

The Impact of ICTs on Political Behavior

Explaining the Impact of Internet Voting and Voting Advice
Applications on Voters' Preferences, Choices and Turnout

Post-Doctoral Research Proposal
Submitted to Estonian Science Foundation

Kristjan Vassil*
Department of Social and Political Sciences
European University Institute
Florence, Italy
January, 2011

*kristjan.vassil@eui.eu

1 Purpose of the project

The purpose of this post-doctoral project is to explain the impact of information and communication technologies (ICTs) on political participation and electoral behavior. In particular, the effects of internet voting¹ and voting advice applications (VAA)² will be taken under scrutiny as the two most tangible technological applications directly linked to the very act of voting.³ The central research question of this project asks, what are the effects of internet voting and VAA usage on voter's preferences, vote choice and electoral turnout and under which conditions do these effects occur? It is an individual level analysis for which the case selection involves the case of Estonia, but more importantly it engages in comparative research of 27 European Union member states. The research builds upon empirical the findings from my doctoral dissertation.

2 Theoretical framework

Extensive international evidence suggests that citizens in contemporary western democracies are gradually becoming less involved in politics (Coleman, 1999; Huntington, 1996; Mair, 2005; Norris, 2003; Pharr and Putnam, 2000; Putnam, 2001). The tendency, labeled by many scholars as the crisis of democratic engagement, seems to be apparent in almost every democracy in the western world.

When the internet became a mass phenomenon in the mid nineties, many theorists suggested that if democracy was in trouble, then perhaps the internet could be of help. An ICT-based technological modernization of governmental institutions and participatory practices was perceived as an opportunity to increase political participation and the quality of democracies (Coleman, 1999; Fawkes and Gregory, 2001; McQuail, 2005; Street, 1997). After all, technology had played an important role in the past in shaping societal (Bijker, 2005) or political processes (Lacorne, 2007).

Internet voting was seen as one of the mechanisms that could remedy low turnout, however, the first experiences from Switzerland, the UK, the Netherlands and the US fell short of the expectations (Staeuber and Gasser, 2009; Loe-

¹The option to cast one's vote remotely over the internet without physically going to the polling station.

²Internet applications that allow voters to compare their issue preferences with those of the parties. Based on the issue congruence the program provides a *voting advice* that voters may take into consideration when casting their votes.

³I deliberately exclude from this research less tangible technologies related to the broader concept of online political participation (e.g., blogs, forums, electronic consultation and deliberation platforms, new media campaign tools, etc) because the link between the usage of these technologies and the voting act itself remains largely unobservable.

ber, 2008). After a few elections where internet voting was introduced aggregate turnout rates in these countries hardly changed. Less tangible internet applications like e-consultations, deliberation and discussion platforms and political blogs became popular only among the limited number of technology enthusiasts who tended to be already politically active, thereby leaving the apathetics untouched.

The explanation for this phenomenon is offered by theories of digital divide. It is argued, that online politics mirrors the patterns of inequality experienced in conventional politics and even increases the gap between the engaged and the disengaged (Alvarez and Nagler, 2000; Van Dijk, 2000, 2005; Margolis and Resnick, 2000; Putnam, 2001; Wilhelm, 2000). Online politics therefore tends to empower the wealthy and well educated and to further marginalize the underprivileged (Mossberger et al., 2003).

