From Piloting to Roll-out: Voting Experience and Trust in the First Full e-election in Argentina

Julia Pomares
Political Institutions Program
Center for the Implementation of Public Policies Promoting Equity and Growth
Buenos Aires, Argentina
jpomares@cippec.org

Ines Levin
Department of Political Science
University of Georgia
Athens, United States

R. Michael Alvarez
Division of the Humanities and Social Sciences
California Institute of Technology
Pasadena, United States

Guillermo Lopez Mirau
Under-Secretariat for Planning of the Government of the province of Salta
Salta, Argentina

Teresa Ovejero
Electoral Secretariat
Electoral Tribunal of the province of Salta
Salta, Argentina

Abstract— **Despite the conventional wisdom that e-voting would take place first in established democracies and later in developing countries, the speed of implementation has been higher in the developing world, especially in Latin America, with several countries such as Brazil, Venezuela, Argentina and Ecuador implementing e-voting methods. This paper looks at the experience of Salta, the first Argentine district rolling out e-voting for the entire electorate in 2013. Based on a survey of 1,000 voters in the 2013 provincial elections, the voter's experience and confidence in the election process is analyzed. Among the key findings, there is a strong effect of a voter's ability to use the voting machine without assistance on the overall support for e-voting and positive perceptions of integrity in the election process. These results have both theoretical and policy implications.**

Keywords— e-voting; confidence; usability; Latin America; Argentina

I. INTRODUCTION

In the 2013 elections, Salta became the first province in Argentina to implement an e-voting system for the entire electorate (about 900,000 voters). The system was used to select provincial candidates – there are compulsory primaries for voters and parties[1] – and to elect provincial legislators and council members in the municipalities throughout the province. The election took place amidst a wave of change in voting procedures at the provincial level in Argentina [1] [2] [3] [4]. Although national elections are still conducted using the ballot and envelope system (also called French system by which each party is responsible for printing and disseminating ballots), several provinces including some of the most populated ones – the autonomous City of Buenos Aires, Santa Fe, and Cordoba – have changed legislation to introduce new voting procedures. Against this background, lessons learnt from Salta – one of the few districts[2] of the country with an important proportion of indigenous people[3] – are key to informing other provinces as well as other countries in the region seeking to implement e-voting systems. For example, Ecuador has piloted the same system used in Salta in the 2014 local elections.[4]

Based on a survey of 1,000 voters conducted on Election Day (November 10, 2013), this paper analyzes two central aspects of voters' attitudes toward the voting system:

---

[1] Since 2009, all legislative and executive candidates must be nominated through primaries. Parties must hold primary elections, even if there is no internal competition. Candidates need to get 1.5% of votes in the primaries in order to get to the general stage. Participation in primaries (and general elections) is compulsory.

[2] Each of the 24 provinces serves as an electoral district for the national Senate and chamber of deputies.

[3] According to the last National Census (2010), 2.7% of Argentine population are indigenous. The highest proportions are to be found in four provinces, including Salta (8% of the population).

[4] See Consejo Nacional Electoral, "Simulacros de voto electrónico probarán eficacia del sistema," http://www.cne.gob.ec/index.php/ Boletines-de-prensa/Articulos/simulacros-de-voto-electronico-probaran-eficacia-del-sistema.html.

perceptions and opinions about the voting experience, with a special focus on the use of the voting machine, and perceptions about the integrity of the electoral process. The paper is structured as follows. Section 2 presents our motivation for the analysis of these attitudes and the questions of the survey. Section 3 goes into detail about how e-voting is being implemented in Argentina and the context of the 2013 election under analysis. Section 4 presents the data and results of a statistical analysis of the determinants of voting experience and confidence in the integrity of the electoral process. Section 5 concludes by focusing on the policy implications of the key findings.

II. WHY FOCUS ON VOTERS' EXPERIENCES AND PERCEPTIONS OF ELECTORAL INTEGRITY?

Our interest in the voting experience is justified by the fact that voting technologies frame the voting experience in direct and indirect ways. Directly, the voting experience might affect the degree of satisfaction that people draw from that experience and opinions about the change in voting procedures. Indirectly, it might influence opinions about the transparency and integrity of elections. Also, in the context of a very diverse population, we are interested in understanding the socio-demographic determinants of evaluations of the voting system. Do differences in age and education affect voter evaluations? Does living in the urban Capital affect perceptions of ease of use and overall assessments of the new voting system? In order to answer these questions, we look at perceptions of usability and speed of the voting procedure, opinions about ease of use of different interactions with the voting machine (inserting the ballot, operating the touchscreen device and finding the candidates), as well as overall evaluations of the new voting system.

