taken from GeoRating survey—which is representational at the regional level—carried out in February 2011 in Russia. For the survey 54,388 respondents in 2,187 localities (92 regions) were interviewed.

To define whether a person supports Vladimir Putin and Dmitry Medvedev the following two questions are used: “Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Participation and preferences over political parties are identified using another question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.”

The data on Internet usage is obtained from answers to the following questions: “Have you ever used the Internet? If yes, when did you use it the last time?” and “During the past six months, where did you use the Internet?” In the baseline case a person was treated as an Internet user if she used the Internet during the last day or the last week (measure 1). In different specifications used as robustness checks Internet users were those who used the Internet at home, at work or at place of study (measure 2). As I want to identify those who are more likely to consume online political content, the first measure seems to be more appropriate. It is not very important where a person is able to access the Internet, but the frequency of usage is related to the probability of encountering political news.

In the locality level regressions individual responses are aggregated to represent shares of respondents who support parties/politicians, use the Internet, etc.

The demographic data (gender, age, level of education, income) was also taken from

the survey.

Tables 2–12 contain summary statistics. The statistics are calculated for the whole survey as well as for supporters of different parties. Table 13 reports pairwise correlations of the main variables. The correlations show that age, being a male and having at least unfinished higher education are negatively correlated with positive attitudes towards Vladimir Putin, Dmitry Medvedev and United Russia. The correlations between political preferences and Internet usage are mostly small and positive. In particular, there is a positive correlation between being an Internet user and supporting Vladimir Putin, Dmitry Medvedev and United Russia. However, these correlations are probably driven by omitted variables. In particular, as other correlations show, young people are more likely to vote for United Russia as well as to use the Internet.

4.2 Internet availability data

The identification strategy is based on the idea—pointed out in Miner (2011)—that the costs of providing the broadband Internet service are increasing with the distance to the backbone. To calculate this distance I use geographical data provided by the OpenStreetMap project in the form of layer-files which can be analyzed using a geoprocessing program such as ArcGIS. Other sources of data are broadband network schemes plotted by Standard magazine and Mobile TeleSystems (MTS). These schemes were manually put in a format which allows geographical analysis in ArcGIS.¹³

5 Identification strategy

One of the important conditions necessary for Internet usage is that an Internet connection should be available. Locality level networks are connected by means of major routes called backbones. The backbone networks in Russia as of September 2011 are listed in Table 1. A large town usually has at least one backbone passing through it. For smaller localities distances to the nearest backbones can be considerable. As outlined in the previous

¹³Layer-files are available upon request.

section distances to ISPs' backbones are used to instrument Internet usage. To account for potential nonlinearities I use a fifth-order polynomial of the distance.¹⁴ Another reason to include nonlinear terms is that the data on the backbone networks is not very precise and those localities which are far from the considered backbones are potentially close to networks for which the data is not available. Figure 1 below presents the relation between locality-level Internet penetration (calculated using the self-reported Internet usage from the survey) and the distance to the nearest backbone (for clarity in the figure I consider localities not farther than 200 km from a backbone).

Table 1: Backbone Networks in Russia

Operator	Length of the network (thousand km)
Rostelecom	500.0
Mobile TeleSystems (MTS)	117.0
VimpelCom	111.0
Synterra	75.5
TransTeleCom	75.0
Megafon	33.0
Start Telecom	16.0
Equant	8.0
Rascom	7.4
TeliaSonera	2.0

Source: A scheme provided by Standard magazine.

I test whether large cities are indeed more likely to have at least one backbone passing through them and whether election results in the past drive the expansion of backbone

¹⁴If one chooses among the orders from 1 to 10 and aims to maximize the F-statistic at the first-stage she is more likely to use the fourth-order polynomial. However, the F-statistic for the fifth order is close to that for the fourth order. I use a fifth-order polynomial in line with Enikolopov, Petrova, and Zhuravskaya (2010) where the fifth order was used for controls.

networks.¹⁵ Table 14 in the Appendix reports a series of estimates from linear probability models in which a dummy for presence of a backbone in the locality is regressed on—depending on the specification—a dummy for city, logarithm of the population (or its polynomial), a number of socio-demographic characteristics and election results for United Russia in the 2007 parliamentary elections. Importantly, in none of the specifications election results are statistically significant. Although in the subsequent regressions locality characteristics are insignificant, it can be attributed to a large drop in the number of degrees of freedom.¹⁶ In any case, there seems to be no reason to believe that election results determined the expansion of the backbone networks.¹⁷

6 Results

6.1 Locality-level results

The first series of specifications studies whether there is an aggregate, locality-level, effect of Internet usage on the shares of supporters of Putin, Medvedev and the parliamentary parties (y_{ri} in the equation below). I use a limited information maximum likelihood (LIML) approach as it is shown by Staiger and Stock (1994) to generate more satisfactory results when the instruments are potentially weak.¹⁸

The implied econometric model is the following:

$$y_{ri} = \delta \cdot Int_{ri} + \beta_1' x_{ri}^c + \beta_2' x_{ri}^e + \mu_r + e_{ri}, \quad \mathbb{E}[e_{ri} | x_{ri}^c, x_{ri}^e, z_{ri}, \mu_r] = 0, \quad (1)$$

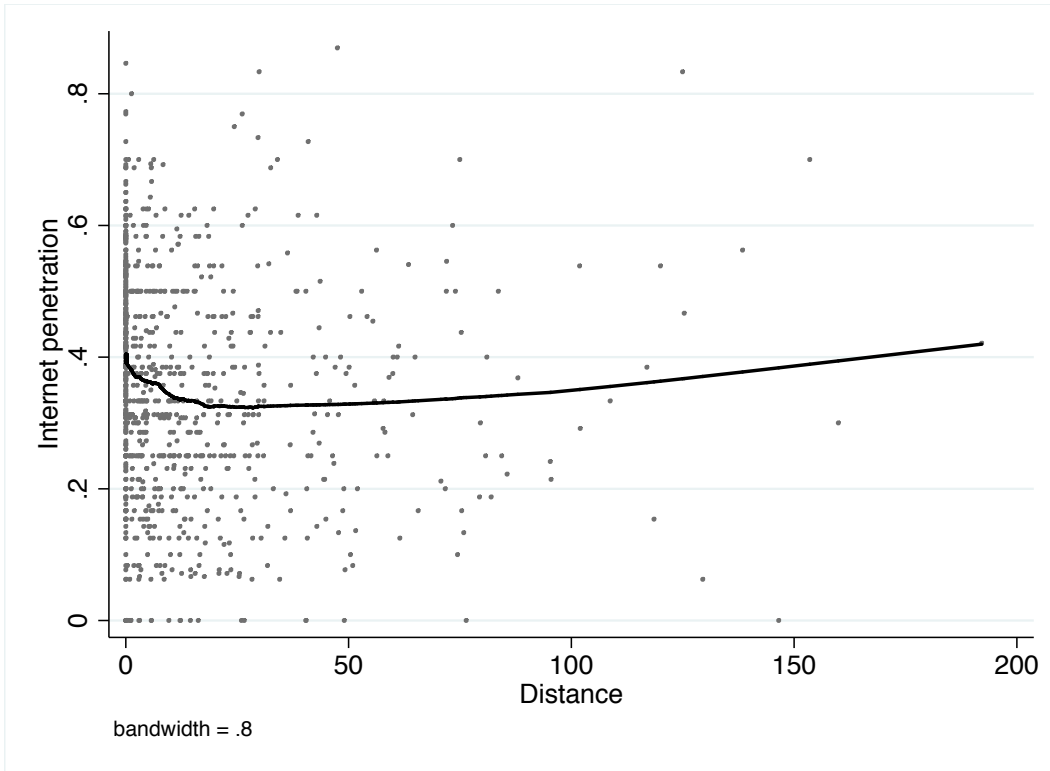
¹⁵This cannot be ruled out a priori as some of the ISPs are owned by the government (and even private companies may be influenced by authorities). In particular, as of April 2012 the government—by means of Rosimuschestvo—owned 51% of Rostelecom, an operator of the largest backbone network in Russia.