New evidence

Recently, however, scholars have raised doubts about the internet's inability to reach the disengaged and bring them closer to politics. Based on recent studies of internet voting and voting advice applications - the two most tangible forms of online political participation - sizable and consistent mobilization effects have been found. Alvarez, Hall and Trechsel (Alvarez et al., 2009) show that roughly one tenth of the internet voters in Estonia would not have turned out without the possibility to vote online. A mobilization effect of about the same magnitude among VAA users was found by Boogers (2006): One tenth of the users of Stemwijzer (the Dutch VAA) reported an increased motivation to cast their vote after obtaining the advice from the VAA. Kleinnijenhuis and van Hoof (2008) in their study of the usage of several Dutch VAAs observed that more people made a choice for a particular party after consulting with the VAA. Ladner et.al (2010) report that being affected by the VAA advice is positively associated with swing voting, which increases the chances that an individual will vote differently than intended as a consequence of VAA usage. Ruusuvirta & Rosema (2009) demonstrate that more than half of the undecided voters report a vote choice that is congruent with the vote advice. As far as the new data are concerned, both internet voting and VAAs have an impact on all of the three domains in which the effect may potentially occur - turnout, vote choice or preferences.

Although limited in cross-sectional and longitudinal terms, this evidence points toward mobilization effects that are far from negligible. An apparent question follows from here: Who is being mobilized and for what reason?

Mobilization effects

According to theory, if online politics has any effect on participation at all, it is likely to occur among young individuals with higher income, educational attainment, sense of political efficacy and positive attitudes toward politics in general (Mossberger et al., 2003; Norris, 2001) - that is, people with resources. Almost the same variables also predict political participation and thus, these people may indeed be more prone to make use of the new technology in political domain.

A number of studies have established that the usage of internet voting is indeed skewed toward younger citizens (Alvarez and Nagler, 2000; Kersting and Baldersheim, 2004; Solop, 2002). Emerging VAA studies tend to confirm the same pattern. After all, it is the young who are exposed to the new media to a far greater extent than the elderly, and it is evident that internet applications are most conveniently accessible to those already familiar with new technologies. These preconditions, combined with the fact that turnout has been generally low among young citizens (Franklin, 2004; Wattenberg, 2008), raise expectations that precisely the young will be mostly affected by online political applications (Alvarez et al., 2009; Kersting and Baldersheim, 2004; Norris, 2003).

It follows from theory then, that not only should internet voting and VAA usage be most probable among the young and affluent citizens, but the same group of people should be subject to mobilization effects. This mechanism implies that those using the online political applications are also experiencing some sort of mobilization effects (i.e., impact). In sum, theory suggest equating usage with impact. The conclusion from this exceedingly brief review of voting technologies literature is that technology only matters to the degree that it is available to its users.

Explicating the mechanism

This post-doctoral project seeks to build upon the standard theories but enhance the theoretical model in a substantially different dimension. First, initial empirical findings suggest that the mere usage of internet voting and the mobilization effect (impact) are both conceptually and empirically different (Vassil and Weber, 2009). There are no logical reasons to expect that *impact* is a concomitant effect of the *usage*. This mechanism implies that the difference between usage and impact is far from trivial. It yields the conceptual clarity required for testing the core hypothesis of the research: characteristics distinguishing the political periphery from the elite should decrease the probability of (both internet voting and VAA) usage but increase impact.

Second, no theoretical account insofar has explicitly addressed the problem of self-selection bias in studies of political behavior and their relationship with ICTs. Yet, this problem lies in the very heart of the usage practice itself and cannot be avoided on the grounds that it is a mere methodological problem. The very logic why impact occurs among some and not the others seems to be driven by the non-random event of the usage of ICTs in the first place.

These are the examples of the gaps in the theory for which the current research provides empirically informed theoretical elaborations. In the following, empirical part of the work will be outlined in detail.

3 Data and Research Questions

Since the first e-enabled elections in Estonia in 2005 an immense amount of survey data have been gathered in order to explain the impact of ICTs on political participation and electoral behavior.