Second, we focus on confidence in elections for both theoretical and policy reasons. On the one hand, an increasing body of literature looks at trust in voting technologies in both established [5] [6] [7] [8] and developing democracies [9] [10] [11]; [12]; [13] [14]. Whereas quantitative analyses follow an inductive approach and test whether individual- or institutional-level variables shape perceptions of trust, qualitative accounts look at the *socio-cultural aspects* of the election process that are shaped by voting procedures [15]. Following previous research of the authors [1] [4], this paper places key importance on breaking down the concept of confidence into different dimensions, differentiating between perceptions of accuracy and secrecy.

At the same time, studies of trust in elections also have important policy implications. The increasing interest in e-voting technologies in developing countries is usually associated with trying to building confidence in the fairness of the electoral process. Studies of elections in Latin America [1] [16], as well as comparative studies [17], show that the focus on boosting perceptions of trust in electoral processes is an important driver of the move toward electronic voting technologies. Against this background, the Salta election is of key policy relevance since this first full implementation of e-voting might shed light on the potential

consequences of introducing e-voting in other developing countries, many of which are already testing and deploying new voting procedures (such as Mexico, Ecuador and Peru).

Three questions on confidence in the election were asked. First, we distinguished between two specific dimensions of confidence in the election process: confidence that a vote will be counted as intended and confidence that the ballot will be kept secret. Whereas the former assesses perceptions of accuracy of the voting system and fairness of the counting procedure, the latter captures the ability to preclude violations of privacy and voter intimidation. Additionally, we looked at broader perceptions of the cleanness of the election.

III. E-VOTING IN ARGENTINA

The voting system traditionally used throughout the country in Argentina is the French system of ballot and envelope. Typically, a paper ballot contains party-specific candidates for multiple races that take place on the same day – which might include candidates to the presidency, national deputies, governor, provincial deputies, mayor, and local councils – and dotted lines indicate to voters how to split their vote across down-ticket races. On Election Day, voters vote in private (i.e. behind closed doors) inside a room denominated "*cuarto oscuro*" where party-specific paper ballots are displayed on several tables. Once inside the room and on their own, voters select their favorite candidates for each race – they can split their vote by picking parts of party-specific ballots, or they can vote straight-ticket by picking an unbroken party-specific ballot – and place their choices inside an envelope that they subsequently insert into a ballot box located outside the "*cuarto oscuro*."

Another important feature of the traditional voting system is that each party is responsible for printing the ballots, as used to be case in the first applications of the French system in the United States.[5] This means that once ballots are displayed in voting booths, parties are responsible for guaranteeing their supply throughout Election Day. This was not a problem under the historic two-party system in Argentina, but has increasingly come into question with the rise in political fragmentation since 1999. On the occasion of the 2007 national legislative elections, for instance, there were several claims of ballot manipulation in the province of Buenos Aires, the largest district of the country. As a consequence, the National Electoral Chamber – the highest electoral court – called for changes to the voting procedure to guarantee that all electoral options are made available to voters.

In recent years, several provinces have introduced reforms to their electoral processes, including the adoption of e-voting and of different types of the Australian ballot.[6] Salta, a province located in the northwestern part of the

---

[5] For a detailed analysis of the implementation of the Australian ballot in American elections, see [18].
[6] By Australian ballot, we refer to the system in which all parties are on the same official ballot, provided by the electoral authority and the voter marks her option.

country with electoral roll of about 900,000 voters, became the first province to introduce an e-voting system for general provincial elections in 2009. E-voting machines used in Salta allow voters to select candidates electronically using a touchscreen, and subsequently print choices on paper ballots that voters deposit in a ballot box. At the close of the polls, the voting machines turn into tallying machines that poll workers use to count votes. Under this new system, the relatively private act of selecting electoral options behind doors inside a "*cuarto oscuro*" is replaced with a much more public act, using a machine within sight of other voters. Although voting machines are placed inside the polling place using a layout that seeks to preserve voter privacy, the abandonment of the "*cuarto oscuro*" might induce negative perceptions of vote secrecy [3] [4].[7]

The electronic voting system was first tested in 2009 during the primaries of the Peronist party at selected polling stations in the capital of the province and suburbs. In 2011, the e-voting system was used during the primary and general elections, when the roll-out was extended to 33 per cent of the province's electoral roll. The gradual implementation of e-voting in Salta allowed researchers to learn about the impact of e-voting by comparing the voting experiences of first-time e-voters and voters who continued using the traditional voting system [3] [4]. Although the government plan was to implement the e-voting system in two more subsequent stages (66 per cent of voters in 2013 and full roll out in 2015), the provincial Executive decided to fully implement the electronic system in 2013, extending it to the entire electoral roll. In this paper, we study the impact of voting experiences on attitudes toward the e-voting system among first- and second-time e-voters, using data from a voters' survey conducted during the 2013 general election in Salta.