¹⁶I have local election results for a much smaller number of observations.

¹⁷If election results of the 2003 parliamentary elections or the 2008 presidential elections are considered the statistical results remain close to those reported.

¹⁸Most of the main estimates—in both the locality-level and the individual-level regressions—are practically unchanged when I consider 2SLS or two-step GMM instead of LIML. The only important difference is that the effect of the Internet becomes significant at the 5% level in the individual-level regression for United Russia. However, as LIML and 2SLS agree and as the theory suggests using LIML, I stick to the baseline estimates.

Figure 1: Lowess Smoother for Internet Penetration



where for each locality i in region r : Int_{ri} , the main independent variable, is the local Internet usage value calculated as a fraction of respondents who reported using the Internet during the last week. Vector x_{ri}^c is a set of locality and personal characteristics, x^e is a set of the parliamentary election results in 2007 and μ_r are regional fixed effects. Vector z_{ri} represents excluded instruments (which are, as stated above, up to the fifth powers of the distance to the nearest backbone). The errors e_{ri} are assumed to be correlated within regions.

I start by presenting the OLS estimates of the Internet usage effect on the shares of United Russia voters and Vladimir Putin's supporters in Table 15. Although the estimates are relatively stable in specifications (1)–(3) (and (4)–(6)) and have expected signs they cannot be interpreted in a causal way as Internet usage is unlikely to be exogenous.

Table 17 contains the results of the estimation with instrumental variables employed.¹⁹ To assess whether weak identification is likely to be a concern I report several statistics. As errors are assumed to be correlated within regions a rank test derived by Kleibergen and Paap (2006) is used instead of a usual Cragg-Donald Wald F -statistic from Cragg and Donald (1993). The value of the statistic should be compared with critical values for LIML estimation tabulated by Stock and Yogo (2002). The highest significance level available is 10% and the value is 4.840. As the results suggest, there is statistical significance at the 10%-level in all of the specifications considered. However, tests for underidentification lead to somewhat mixed results. In particular, a test from Angrist and Pischke (2009) rejects the underidentification hypothesis at least at the 10%-level in all of the specifications, but Kleibergen-Paap rk LM -statistic is not statistically significant at the conventional levels (except for specifications (1) and (4) which are unlikely to be meaningful).

In (1) the share of United Russia supporters at the locality-level is regressed on the share of Internet users which is instrumented by a fifth-order polynomial of the distance to the nearest backbone. In (2) a number of socio-demographic characteristics (share of males, average age and its square, share of people with at least three years of education in a university—unfinished higher education) and a dummy for cities are included. Specification (3) contains in addition a fifth-order polynomial of the logarithm of the locality population. This data is available for a limited sample of localities which are likely to be larger and somewhat different from those without population data.²⁰ Some statistics for both types of localities are reported in Table 18.²¹ Although the averages in two subsamples are different, they lie in not more than one standard deviation from each other. Specifications (4)–(6) replicate (1)–(3) for the share of Putin’s supporters as the dependent variable. In specifications (3) and (6) I also report weak instruments robust confidence sets based on Anderson and Rubin (1949).

The main estimates in (3)—those for the share of Internet users—have counterintuitive

¹⁹The corresponding first-stage OLS results are reported in Table 22.

²⁰However, the estimates of the effect of Internet usage are not significant for both subsamples.

²¹In addition, when a dummy for the availability of population data is regressed on a dummy for city the coefficient on this dummy is 0.586 and the standard error is 0.023.

signs. However, they are insignificant at the conventional levels in all of the considered specifications. Notably, the weak instruments robust confidence set in (3) lies strictly in the negative domain. This disagrees with a positive and insignificant point estimate. However, this result and the fact that the confidence set in (6) contains zero is somewhat expected as the Internet campaign of the opposition was perhaps especially harmful for United Russia.²²

In Table 19 the estimates for attitudes towards Dmitry Medvedev and parties other than United Russia, as well as for (un-)willingness to vote or to spoil the ballot, are reported. The only statistically significant (at the 5% level) estimate in the table is that for Yabloko. This result is still present when the individual-level models are considered. It is discussed in Section 6.2.

The last group of estimates (Table 20) in this subsection is obtained for the full set of controls as assumed in model (1), i.e. election results of the 2007 parliamentary elections are included. The number of observation decreases substantially and the only estimate significant in the previous table (for Yabloko) loses its significance. Interestingly, the estimate for United Russia becomes significant at the 10% level.²³ Nevertheless, there is no strong evidence in favor of a statistically significant effect of Internet usage on political preferences at the locality-level.

Next, I switch to the individual-level specifications which allow to estimate the effects separately for different groups of people.²⁴

6.2 Individual-level results

In the most advanced individual-level regressions I control for a series of personal characteristics: gender, age, age², a fifth-order polynomial of income, higher education; as

²²For example in the beginning of 2011 a very popular meme about the party was coined: Alexey Navalny described United Russia as a “party of crooks and thieves.” This definition became especially popular in the Internet which can be associated with a significant spread of negative information about the party through the web. See <http://www.youtube.com/watch?v=1eHWbcmd74E>

²³Note also that according to the reported statistics the instruments are unlikely to be weak.

²⁴Section 7 presents some additional locality-level results.

well as for locality characteristics: a dummy for cities, a fifth-order polynomial of the logarithm of the locality population. I also include regional fixed effects. Unfortunately, I cannot control for previous voting intentions so the specification is a bit different from model (1):

$$y_{rli} = \delta \cdot Int_{rli} + \beta_1' x_{rli}^{ind} + \beta_2' x_{rl}^{loc} + \mu_r + e_{rli}, \quad \mathbb{E} [e_{rli} | x_{rli}^{ind}, x_{rl}^{loc}, z_{rl}, \mu_r] = 0, \quad (2)$$

where now for each person i in locality l and region r : Int_{rli} is a dummy for whether a person is an Internet user. Vectors x_{rli}^{ind} and x_{rl}^{loc} are individual- and locality-level controls respectively; μ_r are regional fixed effects. Vector z_{rl} represents excluded instruments (which are exactly the same as in the locality-level models). The errors e_{ri} are assumed to be correlated within localities.

Table 21 contains the estimates from the OLS specifications similar to those from the locality-level case in Section 6.1. Counterintuitive positive and significant estimates in (1) and (4) suggest that omitted variable bias is likely to be a concern. In the other specifications the effect of Internet usage is not statistically significant at the conventional levels.

Table 23 reports the results in line with the locality-level estimates:²⁵ in (1) I omit the controls, in (2) all the controls except for the locality population are included, (3) contains the whole set of controls and the locality population (so, as in the previous subsection, the number of observations decreases).²⁶ Similarly to the locality-level regressions I use the LIML approach and report the same set of statistics. In terms of statistical significance the main results appear to be the same as those from the locality-level specifications—insignificant at the conventional levels of significance. Again, the weak instruments robust confidence set for specification (3) does not contain zero while that for (6) does. As a result, it is difficult to unambiguously conclude that there is a statistically significant effect of Internet usage on attitudes of people towards United Russia and Vladimir Putin. In Table 24 I report the estimates of interest for attitudes towards Dmitry Medvedev,

²⁵The first-stage OLS results are reported in Table 16.

²⁶Estimates obtained in specification (2) for both subsamples—with and without population data—are insignificant on conventional levels.

political parties other than United Russia and for (un-)willingness to vote. The results obtained are worth being interpreted. The estimate for Yabloko (specification (7)) is significant at the 5% level. Yabloko was “the only opposition democratic party to participate in the elections”²⁷ and some of those people who consumed political news online probably decided to support the party in the upcoming elections.