Five consecutive Estonian e-voting surveys⁴ contain comparative data of individuals voting online, at the ballot booths and of those abstaining from voting; at least three representative surveys have measured the impact of internet voting on turnout. Two large survey experiments that contain panel data have been conducted in order to assess the causal impact of voting advice applications⁵ on electoral preferences and voter turnout. A Europe-wide large N representative survey has measured the usage of voting advice applications comparatively, including the case of Estonia. Comparative data on party positions and voters' policy preferences have been gathered by the largest European VAA in order to assess the representative deficit of European democracies by comparing the policy preferences of the supply and demand side of the political landscape. Similar study is about to be finalized exclusively for the March 2011 parliamentary elections in Estonia. A candidate study contains crucial information on how candidates within the parties related to the official party policies enabling the measurement of intra- and extra-party cohesion. The list of relevant surveys is not conclusive.

This is an impressive amount of empirical evidence by all standards. Yet, little research is carried out and published on these data and almost none when it comes to the relationship between ICTs and political behavior. Furthermore, almost no comparative efforts have been initiated in order to analyze these data jointly. This post-doctoral research project is designed to remedy these short-

⁴2005 local elections, 2007 national elections, 2009 EP elections, 2009 local elections and 2011 national elections.

⁵Such as www.euprofiler.eu and www.valijakompass.ee

comings. More specifically, by employing this vast resource of under investigated empirical survey data this post-doctoral project addresses the following research questions.

1. Why does internet voting fail to boost turnout? Refining the Bottleneck model⁶ of technological impact on electoral turnout by comparing five consecutive e-enabled elections since 2005 in Estonia with those of Switzerland (6 cross sectional surveys with an overall N of 7 000).
2. What are the effects of internet voting on political representation? Challenging the myth of political neutrality of internet voting (5 cross sectional surveys with an overall N of 5 000).
3. Who are the users of voting advice applications? Predicting the usage of VAAs on the basis of a comparative study of 27 European countries (Comparative survey with an overall N of 27 000).
4. What is the effect of voting advice applications on individual turnout and vote choice? Detecting causality and selection bias on the basis of two survey experiments in Estonia and panel studies in the Netherlands and Switzerland - an instrumental variable approach (Panels with an overall N of 6 000).
5. Why parties hardly overlap with voters? Estimating democratic deficit by comparing issue preferences of voters and political parties across EU 27 and Estonia (Panel with an overall N of 15 000).

These questions address fundamental questions of representative democracy, political participation and electoral behavior - all of which, have direct implications with regard to policy and political science.

4 Method

This project relies on applied econometric analysis of already gathered survey data. More specifically, since the nature of the survey data often constrain the reliability and validity of self-reported measures (e.g., sample selection biases, misreporting) or requires techniques that account for specific aspects of the data

⁶A Bottleneck model states that e-voting mostly affects 'peripheral' citizens, but only few of these citizens vote online in the first place. Conversely, the impact on typical e-voters is low. (Vassil and Weber, 2009).

(e.g., hierarchical structure) there is a substantiated need to go beyond the traditional framework of the 'common toolbox' of quantitative data analysis (i.e., descriptive statistics, ordinary least squares, or categorical probit/logit models).

In particular, the problems related to sample self-selection biases will be dealt with simultaneous equation modeling, e.g., Heckman selection model (Heckman, 1979). In order to correct for misreporting of self-assessed behavioral and attitudinal survey components panel data will be used and analyzed using fixed and random effects panel models (Finkel, 1995). In experimental research designs where the selection into treatment is non-random and respondents' non-perfect compliance gives rise to the bias in parameter estimates, the aim is to use instrumental variable approach where the problematic endogenous 'treatment' variable is instrumented by a more reliable and exogenous 'instrumental' variable (Angrist and Pischke, 2009). For questions in which the data comprises hierarchical structures (e.g., within and between country variation in comparative research designs) multilevel modeling will be employed (Rabe-Hesketh and Skrondal, 2008).

In so doing this project will intentionally not be kept sophisticated in technical terms. Quite the contrary, irrespective of the methodological technique employed all inferences are translated into meaningful quantities of interest (King et al., 2000) that are easily interpretable by also technically less advanced readers. In order to achieve this, data analysis will be performed with STATA 11 involving a number of user-written analysis packages (Tomz et al., 2003; Bartus, 2005; Long and Freese, 2001).