In 2013, the e-voting system was implemented for the whole electorate (892,000 voters in 2700 polling tables) first for compulsory open primaries (6 October) and several weeks later (10 November) for the general provincial elections. Some comments about the political context of the election are necessary. A very negative electoral campaign took place in this midterm election and the incumbents did not perform well. Whereas the governor got reelected in 2011 with 60 per cent of the votes (when e-voting was piloted for one third of the electorate), his legislative candidates got only 20 per cent of the votes in the 2013 contest. Also, it is important to add that the main opposition to the governor throughout the province came from a faction of the incumbent Peronist Party. Although these political leaders supported the change in voting procedures in 2011, they strongly opposed it in 2013. Moreover, the debate about the roll out of the e-voting system played a key role in the electoral campaign. The main provincial newspaper (*El Tribuno*) dedicated the front pages of the paper in the last week of the election to the prospect of e-voting machines functioning properly on Election Day. It was a very competitive election, especially in the Capital City. For the

first time in their history, the Workers' Party (of left-wing ideology) got the first place in the election in the Capital of the province with 27 per cent of the votes.

In order to grasp the perceptions of voters and poll workers about the e-voting system, the Electoral Tribunal (part of the Judiciary), the Executive government and the Buenos Aires-based think tank CIPPEC designed and conducted a survey of 1,000 voters and 185 poll workers. Both surveys were administered on Election Day. This paper presents the results of the voters' survey, focusing on two central issues: the voting experience, and different dimensions of voter's confidence in the election process and evaluations of the voting system.

A stratified sample of 24 schools (polling stations) throughout the province was created. In all, nine municipalities were selected including the provincial Capital (concentrating 60 per cent of the provincial electorate and where most e-voting piloting took place in 2011). A team of two pollsters was assigned to each polling station. Each pollster was expected to administer at least 20 voter surveys. They were told to randomly recruit voters on their way out of the polling tables. In order to ensure a uniform socio-demographic distribution of the sample, half of their surveys had to be administered to men and they also had to follow age quotas. We present findings from the data in the next section.

IV. Voting Experience and Perpceptions of Integrity during the 2013 Elections

A. A first look at the data

When asked about perceptions of ease of use and speed of the voting system, we find very positive responses among Salta voters: 9 out of 10 voters said that voting was *very* or *somewhat* easy, and 8 out of 10 said that voting was *fast* or *very fast* (Table I). Voter opinions are also overwhelmingly positive when surveyed about the ease of interacting wit different features of the voting machine: approximately 9 out of 10 said instructions were easy to understand, and a similar number said that inserting the ballot into the machine, using the touchscreen and finding the voting option was easy (Table I). Also, voters reported very positive opinions about the qualification of poll workers: 72 per cent said that they were *very* or *somewhat* qualified to exercise their roles.

TABLE I: Perceptions of Ease of Use and Speed of Voting Procedure

Ease of Use and Speed of Voting Procedure	%
Voting was easy	88.7
Voting was fast	80.3
Machine Ease of Use	%
Instructions were easy to understand	92.3
Inserting the e-voting ballot was easy	87.5
Using the touchscreen was easy	91.3
Finding the voting option was easy	88.8

Note: summary statistics were computed excluding non-responses (N=981).

---

[7] Interested readers can find more description of these voting systems, and photographs of the voting devices in [3] [4].

Despite these positive evaluations of the voting experience, 1 out of 5 voters said that they experienced a problem while voting and 13 per cent of voters needed help in order to be able to cast a ballot (Table II). There are significant differences by age and education. The proportion of voters needing help doubles among least educated voters: 27 per cent of those with no formal education or only primary education needed assistance. Also, voters older than 50 years experienced more difficulties: 23 per cent of them reported having asked for help. Demanding assistance to understand the voting system is an important consideration because if poll workers are unable to help voters and preserve privacy at the same time, the secrecy of the ballot might be called into question.

TABLE II: Responses to questions about Voting Experience

Other Aspects of Voting Experience	%
Experienced a problem while voting	19.0
Thinks electoral authorities were qualified	72.2
Needed help while voting	13.1
Voter chose to split his/her ticket	34.4

Note: summary statistics were computed excluding non-responses (N=981).