In Table 25 I present the effects of Internet usage—on attitudes towards United Russia, Yabloko, Vladimir Putin and on (un-)willingness to vote—estimated separately for different groups of people (using the most advanced specifications with the whole set of personal and locality-level characteristics and controlling for population). In particular, I consider subsamples of young people (age < 30)²⁸, men and women, people with at least unfinished higher education. The results suggest that there is a statistically significant (at the 5% level) effect of Internet usage on the probability of choosing United Russia as a party to support—respondents choose a party which they are likely to vote for—when we consider only those people who have at least unfinished higher education. This can be explained by differences in types of online content consumption between those who are educated and those who are not. If we suppose that more educated people are more likely to acquire political news online than less educated people, this effect would be expected. Interestingly, there are also statistically significant effects on attitude towards Yabloko (at the 5% level) and on (un-)willingness to vote (at the 10% level) among women. Perhaps, women are more likely to reconsider their political views when they get additional information from online sources. The fact that there is no statistically significant effect for Yabloko among educated people (while there was one for the full sample) may be a consequence of the following. More educated people probably search for information more thoroughly. In addition, Yabloko is a party for which information is more or less available both online and offline. So, those who are likely to support Yabloko do not need the Internet to provide the information about the party. However, those who do not support Yabloko can still switch from supporting United Russia (but not towards Yabloko) when

²⁷See <http://www.nytimes.com/2011/11/09/opinion/time-to-think-and-not-to-lean-on-russia.html>

²⁸Another subsample of people of age < 40 is used as a robustness check. The main estimate is insignificant in all of the specifications.

they start to consume political news online.

In the next section I present several robustness checks and alternative specifications.

7 Alternative specifications

7.1 Different measure of Internet usage

As described in Section 4.1 there is another question in the survey which can be used to construct a proxy for online content consumption. In Table 26 I report the main estimates obtained in the specifications similar to model (2), i.e. with the whole set of controls and population, where Internet users are those who use the Internet at home, at work or at place of study.

The corresponding estimates have the same statistical significance and are similar in magnitude. This is quite expected given a large positive correlation between two measures of Internet usage (see Table 13).

7.2 Bivariate probit specification

As both the dependent variable and the main independent variable are both binary, a more natural estimation approach in terms of interpretation would be to apply non-linear binary-choice models. Although linear probability models are unrealistic in their assumption of a constant effect, Angrist (2001) argues: “Once the object of estimation is taken to be the causal effect of treatment, several simple strategies are available. These include conventional two-stage least squares, multiplicative models for conditional means, linear approximation of nonlinear causal models, models for distribution effects, and quantile regression with an endogenous binary regressor.” More precisely (from the same source): “conventional 2SLS estimates using a linear probability model are consistent whether or not the first-stage CEF²⁹ is linear.” On the other hand, when a model such as probit or logit is used at the first-stage, “the resulting second-stage estimates are inconsistent,

²⁹CEF means conditional expectation function.

unless the model for the first-stage CEF is actually correct.”³⁰ However, as an additional robustness check, I report average marginal effects estimated in a bivariate probit specification:

$$y_{rli}^* = \delta \cdot Int_{rli} + \beta'_{11} x_{rli}^{ind} + \beta'_{12} x_{rl}^{loc} + \mu_{1r} + e_{1rli} \text{ and } y_{rli} = 1 \text{ iff } y_{rli}^* > 0 \quad (3)$$

$$Int_{rli}^* = \gamma' z_{rl} + \beta'_{21} x_{rli}^{ind} + \beta'_{22} x_{rl}^{loc} + \mu_{2r} + e_{2rli} \text{ and } Int_{rli} = 1 \text{ iff } Int_{rli}^* > 0 \quad (4)$$

$$(e_{1rli}, e_{2rli})' \sim \mathcal{N}(0, \Sigma), \quad (5)$$

where, as before, Int_{rli} is a dummy for whether a person is an Internet user; x_{rli}^{ind} and x_{rl}^{loc} are individual- and locality-level controls respectively; μ_{kr} , $k = 1, 2$ are regional fixed effects. Vector z_{rl} represents excluded instruments. Errors are still clustered at the regional level.

The estimated coefficients for Internet usage are not significant in any of the specifications considered.³¹ As they are neither very meaningful, I do not report them. Nevertheless, in Table 27 I present average marginal effects estimated as averages of the estimated differences:

$$\Pr \{y_{rli} = 1 | Int_{rli} = 1, x_{rli}^{ind}, x_{rl}^{loc}\} - \Pr \{y_{rli} = 1 | Int_{rli} = 0, x_{rli}^{ind}, x_{rl}^{loc}\},$$

i.e. differences in probabilities of choosing a particular option in the survey (like being a United Russia supporter).

The estimated marginal effects have the same signs as the estimated coefficients in the baseline individual regressions for those cases when the coefficients are significant (United Russia on the educated subsample and Yabloko). In fact, the only marginal effect which has a different sign is that for United Russia on the full sample. In terms of the magnitudes of the effects they are considerably different (uniformly lower in absolute terms) which can seem reasonable. On the other hand, as cited above from Angrist (2001), this can be a consequence of a misspecified model.

³⁰Again, Angrist (2001).

³¹In fact, the lowest p -value, that for the effect of the Internet on attitude towards Yabloko, is 0.2.

7.3 Another instrumental variable

If one considers a limited sample of localities which have at least one backbone passing through them (so that the distance is equal to zero) she can assume that the number of such backbones is correlated with the availability of the Internet. In fact, when the number of ISPs which have their backbones in the town is large they are likely to compete. This will lower prices in the equilibrium and the Internet will be more easily available.³² I exploit this idea and estimate the effect of Internet usage on political views using the number of backbones passing through the town as an instrument for Internet usage. The results (obtained in the specifications with the whole set of controls) are reported in Table 28.

These results are still insignificant and most of them (except for the estimate of the effect on attitude towards Vladimir Putin) are somewhat close in magnitude to the previously obtained estimates. As the statistics reported in the table suggest, we cannot rule out weak identification. So the weak instruments robust 5% confidence sets are calculated. Importantly, the only one which does not contain zero is that for Yabloko supporters. This conforms with the estimates from the main model.

7.4 Effect on the protest movement

One of the hypotheses about the effect of the Internet on politics is that people communicate via online social networks and coordinate their actions. As mentioned in the introduction, it is widely believed that the Internet played this role during the Arab Spring. I try to measure this effect directly using the data on the recent protests in Russia.³³ In Table 29 I report the estimates of the effect of local Internet usage on two variables: the total number of people participated in the corresponding `vkontakte.com`³⁴ groups, and the approximate total number of people who actually took part in the demon-

³²In a univariate regression—not reported in this work—where the lowest price for an Internet connection service in the locality is regressed on the number of backbones passing through the locality, this number is statistically significant at the 5% level.

³³I am very grateful to Ruben Enikolopov and Maria Petrova for sharing this data with me.

³⁴The most popular social network in Russia. See: [http://en.wikipedia.org/wiki/VK_\(social_network\)](http://en.wikipedia.org/wiki/VK_(social_network))

strations (the numbers are aggregated across dates). It is quite expected that there is a large and significant effect on the former variable as one needs some sort of an Internet connection to access `vkontakte.com`. I find no statistically significant effect on the latter variable which may be a consequence of a small sample.³⁵

Another estimation approach is to use non-aggregated data and include fixed effects of different dates. In Table 30 I report the estimates from three different specifications. Specification (1) considers a simple OLS model with the whole set of controls (including regional fixed effects) as in the baseline locality-level models.³⁶ Interestingly, although not statistically significant at the conventional levels, the main estimate, that for Internet usage, is negative. When we consider an instrumental variable model (estimated using LIML) in specification (2) the coefficient becomes significant at the 5% level. This result is counterintuitive to the coordination role of the Internet. Nevertheless, at least one potential explanation can be offered. The protests followed Russian legislative elections of 2011. The main claim of the protesters was that the authorities tolerated serious irregularities during the elections. The official results revealed soon after the elections could contradict subjective beliefs of people. If those who use the Internet more intensively are less likely to be impressed by this contradiction (as their attitudes towards the authorities are less favorable) they are probably less likely to participate in the protests. There is no strong evidence in favor of this explanation. However, in specification (3)—a simple ordinary least squares regression—when the time trend is included and the effect of Internet usage is assumed to linearly change over time, the point estimate of the effect is negative for $t = 1$ and on average the higher is local Internet penetration the higher (perhaps still negative though) is the percent change in the number of protesters during any Δt (this is just a speculation on the point estimates which are not significant at the conventional levels).³⁷ This is consistent with the explanation offered and the coordination effect of

³⁵Note, that the specification used is a bit different from those from Table 17. In particular, not to decrease the number of degrees of freedom too much, regional fixed effects are not included and only linear terms of $\log(\text{Population})$ and Average Income are accounted for.