Note, that the proposal contains no section on *research design* with regard to *data collection*. It is so, because the project is not intended to engage in yet another data collection enterprise for the data come already in abundance.

5 Deliverables

The main scientific outcome of this post-doctoral project are at least three single-authored articles that will be written on the basis of these research questions and submitted to the peer-reviewed journals in the field of political science. At least one of the papers will be presented in one of the annual conferences of either European Consortium for Political Research, American Political Science Association or Mid-West Political Science Association.

A second patch of deliverables extends beyond the immediate research interest of this project. A preliminary agreement has been reached with some of the six academic or non-governmental institutions that hold the property rights for

the data described above to release the data for public use. Although it cannot be guaranteed, the aim is to publish these data in a data sharing environment Dataverse (King, 2007) enabling a wider researchers' community to access and employ the data in their empirical analyses. The benefits of this type of data sharing are immense - it would allow better information sharing among the partnering institutions yielding more synchronicity and less overlapping repetition in future data collection endeavors; undergraduate students would gain access to better collection of data expanding their research opportunities and increasing the skills of quantitative data analysis; open documentation and possibly compatible datasets may open a whole new research agendas. On a more broader instance, this work would directly feed into the formation of Estonian Consortium of Electoral Research for which the institutional members have already expressed their interest.

6 Institutional hosting

The proposed research project fits ideally within the Targeting Financing project "Types of Democratic Representation in Post-Communist Democracies"⁷, since it concerns the notion of representation, but as examined within the context of ICT change. Likewise, the two projects have an ideal match, since the post-doctoral applicant proposes to study in greater depth the public opinion surveys carried out as part of the Targeted Financing project. He will bring considerable value-added to the data analysis currently being carried out.

Lastly, the applicant has a long-standing relationship with the proposed project supervisor, Prof. Vello Pettai. The two met three years ago during a seminar at the European University Institute, and have since maintained contact throughout the applicant's remaining doctoral study. This is an optimal combination of an Estonian doctoral study returning to Estonia to continue with high-level post-doctoral research.

⁷Project nr. SF0180128s08, Principal Investigator Andres Kasekamp

References

- Alvarez, R., Hall, T., and Trechsel, A. (2009). Internet Voting in Comparative Perspective: The Case of Estonia. *PS: Political Science and Politics*, 42(03):497–505.
- Alvarez, R. and Nagler, J. (2000). Likely Consequences of Internet Voting for Political Representation, The. *Loy. LAL Rev.*, 34:1115.
- Angrist, J. and Pischke, J. (2009). *Mostly harmless econometrics: an empiricist's companion*. Princeton Univ Pr.
- Bartus, T. (2005). Estimation of marginal effects using margef. *The Stata Journal*, 5(3):309–329.
- Bijker, W. (2005). Why and how technology matters. In Goodin, R. and Tilly, C., editors, *The Oxford Handbook of Contextual Political Analysis*. Oxford Univ Press.
- Boogers, M. (2006). Enquête bezoekers Stembijz. *Universiteit van Tilburg*.
- Coleman, S. (1999). The new media and democratic politics. *New media & society*, 1(1):67.
- Fawkes, J. and Gregory, A. (2001). Applying communication theories to the Internet. *Journal of Communication Management*, 5(2):109–124.
- Finkel, S. (1995). *Causal analysis with panel data*. SAGE Publications, Inc.
- Franklin, M. (2004). *Voter turnout and the dynamics of electoral competition in established democracies since 1945*. Cambridge Univ Pr.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica: Journal of the econometric society*, 47(1):153–161.
- Huntington, S. (1996). *The Clash of Civilizations and the Remaking of World Order*. New York.
- Kersting, N. and Baldersheim, H. (2004). *Electronic voting and democracy: a comparative analysis*. Palgrave MacMillan.
- King, G. (2007). An introduction to the Dataverse Network as an infrastructure for data sharing. *Sociological Methods & Research*, 36(2):173.
- King, G., Tomz, M., and Wittenberg, J. (2000). Making the most of statistical analyses: Improving interpretation and presentation. *American Journal of Political Science*, 44(2):347–361.