Interesting insights also come out of questions inquiring about general evaluations of the system: an overwhelming majority evaluates the system in positive terms. When asked "in broad terms, how would you evaluate the voting system used today," 8 out of 10 voters said *very good* or *good*. Despite these positive opinions, a majority of voters (53 per cent) said that they would like to switch back to the traditional paper ballot system.

TABLE III: General Evaluations of the System and Voter confidence

General Evaluation of e-voting System	%
Evaluated system in positive terms	82.0
Prefers the traditional voting system	53.2
Confidence in the Election Process	%
Confident vote was correctly recorded	75.5
Confident in ballot secrecy	57.6
Believe elections in Salta are clean	35.0

Note: summary statistics were computed excluding non-responses (N=981).

Similar to previous findings on the 2011 elections, we find support for the hypothesis that perceptions of accuracy and secrecy operate differently: whereas there are high levels of trust in the ability of the system to correctly record the preferences of voters, with 75 per cent of voters reporting positive responses, voters seem more hesitant about ballot secrecy, with only 58 per cent reporting positive responses (Table III). The third question on perceptions of cleanness of the election got quite negative results: only 35 per cent of voters believe elections in Salta are clean. It is important to keep in mind that this question might capture a broader discontent with political parties and disaffection and not exclusively opinions about the voting system.

B. Statistical analysis

In order to gain a deeper understanding of the determinants of voter evaluations of the voting experience and confidence in the electoral process, we estimated a series of logistic regressions for a set of outcome variables related to: (a) voters' evaluations of ease of use and speed of the voting system; and (b) voters' confidence that their vote was recorded correctly and that ballot secrecy was preserved, together with general evaluations of the cleanness of elections in Salta. We included a set of control variables: encountering a problem while voting; perceptions of qualification of poll workers; having needed help while voting; having used the e-voting system in a previous election; whether the voter split his/her ticket; living in the Capital of Salta; age; gender; political information;[8] technology use; belief that technology simplifies life; and education.[9]

Tables IV through VII present estimates of marginal effects (i.e. changes in predicted probabilities that the binary dependent variable takes value one as a result of marginal changes in explanatory variables) and 95% confidence intervals. Results are presented in different tables based on the type of outcome variable: general evaluations of ease of use and speed of voting procedure (Table IV); ease of use of different features of the e-voting system (Table V); general evaluations of the e-voting system and preference for the previous ballot and envelope system – referred to here as "traditional voting" (Table VI); and, finally, voters' confidence in their vote being counted as intended, in ballot secrecy, and perceptions of the cleanness of elections in Salta (Table VII).

Looking at the determinants of perceptions of ease of use and speed of the voting procedure, we find a clear influence of asking for help and encountering a problem while voting, in the expected direction: asking for assistance reduces the probability of positively evaluating ease of voting by 13 percentage points. Also, encountering a problem reduces the probability of saying that voting was fast by 14.5 percentage points. Having used e-voting in the past also increases the probability of saying that voting was fast by 6 percentage points. An influence of age is also evidenced in these results: voters older than 49 years have a 3-point higher probability of saying that voting was easy. Interestingly, there is no effect of educational attainment on these perceptions (Table IV). At the same time, a strong belief in the benefits of technology (that is, strongly agreeing that technology makes life simpler) also increases the probability of holding positive perceptions of ease of use. Finally, more favorable evaluations of poll worker qualifications also have a positive influence on opinions about ease of use and speed of the voting procedure.

---

[8] Political information was computed as the number of correct answers among three questions measuring knowledge of persons holding salient positions in national and provincial governments.
[9] Missing values in dependent and explanatory variables were imputed using the R package *mice* [19] before estimating the regression models.

The two most direct measures of usability (encountering a problem while voting and asking for help) have considerable effects on saying that diverse actions were easily performed (Table V), including understanding instructions, inserting the ballot in the voting machine, using the touchscreen, and finding the preferred electoral option. For instance, asking for help reduces the probability of saying that inserting the ballot into the machine was easy by 20 percentage points. It is important to bear in mind that several problems had taken place during the voting process in the primary election conducted in October.[10]

Although it might be expected that experiences such as encountering a problem while voting and needing to ask for help influence perceptions of usability, it is less clear that they might affect overall evaluations of the system. We find, however, strong evidence that this is the case: asking for help increases by 15 percentage points the probability of preferring a return to the traditional means of voting with paper ballots. Perhaps not so surprisingly, those more likely to use technology in their everyday lives are less likely to prefer the old method of voting (Table VI). Voter evaluations of poll worker qualifications are also drivers of support for returning to the previous voting system. These results point to the importance of voting experience and usability issues for general evaluations of the e-voting system.