³⁶Except for the 2007 election results due to a low number of observations with the data available.

³⁷It can be also noted that when Moscow is dropped from the sample the estimate in (2) is almost unchanged and is still significant at the 10% level.

the Internet due to which in a locality with higher Internet penetration the number of protester may increase faster (or decrease slower).

Overall, this subsection does not present any serious evidence. The first results are interesting and the data requires more careful treatment.

8 Conclusion

As discussed in Section 6 the estimates present some evidence in favor of the effect of Internet usage on political preferences of people, but this evidence is rather weak. On average, there is no statistically significant (at the conventional levels) effect of Internet usage on attitudes towards United Russia and Vladimir Putin, as well as on willingness to vote. However, if one trusts those point estimates obtained which are significant, Internet usage increases the probability of supporting Yabloko by 10%. There is also a negative effect on attitude towards United Russia when I consider educated people only. Internet usage is estimated to decrease the probability of supporting the party by as much as 80%. The effects for women are larger (and significant) than those for men when I consider both attitude towards Yabloko (a point estimate of almost 20% significant at the 5% level) and willingness to vote (20%, significant at the 10% level).

The main concern in this work is that the data on the backbone networks is very imprecise which leads to the instruments being not very strong. With more accurate data one is likely to obtain more reliable estimates.

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Appendix: Tables

Table 2: Overall Individual Level Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev’s supporter	0.680	0.466	54,388
Putin’s supporter	0.735	0.442	54,388
ER’s voter	0.490	0.500	54,388
KPRF’s voter	0.101	0.302	54,388
LDPR’s voter	0.085	0.279	54,388
Patriots’ voter	0.008	0.088	54,388
Right Cause’s voter	0.003	0.050	54,388
SR’s voter	0.047	0.213	54,388
Yabloko’s voter	0.007	0.085	54,388
Will spoil the ballot	0.012	0.109	54,388
Will not participate	0.132	0.339	54,388
<i>Independent variables</i>			
Internet user 1	0.390	0.488	54,388
Internet user 2	0.406	0.491	54,388
<i>Controls</i>			
Male	0.449	0.497	54,388
Age	44.8	17.2	54,388
Higher education dummy	0.204	0.403	54,388
Income	8,212.6	8,035.0	54,388

Notes: The table reports averages and standard deviations for the full sample of individuals. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: “Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: “During the past six months, where did you use the Internet?”) ‘Higher education dummy’ is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. ‘Income’ variable is constructed as the average for a group.

Table 3: Medvedev Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Putin's supporter	0.952	0.214	37,006
ER's voter	0.624	0.484	37,006
KPRF's voter	0.074	0.261	37,006
LDPR's voter	0.064	0.244	37,006
Patriots' voter	0.008	0.089	37,006
Right Cause's voter	0.002	0.045	37,006
SR's voter	0.048	0.214	37,006
Yabloko's voter	0.005	0.071	37,006
Will spoil the ballot	0.007	0.081	37,006
Will not participate	0.076	0.266	37,006
<i>Independent variables</i>			
Internet user 1	0.391	0.488	37,006
Internet user 2	0.405	0.491	37,006
<i>Controls</i>			
Male	0.417	0.493	37,006
Age	44.4	17.5	37,006
Higher education dummy	0.198	0.298	37,006
Income	8,228.1	7,917.9	37,006

Notes: The table reports averages and standard deviations for the subsample of individuals who support Dmitry Medvedev. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Voters of different parties are identified using the question: "Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?" The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: "Will spoil the ballot." Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 4: Putin Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.881	0.323	39,957
ER's voter	0.609	0.488	39,957
KPRF's voter	0.076	0.265	39,957
LDPR's voter	0.068	0.252	39,957
Patriots' voter	0.008	0.088	39,957
Right Cause's voter	0.002	0.045	39,957
SR's voter	0.048	0.213	39,957
Yabloko's voter	0.005	0.071	39,957
Will spoil the ballot	0.007	0.083	39,957
Will not participate	0.083	0.276	39,957
<i>Independent variables</i>			
Internet user 1	0.393	0.488	39,957
Internet user 2	0.408	0.491	39,957
<i>Controls</i>			
Male	0.420	0.494	39,957
Age	44.3	17.4	39,957
Higher education dummy	0.198	0.399	39,957
Income	8,186.9	7,879.9	39,957

Notes: The table reports averages and standard deviations for the subsample of individuals who support Vladimir Putin. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Voters of different parties are identified using the question: "Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?" The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: "Will spoil the ballot." Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 5: United Russia Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.867	0.340	26,644
Putin's supporter	0.914	0.281	26,644
<i>Independent variables</i>			
Internet user 1	0.403	0.491	26,644
Internet user 2	0.418	0.493	26,644
<i>Controls</i>			
Male	0.381	0.486	26,644
Age	42.9	17.1	26,644
Higher education dummy	0.190	0.392	26,644
Income	7,993.9	7,812.0	26,644

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to vote for United Russia. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 6: Communist Party Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.494	0.500	5,519
Putin's supporter	0.552	0.497	5,519
<i>Independent variables</i>			
Internet user 1	0.209	0.407	5,519
Internet user 2	0.224	0.418	5,519
<i>Controls</i>			
Male	0.521	0.500	5,519
Age	56.3	16.0	5,519
Higher education dummy	0.198	0.399	5,519
Income	8,409.9	6,979.7	5,519

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to vote for KPRF. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 7: Liberal Democratic Party Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.508	0.500	4,636
Putin's supporter	0.589	0.492	4,636
<i>Independent variables</i>			
Internet user 1	0.451	0.497	4,636
Internet user 2	0.465	0.499	4,636
<i>Controls</i>			
Male	0.633	0.482	4,636
Age	39.9	15.2	4,636
Higher education dummy	0.179	0.383	4,636
Income	8,608.8	8,939.4	4,636

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to vote for LDPR. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 8: Patriots of Russia Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.705	0.457	420
Putin's supporter	0.740	0.439	420
<i>Independent variables</i>			
Internet user 1	0.495	0.501	420
Internet user 2	0.519	0.500	420
<i>Controls</i>			
Male	0.507	0.501	420
Age	42.4	16.7	420
Higher education dummy	0.264	0.441	420
Income	8,791.7	8,862.4	420

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to vote for Patriots of Russia. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 9: Right Cause Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.543	0.500	138
Putin's supporter	0.580	0.495	138
<i>Independent variables</i>			
Internet user 1	0.478	0.501	138
Internet user 2	0.536	0.501	138
<i>Controls</i>			
Male	0.529	0.501	138
Age	42.7	15.7	138
Higher education dummy	0.349	0.478	138
Income	11,105.1	13,198.9	138

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to vote for Right Cause. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 10: Yabloko Supporters Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev's supporter	0.472	0.500	398
Putin's supporter	0.508	0.501	398
<i>Independent variables</i>			
Internet user 1	0.558	0.497	398
Internet user 2	0.580	0.494	398
<i>Controls</i>			
Male	0.513	0.500	398
Age	46.1	16.1	398
Higher education dummy	0.452	0.498	398
Income	11,886.9	11,925.4	398

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to vote for Yabloko. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: "Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?" Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: "During the past six months, where did you use the Internet?") 'Higher education dummy' is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. 'Income' variable is constructed as the average for a group.

Table 11: “Spoil the Ballot” Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev’s supporter	0.378	0.485	654
Putin’s supporter	0.426	0.494	654
<i>Independent variables</i>			
Internet user 1	0.508	0.500	654
Internet user 2	0.521	0.500	654
<i>Controls</i>			
Male	0.567	0.496	654
Age	42.9	15.0	654
Higher education dummy	0.307	0.462	654
Income	9,389.1	10,116.4	654

Notes: The table reports averages and standard deviations for the subsample of individuals who are planning to spoil the ballot. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: “Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: “During the past six months, where did you use the Internet?”) ‘Higher education dummy’ is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. ‘Income’ variable is constructed as the average for a group.