- Kleinnijenhuis, J. and van Hoof, A. (2008). The influence of internet consultants. In *Conference 'Voting Advice Applications (VAAs): between charlatanism and political science', May 16, 2008, Antwerp (Belgium)*.
- Lacorne, D. (2007). Chad Wars. Voting Machines and Democracy in the United States. In Bertrand, R., Briquet, J., and Pels, P., editors, *Cultures of voting: the hidden history of the secret ballot*. Hurst & Co.
- Ladner, A., Fivaz, J., and Pianzola, J. (2010). Impact of voting advice applications on voters' decision-making. In *Paper to be presented at the Conference "Internet, Politics, Policy 2010: An Impact Assessment" September 16-17 at the Oxford Internet Institute (OII), University of Oxford*.
- Loeber, L. (2008). E-voting in the Netherlands: from general acceptance to general doubt in two years. In *3rd International Workshop on Electronic Voting, Lecture Notes in Informatics*, pages 21–30.
- Long, J. and Freese, J. (2001). *Regression models for categorical dependent variables using Stata*. Stata press College Station, TX.
- Mair, P. (2005). Democracy beyond parties. *Center for the Study of Democracy*.
- Margolis, M. and Resnick, D. (2000). *Politics as usual: the cyberspace" revolution"*. Sage Publications, Inc.
- McQuail, D. (2005). *McQuail's mass communication theory*. Sage.
- Mossberger, K., Tolbert, C., and Stansbury, M. (2003). *Virtual inequality: Beyond the digital divide*. Georgetown Univ Press.
- Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the Internet worldwide*. Cambridge Univ Press.
- Norris, P. (2003). Will New Technology Boost Turnout? Evaluating Experiments in E-Voting v. All-Postal Voting Facilities in UK Local Elections. *Working Paper Series*.
- Pharr, S. and Putnam, R. (2000). *Disaffected democracies: what's troubling the trilateral countries?* Princeton Univ Press.
- Putnam, R. (2001). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.
- Rabe-Hesketh, S. and Skrondal, A. (2008). *Multilevel and longitudinal modeling using Stata*. Stata Corp.

- Ruusuvirta, O. and Rosema, M. (2009). Do online vote selectors influence electoral participation and the direction of the vote? In *ECPR General Conference, September*, pages 13–12.
- Solop, F. (2002). Digital democracy comes of age: Internet voting and the 2000 Arizona Democratic primary election. *PS: Political Science and Politics*, 34(02):289–293.
- Staeuber, R. and Gasser, U. (2009). Three case studies from switzerland: Politicians' personal communication on the internet. *Berkman Center Research Publication No. 2009-03.2*.
- Street, J. (1997). Remote Control? Politics, Technology and 'Electronic Democracy'. *European Journal of Communication*, 12(1):27.
- Tomz, M., Wittenberg, J., and King, G. (2003). CLARIFY: Software for interpreting and presenting statistical results.
- Van Dijk, J. (2000). Widening information gaps and policies of prevention. *Digital democracy: Issues of theory and practice*, pages 166–183.
- Van Dijk, J. (2005). *The deepening divide: Inequality in the information society*. Sage Publications, Inc.
- Vassil, K. and Weber, T. (2009). A bottleneck model of e-voting. why technology fails to boost turnout. In *Annual Meeting of American Political Science Association in Toronto*.
- Wattenberg, M. (2008). *Is voting for young people?: with a postscript on citizen engagement*. Pearson Longman.
- Wilhelm, A. (2000). *Democracy in the digital age: Challenges to political life in cyberspace*. Routledge.