Table 12: “Will Not Participate” Summary Statistics

Variable	Mean	Std. deviation	Observations
<i>Dependent variables</i>			
Medvedev’s supporter	0.393	0.489	7,191
Putin’s supporter	0.461	0.499	7,191
<i>Independent variables</i>			
Internet user 1	0.408	0.491	7,191
Internet user 2	0.421	0.494	7,191
<i>Controls</i>			
Male	0.530	0.499	7,191
Age	44.1	16.3	7,191
Higher education dummy	0.204	0.403	7,191
Income	8,161.5	8,292.5	7,191

Notes: The table reports averages and standard deviations for the subsample of individuals who are not planning to participate in the parliamentary elections. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: “Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: “During the past six months, where did you use the Internet?”) ‘Higher education dummy’ is equal to 1 for those individuals who have at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. ‘Income’ variable is constructed as the average for a group.

Table 13: Individual Level Pairwise Correlations

VAR	Med	Put	ER	Spoil	NoVote	Int 1	Int 2	Male	Age	Educ	Inc
Med	1.00										
Put	0.718	1.00									
ER	0.392	0.398	1.00								
Spoil	-0.072	-0.078	-0.108	1.00							
NoVote	-0.240	-0.242	-0.383	-0.043	1.00						
Int 1	0.002	0.009	0.026	0.027	0.014	1.00					
Int 2	-0.003	0.006	0.024	0.026	0.012	0.878	1.00				
Male	-0.093	-0.097	-0.135	0.026	0.063	0.060	0.046	1.00			
Age	-0.028	-0.050	-0.109	-0.012	-0.015	-0.524	-0.513	-0.111	1.00		
Educ	-0.020	-0.022	-0.033	0.029	0.001	0.298	0.307	-0.042	-0.109	1.00	
Inc	0.003	-0.005	-0.027	0.016	-0.003	0.143	0.161	0.118	0.041	0.143	1.00

Notes: The table reports pairwise correlations between variables for the full sample of individuals. ‘Med’ = Medvedev’s supporter, ‘Put’ = Putin’s supporter, ‘ER’ = ER’s voter, ‘Spoil’ = is going to spoil the ballot, ‘NoVote’ = is not going to participate, ‘Int 1’ = Internet user (measure 1), ‘Int 2’ = Internet user (measure 2), ‘Educ’ = dummy for at least unfinished higher education, ‘Inc’ = average income for the corresponding income group (in the survey there is no precise value for income and only the income group is reported). Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: “Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: “During the past six months, where did you use the Internet?”)

Table 14: Presence of a Backbone and Locality Characteristics

Variable	Presence of a backbone in the locality				
	(1a)	(1b)	(2a)	(2b)	(3)
<i>Locality characteristics</i>					
City dummy	0.025 (0.052)	0.076 (0.058)		0.336 (0.298)	0.316 (0.290)
log(Population)	0.166 (0.014)***				
Average income $\times 10^{-6}$	4.639 (7.223)				
Fifth-order polynomial of log(Population) (<i>F</i> -statistic)		✓ (12.37)***		✓ (0.520)	✓ (0.540)
Fifth-order polynomial of Average income (<i>F</i> -statistic)		✓ (0.030)		✓ (5.480)***	✓ (4.910)***
<i>Election results</i>					
Share of votes for ER in '07			-2.266 (1.376)	-0.569 (1.316)	-0.655 (1.395)
Turnout in '07			1.539 (1.301)	0.979 (1.352)	0.913 (1.525)
<i>Socio-demographic characteristics</i>					
Share of males					-1.179 (1.416)
Average age and Average age ² (<i>F</i> -statistic)					✓ (0.140)
Fraction of people with higher education					0.378 (0.822)
Regional fixed effects	✓	✓	✓	✓	✓
# Observations	685	685	184	182	182
<i>F</i> -statistic for locality characteristics	(82.76)***	(9.920)***		(2.490)**	(1.750)
<i>F</i> -statistic for '07 election results			(1.360)	(0.300)	(0.180)
<i>F</i> -statistic for socio-demographic characteristics					(0.320)

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the OLS regressions. Robust standard errors are in parentheses. The dependent variable is a dummy for whether the locality has a backbone passing through it. The 2007 election results are calculated relative to the number of registered voters (not to the number of distributed ballots—the number of people participated in the elections). ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals).

Table 15: Locality-level Results (OLS)

Variable	The fraction of supporters of					
	United Russia			Putin		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Locality characteristics</i>						
Internet usage	-0.093 (0.045)**	-0.064 (0.053)	-0.089 (0.068)	-0.061 (0.039)	-0.053 (0.049)	-0.110 (0.052)**
City dummy		-0.039 (0.013)***	-0.022 (0.020)		-0.028 (0.013)**	-0.013 (0.020)
Fifth-order polynomial of log(Population) (F-statistic)			✓ (0.320)			✓ (0.360)
Fifth-order polynomial of Average income (F-statistic)		✓ (1.030)	✓ (0.014)		✓ (0.006)	✓ (0.190)
<i>Socio-demographic characteristics</i>						
Share of males		-0.051 (0.094)	-0.147 (0.133)		0.016 (0.117)	0.024 (0.169)
Average age and Average age ² (F-statistic)		✓ (8.870)***	✓ (3.100)*		✓ (2.780)*	✓ (1.330)
Fraction of people with higher education		-0.234 (0.087)***	-0.161 (0.112)		-0.104 (0.063)	-0.056 (0.076)
Regional fixed effects	✓	✓	✓	✓	✓	✓
# Observations	964	964	685	964	964	685

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the OLS regressions. Standard errors clustered at the regional level are in parentheses. The dependent variables are the fraction of those in the locality who are planning to vote for United Russia (specifications (1)–(3)) and the fraction of those in the locality who support Vladimir Putin (specifications (4)–(6)). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of United Russia are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The main independent variable is ‘Internet usage’. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals).

Table 16: Locality-level First-stage

Variable	The fraction of Internet users		
	(1)	(2)	(3)
<i>Locality characteristics</i>			
Distance $\times 10^{-3}$	-2.098	-0.351	-0.084
	(0.603)***	(0.449)	(0.538)
Distance ² $\times 10^{-6}$	18.62	0.825	-0.183
	(6.800)***	(5.102)	(5.904)
Distance ³ $\times 10^{-9}$	-37.22	4.743	7.053
	(16.14)**	(12.352)	(14.04)
Distance ⁴ $\times 10^{-12}$	27.31	-8.996	-11.26
	(13.83)*	(10.85)	(12.20)
Distance ⁵ $\times 10^{-15}$	-6.683	3.539	4.242
	(3.866)*	(3.099)	(3.464)
City dummy		0.047	0.026
		(0.010)***	(0.018)
Fifth-order polynomial of log(Population)			✓
(F-statistic)			(0.930)
Fifth-order polynomial of Average income		✓	✓
(F-statistic)		(0.410)	(0.320)
<i>Socio-demographic characteristics</i>			
Share of males		-0.064	-0.079
		(0.073)	(0.101)
Average age and Average age ²		✓	✓
(F-statistic)		(53.65)***	(27.15)***
Fraction of people with higher education		0.370	0.327
		(0.056)***	(0.066)***
F-statistic for Distance,...,Distance ⁵	4.830***	64.25***	70.74***
Regional fixed effects	✓	✓	✓
# Observations	964	964	685

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The table reports estimates obtained from the first-stage OLS regressions. Standard errors clustered at the regional level are in parentheses. The dependent variables is 'Internet usage'. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Variable 'Distance' is equal to the distance from the locality to the nearest backbone. 'City dummy' equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals).

Table 17: Locality-level Results (LIML)

Variable	The fraction of supporters of					
	United Russia			Putin		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Locality characteristics</i>						
Internet usage	-0.328 (0.403)	-0.157 (0.770)	0.330 (0.341)	-0.500 (0.519)	-0.333 (1.327)	0.062 (0.541)
AR weak ID robust 5% confidence interval			[-1.01,-0.36]			[-2.06, 1.03]
City dummy		-0.034 (0.040)	-0.034 (0.026)		-0.014 (0.066)	-0.020 (0.026)
Fifth-order polynomial of log(Population) (Wald-statistic)			✓ (7.790)			✓ (2.230)
Fifth-order polynomial of Average income (Wald-statistic)		✓ (2.320)	✓ (0.520)		✓ (0.190)	✓ (0.430)
<i>Socio-demographic characteristics</i>						
Share of males		-0.058 (0.099)	-0.112 (0.105)		-0.003 (0.147)	0.034 (0.152)
Average age and Average age ² (Wald-statistic)		✓ (4.300)	✓ (0.060)		✓ (0.450)	✓ (0.040)
Fraction of people with higher education		-0.201 (0.286)	-0.290 (0.157)*		-0.003 (0.487)	-0.109 (0.184)
<i>Underidentification tests</i>						
Angrist and Pischke χ^2 -statistic	(17.45)***	(10.07)*	(10.18)*	(17.45)***	(10.07)*	(10.18)*
Kleibergen-Paap rk LM-statistic	(15.30)***	(5.270)	(4.040)	(15.30)***	(5.270)	(4.040)
<i>Weak identification test</i>						
Kleibergen-Paap rk Wald F-statistic	(1.3×10 ⁵)*	(64.25)*	(73.00)*	(1.3×10 ⁵)*	(64.25)*	(73.00)*
Regional fixed effects	✓	✓	✓	✓	✓	✓
# Observations	964	964	685	964	964	685

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the regional level are in parentheses. The dependent variables are the fraction of those in the locality who are planning to vote for United Russia (specifications (1)–(3)) and the fraction of those in the locality who support Vladimir Putin (specifications (4)–(6)). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of United Russia are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The main independent variable is ‘Internet usage’. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals). Statistics for underidentification tests and weak identification test are reported as well as weak ID robust Anderson-Rubin confidence sets.

Table 18: Summary Statistics for Localities

Variable	Population data available (685 observations)		Population data unavailable (279 observations)	
	Mean	Std. deviation	Mean	Std. deviation
Share of Putin supporters	0.726	0.157	0.757	0.169
Share of Medvedev supporters	0.672	0.170	0.705	0.188
Share of ER's voters	0.486	0.163	0.552	0.185
Share of KPRF's voters	0.102	0.083	0.099	0.090
Share of LDPR's voters	0.088	0.073	0.081	0.080
Share of Yabloko's voters	0.006	0.018	0.002	0.013
Share of non-participants	0.134	0.119	0.120	0.130
Distance to the nearest backbone	23.49	117.41	15.11	20.23
Share of Internet users	0.390	0.158	0.276	0.163
Share of males	0.442	0.051	0.464	0.066
Average age	44.89	3.29	45.55	3.78
Average income	8110.2	3498.7	6256.1	2945.4
Fraction of people with higher education	0.185	0.093	0.107	0.076

Notes: The table reports averages and standard deviations for the two subsamples of localities: those for which population data is available and those for which population data is unavailable. Supporters of Vladimir Putin and Dmitry Medvedev are those who responded positively on the questions: “Is President Medvedev/Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” Internet users (measure 1) are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet users (measure 2) are those who used the Internet at home, at work or at place of study (the question is: “During the past six months, where did you use the Internet?”) In the survey there is no precise value for income and only the income group is reported. ‘Higher education dummy’ is equal to 1 for those individuals who have at least unfinished higher education. ‘Income’ variable is constructed as the average for a group.

Table 19: Additional Locality-level Results

The fraction of the supporters of			
<i>Panel A</i>	(1)	(2)	(3)
Variable	Medvedev	KPRF	LDPR
Internet user	-0.281 (0.626)	0.155 (0.520)	-0.162 (0.106)
Regional fixed effects	✓	✓	✓
# Observations	685	685	685
<i>Panel B</i>	(4)	(5)	(6)
Variable	Patriots of Russia	Just Russia	Right Cause
Internet user	0.043 (0.048)	0.140 (0.060)**	-0.011 (0.011)
Regional fixed effects	✓	✓	✓
# Observations	685	685	685
<i>Panel C</i>	(7)	(8)	(9)
Variable	Yabloko	“Spoil the ballot”	“Will not participate”
Internet user	0.093 (0.043)**	0.355 (2.276)	-0.079 (0.081)
Regional fixed effects	✓	✓	✓
# Observations	685	685	685

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the regional level are in parentheses. The dependent variables are the fraction of those in the locality who support Dmitry Medvedev—(1), are planning to vote for KPRF—(2), LDPR—(3), Patriots of Russia—(4), Just Russia—(5), Right Cause—(6), Yabloko—(7), indicate their intention to spoil the ballot—(8), are not going to participate in the elections—(9). Supporters of Dmitry Medvedev are those who responded positively on the question: “Is President Medvedev good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is ‘Internet usage’. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” The other controls are: ‘City dummy’, ‘Fifth-order polynomial of $\log(\text{Population})$ ’, ‘Fifth-order polynomial of Average income’, ‘Share of males’, ‘Average age and Average age²’, ‘Fraction of people with higher education.’ ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals).

Table 20: Locality-level Results (2007 Election Controls Included)

Variable	The fraction of the supporters of			
	(1)	(2)	(3)	(4)
	United Russia	Putin	Yabloko	“Will not participate”
Internet user	-0.933 (0.546)*	-0.243 (0.455)	-0.071 (0.073)	0.138 (0.534)
<i>Underidentification tests</i>				
Angrist and Pischke χ^2 -statistic	(15.02)**	(15.02)**	(15.02)**	(15.02)**
Kleibergen-Paap rk <i>LM</i> -statistic	(14.45)**	(14.45)**	(14.45)**	(14.45)**
<i>Weak identification test</i>				
Kleibergen-Paap rk Wald <i>F</i> -statistic	(7.802)*	(7.802)*	(7.802)*	(7.802)*
Regional fixed effects	✓	✓	✓	✓
# Observations	182	182	182	182

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the regional level are in parentheses. The dependent variables are the fraction of those in the locality who support Vladimir Putin—(2), are planning to vote for United Russia—(1), Yabloko—(3), are not going to participate in the elections—(4). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is ‘Internet usage’. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” The specifications also include the 2007 parliamentary results (the fraction of votes for United Russia relative to the total number of registered voters and the voter turnout). The other controls are: ‘City dummy’, ‘Fifth-order polynomial of log(Population)’, ‘Fifth-order polynomial of Average income’, ‘Share of males’, ‘Average age and Average age²’, ‘Fraction of people with higher education.’ ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals). Statistics for underidentification tests and weak identification test are reported.

Table 21: Individual-level Results (OLS)

Variable	Dummy for the supporters of					
	United Russia			Putin		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Individual characteristics</i>						
Internet user	0.043 (0.006)***	-0.004 (0.007)	0.002 (0.007)	0.015 (0.006)***	-0.008 (0.007)	-0.008 (0.008)
Male		-0.154 (0.005)***	-0.152 (0.005)***		-0.100 (0.005)***	-0.100 (0.006)***
Age and Age ² (F-statistic)		✓ (185.5)***	✓ (153.0)***		✓ (89.42)***	✓ (84.49)***
Fifth-order polynomial of Income (F-statistic)		✓ (9.260)***	✓ (5.950)**		✓ (11.93)***	✓ (8.400)***
Higher education (at least unfinished)		-0.051 (0.008)***	-0.052 (0.008)***		-0.024 (0.007)***	-0.028 (0.008)***
<i>Locality characteristics</i>						
City dummy		-0.079 (0.010)***	-0.033 (0.018)*		-0.044 (0.010)***	-0.023 (0.018)
Fifth-order polynomial of log(Population) (F-statistic)			✓ (0.470)			✓ (0.900)
Regional fixed effects	✓	✓	✓	✓	✓	✓
# Observations	33,662	33,662	29,672	33,662	33,662	29,672

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the OLS regressions. Standard errors clustered at the locality level are in parentheses. The dependent variables are a dummy for whether a person is planning to vote for United Russia (specifications (1)–(3)) and a dummy for whether a person supports Vladimir Putin (specifications (4)–(6)). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of United Russia are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The main independent variable is a dummy ‘Internet user’. Internet users are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group.

Table 22: Individual-level First-stage

Variable	A dummy for Internet user		
	(1)	(2)	(3)
<i>Locality characteristics</i>			
Distance $\times 10^{-3}$	-4.519	-1.350	-0.652
	(0.507)***	(0.404)***	(0.476)
Distance ² $\times 10^{-6}$	38.78	9.746	5.036
	(6.000)***	(4.769)**	(5.308)
Distance ³ $\times 10^{-9}$	-79.91	-14.63	-4.974
	(14.52)***	(11.57)	(12.68)
Distance ⁴ $\times 10^{-12}$	61.11	6.689	-0.960
	(12.58)***	(10.10)	(10.94)
Distance ⁵ $\times 10^{-15}$	-15.59	-0.673	1.358
	(3.543)***	(2.869)	(3.079)
City dummy		0.076	0.040
		(0.008)***	(0.014)***
Fifth-order polynomial of log(Population)			✓
(F-statistic)			(0.970)
<i>Individual characteristics</i>			
Male		-0.008	-0.009
		(0.004)*	(0.005)*
Age and Age ²		✓	✓
(F-statistic)		(4483)***	(4545)***
Higher education dummy		0.240	0.237
		(0.006)***	(0.007)***
Fifth-order polynomial of Income		✓	✓
(F-statistic)		(147.0)***	(122.6)***
F-statistic for Distance, . . . , Distance ⁵	52.34***	74.64***	50.72***
Regional fixed effects	✓	✓	✓
# Observations	33,662	33,662	29,672

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The table reports estimates obtained from the first-stage OLS regressions. Standard errors clustered at the locality level are in parentheses. The dependent variables is 'Internet user'. Interner users are those who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" Variable 'Distance' is equal to the distance from the locality to the nearest backbone. 'City dummy' equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group.

Table 23: Individual-level Results (LIML)

Variable	Dummy for the supporters of					
	United Russia			Putin		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Individual characteristics</i>						
Internet user	-0.406 (0.144)***	-0.318 (0.493)	0.386 (0.344)	-0.289 (0.097)***	-0.393 (0.400)	-0.252 (0.582)
AR weak ID robust 5% confidence interval			[-0.77,-0.26]			[-2.53, 1.15]
Male		-0.156 (0.007)***	-0.148 (0.006)***		-0.103 (0.006)***	-0.102 (0.008)
Age and Age ² (Wald-statistic)		✓ (3.330)	✓ (3.950)		✓ (35.16)***	✓ (43.20)***
Fifth-order polynomial of Income (Wald-statistic)		✓ (0.000)	✓ (3.140)*		✓ (0.190)	✓ (0.010)
Higher education (at least unfinished)		0.025 (0.119)	-0.143 (0.082)*		0.069 (0.487)	0.030 (0.138)
<i>Locality characteristics</i>						
City dummy		-0.052 (0.044)	-0.050 (0.026)**		-0.011 (0.035)	-0.015 (0.032)
Fifth-order polynomial of log(Population) (Wald-statistic)			✓ (11.17)**			✓ (1.380)
<i>Underidentification tests</i>						
Angrist and Pischke χ^2 -statistic	(92.30)***	(23.04)***	(13.49)**	(92.30)***	(23.04)***	(13.49)**
Kleibergen-Paap rk LM-statistic	(68.08)***	(16.45)***	(7.728)	(68.08)***	(16.45)***	(7.728)
<i>Weak identification test</i>						
Kleibergen-Paap rk Wald F-statistic	(52.32)*	(71.64)*	(52.89)*	(52.32)*	(71.64)*	(52.89)*
Regional fixed effects	✓	✓	✓	✓	✓	✓
# Observations	33,662	33,662	29,672	33,662	33,662	29,672

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the locality level are in parentheses. The dependent variables are a dummy for whether a person is planning to vote for United Russia (specifications (1)–(3)) and a dummy for whether a person supports Vladimir Putin (specifications (4)–(6)). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of United Russia are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The main independent variable is a dummy ‘Internet user’. Internet users are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group. Statistics for underidentification tests and weak identification test are reported as well as weak ID robust Anderson-Rubin confidence sets.

Table 24: Additional Individual-level Results

	Dummy for the supporters of		
<i>Panel A</i>	(1)	(2)	(3)
Variable	Medvedev	KPRF	LDPR
Internet user	-0.599 (0.759)	-0.032 (0.139)	-0.155 (0.084)*
Regional fixed effects	✓	✓	✓
# Observations	29,672	29,672	29,672
<i>Panel B</i>	(4)	(5)	(6)
Variable	Patriots of Russia	Just Russia	Right Cause
Internet user	0.060 (0.065)	0.061 (0.149)	-0.005 (0.010)
Regional fixed effects	✓	✓	✓
# Observations	29,672	29,672	29,672
<i>Panel C</i>	(7)	(8)	(9)
Variable	Yabloko	“Spoil the ballot”	“Will not participate”
Internet user	0.098 (0.049)**	1.084 (20.89)	-0.141 (0.175)
Regional fixed effects	✓	✓	✓
# Observations	29,672	29,672	29,672

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the locality level are in parentheses. The dependent variables are a dummy for whether a person supports Dmitry Medvedev—(1), is planning to vote for KPRF—(2), LDPR—(3), Patriots of Russia—(4), Just Russia—(5), Right Cause—(6), Yabloko—(7), indicate her intention to spoil the ballot—(8), is not going to participate in the elections—(9). Supporters of Dmitry Medvedev are those who responded positively on the question: “Is President Medvedev good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is a dummy ‘Internet user’. Internet users are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” The other controls are: ‘City dummy’, ‘Fifth-order polynomial of log(Population)’, ‘Fifth-order polynomial of Income’, ‘Male’ (dummy for being a male), ‘Age and age²’, ‘Higher education’ (dummy). ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group.

Table 25: Individual-level Results for Different Groups

	Group			
<i>Panel A: United Russia</i>	(1)	(2)	(3)	(4)
Variable	Men	Women	Age < 30	Educated
Internet user	-0.018 (0.377)	0.554 (0.617)	-0.887 (0.765)	-0.789 (0.386)**
Regional fixed effects	✓	✓	✓	✓
# Observations	13,136	16,536	7,449	7,221
<i>Panel B: Putin</i>	(5)	(6)	(7)	(8)
Variable	Men	Women	Age < 30	Educated
Internet user	-0.282 (0.367)	0.424 (0.771)	-0.486 (1.567)	-0.825 (0.613)
Regional fixed effects	✓	✓	✓	✓
# Observations	13,136	16,536	7,449	7,221
<i>Panel C: Yabloko</i>	(9)	(10)	(11)	(12)
Variable	Men	Women	Age < 30	Educated
Internet user	-0.004 (0.040)	0.181 (0.071)**	0.028 (0.040)	-0.014 (0.053)
Regional fixed effects	✓	✓	✓	✓
# Observations	13,136	16,536	7,449	7,221
<i>Panel D: "will not participate"</i>	(13)	(14)	(15)	(16)
Variable	Men	Women	Age < 30	Educated
Internet user	0.085 (0.342)	-0.177 (0.104)*	0.602 (0.580)	0.119 (0.171)
Regional fixed effects	✓	✓	✓	✓
# Observations	13,136	16,536	7,449	7,221

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the locality level are in parentheses. The estimates are obtained for different groups (subsamples) of people: men ((1), (5), (9), (13)), women ((2), (6), (10), (14)), people under 30 years old ((4), (7), (11), (15)) and educated people ((4), (8), (12), (16)). The dependent variables are a dummy for whether a person supports Vladimir Putin ((5)–(8)), is planning to vote for United Russia ((1)–(4)), Yabloko ((9)–(12)), is not going to participate in the elections ((13)–(16)). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is a dummy ‘Internet user’. Internet users are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” The other controls are: ‘City dummy’, ‘Fifth-order polynomial of log(Population)’, ‘Fifth-order polynomial of Income’, ‘Male’ (dummy for being a male), ‘Age and age²’, ‘Higher education’ (dummy). ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group.

Table 26: Individual-level Results (Internet Measure 2)

Variable	Dummy for the supporters of			
	(1)	(2)	(3)	(4)
	United Russia	Putin	Yabloko	“Will not participate”
Internet user	0.548	-0.331	0.116	-0.210
	(0.434)	(0.862)	(0.048)**	(0.154)
Regional fixed effects	✓	✓	✓	✓
# Observations	29,672	29,672	29,672	29,672

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the locality level are in parentheses. The dependent variables are a dummy for whether a person supports Vladimir Putin—(2), is planning to vote for United Russia—(1), Yabloko—(3), is not going to participate in the elections—(4). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is a dummy ‘Internet user’. Internet users are those who use the Internet at home, at work or at place of study according to their answers to the question: “During the past six months, where did you use the Internet?” The other controls are: ‘City dummy’, ‘Fifth-order polynomial of log(Population)’, ‘Fifth-order polynomial of Income’, ‘Male’ (dummy for being a male), ‘Age and age²’, ‘Higher education’ (dummy). ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group.

Table 27: Individual-level Results (Bivariate Probit)

Variable	Probability of supporting				
	(1) United Russia	(2) United Russia (educated)	(3) Putin	(4) Yabloko	(5) “Will not participate”
Marginal effect	-0.046	-0.062	-0.007	0.001	-0.061
Controls	✓	✓	✓	✓	✓
Regional fixed effects	✓	✓	✓	✓	✓
# Observations	29,672	7,221	29,672	29,672	29,672

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The table reports estimates obtained from the bivariate probit regressions. Standard errors are clustered at the locality level. The marginal effects are calculated as differences in probabilities of choosing a particular option in the survey conditional on being an Internet user and being not an Internet user. The average marginal effects are calculated by averaging across individuals. The dependent variables are a dummy for whether a person supports Vladimir Putin—(2), is planning to vote for United Russia—(1), Yabloko—(3), is not going to participate in the elections—(4). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is a dummy ‘Internet user’. Internet users are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet usage is instrumented by a fifth-order polynomial of the distance to the nearest backbone. The other controls are: ‘City dummy’, ‘Fifth-order polynomial of $\log(\text{Population})$ ’, ‘Fifth-order polynomial of Income’, ‘Male’ (dummy for being a male), ‘Age and age²’, ‘Higher education’ (dummy). ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group.

Table 28: Individual-level Results (Number of Backbones as an Instrument)

Variable	Dummy for the supporters of			
	(1) United Russia	(2) Putin	(3) Yabloko	(4) “Will not participate”
Internet user	0.566 (0.788)	0.546 (0.792)	0.205 (0.140)	-0.095 (0.583)
AR weak ID robust 5% confidence interval	[-2.52, 3.65]	[-2.56, 3.65]	[0.12, 0.75]	[-2.38, 2.19]
<i>Underidentification tests</i>				
Angrist and Pischke χ^2 -statistic	(3.630)	(3.630)	(3.630)	(3.630)
Kleibergen-Paap rk <i>LM</i> -statistic	(3.452)*	(3.452)*	(3.452)*	(3.452)*
<i>Weak identification test</i>				
Kleibergen-Paap rk Wald <i>F</i> -statistic	(3.600)	(3.600)	(3.600)	(3.600)
Regional fixed effects	✓	✓	✓	✓
# Observations	29,672	29,672	29,672	29,672

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions for the subsample of individuals living in the localities which have at least one backbone passing through them. Standard errors clustered at the locality level are in parentheses. The dependent variables are a dummy for whether a person supports Vladimir Putin—(2), is planning to vote for United Russia—(1), Yabloko—(3), is not going to participate in the elections—(4). Supporters of Vladimir Putin are those who responded positively on the question: “Is Prime Minister Putin good or bad at doing his job? Has his work recently improved, worsened or not changed?” Voters of different parties are identified using the question: “Imagine that the next Sunday will be parliamentary elections. Which party would you vote for?” The available parties were: United Russia, KPRF, LDPR, Patriots of Russia, Right Cause, Just Russia and Yabloko. A person could also answer that she was not going to participate or choose the option: “Will spoil the ballot.” The main independent variable is a dummy ‘Internet user’. Internet users are those who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Internet usage is instrumented by a fifth-order polynomial of the distance to the nearest backbone. The other controls are: ‘City dummy’, ‘Fifth-order polynomial of log(Population)’, ‘Fifth-order polynomial of Income’, ‘Male’ (dummy for being a male), ‘Age and age²’, ‘Higher education’ (dummy). ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group. Statistics for underidentification tests and weak identification test are reported as well as weak ID robust Anderson-Rubin confidence sets.

Table 29: Locality-level Results for the Riots Data

Variable	log of the number of	
	(1) Participants via vk.com	(2) Participants in the protests
Internet usage	15.85 (5.32)***	6.468 (4.648)
<i>Underidentification tests</i>		
Angrist and Pischke χ^2 -statistic	(193.7)***	(66.68)***
Kleibergen-Paap rk <i>LM</i> -statistic	(4.321)	(4.821)
<i>Weak identification test</i>		
Kleibergen-Paap rk Wald <i>F</i> -statistic	(44.64)*	(136.46)*
Controls	✓	✓
# Observations	97	89

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1

The table reports estimates obtained from the instrumental variable LIML regressions. Standard errors clustered at the regional level are in parentheses. The dependent variable in (1) is the logarithm of the total number of people in the locality registered in `vkontakte.com` groups associated with the protests in Russia. The dependent variable in (2) is the logarithm of the total (approximate) number of people in the locality participated in the protests. The main independent variable is 'Internet usage'. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: "Have you ever used the Internet? If yes, when did you use it the last time?" The other controls are: 'City dummy', 'log(Population)', 'Average income', 'Share of males', 'Average age and Average age²', 'Fraction of people with higher education.' 'City dummy' equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals). Statistics for underidentification tests and weak identification test are reported.

Table 30: Locality-level Results for the Riots Data (Non-aggregated)

Variable	log of the number of protesters		
	(1)	(2)	(3)
Internet usage	-2.157 (2.215)	-6.420 (3.195)**	-16.97 (22.98)
Time trend			-0.021 (0.017)
Internet usage×Time trend			0.023 (0.034)
<i>Underidentification tests</i>			
Angrist and Pischke χ^2 -statistic		(67.43)***	
Kleibergen-Paap rk <i>LM</i> -statistic		(9.157)*	
<i>Weak identification test</i>			
Kleibergen-Paap rk Wald <i>F</i> -statistic		(13.68)*	
Controls	✓	✓	✓
Regional fixed effects	✓	✓	✓
Time fixed effects	✓	✓	
# Observations	295	295	295

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The table reports estimates obtained from the OLS ((1), (3)) and the instrumental variable LIML (2) regression. Standard errors clustered at the regional level are in parentheses. The dependent variable is the logarithm of the (approximate) number of people in the locality participated in the protests on a certain day. The main independent variable is ‘Internet usage’. It represents the share of those in the locality who used the Internet during the last week according to their answers to the question: “Have you ever used the Internet? If yes, when did you use it the last time?” Specifications (1) and (2) contain the whole set of dummies corresponding to different days on which the protests took place. Specification (3) instead includes the time trend and the interaction term between the trend and the Internet usage variable. The other controls are: ‘City dummy’, ‘Fifth-order polynomial of log(Population)’, ‘Fifth-order polynomial of Average income’, ‘Share of males’, ‘Average age and Average age²’, ‘Fraction of people with higher education.’ ‘City dummy’ equals 1 if the locality is not a village or a pgt. Higher education in the table means at least unfinished higher education. In the survey there is no precise value for income and only the income group is reported. Income variable is constructed as the average for a group (and than averaged across individuals). Statistics for underidentification tests and weak identification test are reported (specification (2)).