Finally, important findings can be drawn from the analysis of the determinants of confidence in the electoral process (Table VII). In line with results found for overall evaluations of the voting system, encountering a problem while voting is an important driver of negative perceptions of ballot secrecy (although not of perceptions of accuracy of the voting system). Quite remarkably, perceptions of qualification of poll workers are a strong determinant of voters' confidence in the integrity of the electoral process (favorable evaluations lead to 16.6 and 23.3 percentage point increases in perceptions of accuracy and secrecy of the voting process, respectively). Not only do these evaluations have an influence on specific dimensions of confidence in the voting process (accuracy and secrecy) but also exert considerable impact on thinking that elections in Salta are clean (a 22.1 percentage point increase). Also, after controlling for other factors, neither age, education, nor gender influence perceptions of confidence in the integrity of the electoral process. Only one demographic attribute exerts a statistically significant influence on voter confidence: living in the Capital vis-à-vis the interior of the province. Those living in the most urban areas are less likely to hold positive opinions on the secrecy of the ballot and are also less likely to believe that elections in Salta are clean. Lastly, the fact that those with more political information hold more negative opinions might indicate that negative reports about e-voting in the news media negatively influenced voters' perceptions.

V. CONCLUDING REMARKS

This paper has analyzed survey data from an important implementation of e-voting in Salta, Argentina. The primary focus has been on voter evaluations of the usability of the electronic voting system, and voter confidence in the electoral process. Since one of the main reasons for the move toward to electronic voting systems in Latin America is to improve voter perceptions of the integrity of the electoral process, it is important to evaluate voter reactions to these new means of ballot marking, casting and tabulation.

We find important results. In particular, we can conclude that voter confidence is associated with both the usability of the voting system and with the qualifications of those who assist voters when they have trouble with the system – poll workers. Both of these results shed light on dimensions of voter confidence that have not been well studied so far in the literature. Future research on evaluating new voting systems, and on voter confidence, needs to pay more attention to contextual determinants of confidence in the voting system and its integrity.

Finally, this paper has significant policy ramifications for nations in Latin America considering the adoption of new voting technologies. On one hand, the implementation of new voting systems – if accomplished with secure and usable voting technologies – may be able to improve voter confidence in the integrity of a nation's electoral process. New voting technologies, if well designed to address existing concerns with the traditional voting process, can help mitigate previous apprehensions. On the other hand, it is also seems clear that new voting systems can raise other concerns, for example, regarding voter privacy. Additionally, results discussed in this paper point to the importance of poll worker training: their job has key implications for voters' evaluations of the new system. It is only by adopting a scientific program evaluation – like that used in the recent implementations of e-voting in Salta – that the effects of adopting a new voting system can be measured and assessed.

---

[10] In the context of the primary elections, the media reported numerous cases of machines with problems reading ballots. According to informal talks with the provider, these problems were largely reduced for the general elections.

REFERENCES

[1] Alvarez, R. Michael, Ines Levin, Julia Pomares and Marcelo Leiras.. Voting Made Safe and Easy: The Impact of e-voting on Citizen Perceptions. Political Science Research and Methods 1(1), 2013, pp. 117-137.

[2] Katz, Gabriel, R. Michael Alvarez, Ernesto Calvo, Marcelo Escolar, and Julia Pomares. Assessing the Impact of Alternative Voting Technologies on Multi-Party Elections: Design Features, Heuristic Processing and Voter Choice. Political Behavior 33(2), 2011, pp. 247-270.

[3] Lopez Mirau, Guillermo, Teresa Ovejero, Julia Pomares. The Implementation of E-voting in Latin America: The Experience of Salta, Argentina from a Practitioner´s Perspective. Proceedings of the 5th International Conference on Electronic Voting 2012, Kripp, M.; Volkamer, M.; Grimm, R., Eds. Bregenz, Austria, July 2012.

[4] Pomares, Julia, Ines Levin, and R. Michael Alvarez. Do Voters and Poll Workers Differ in their Attitudes Toward e-voting? Evidence From the First e-election in Salta, Argentina. USENIX Journal of Election Technology and Systems 2(2), 2014, pp. 1-10.

[5] Alvarez, R. Michael, Thad E. Hall, and Morgan H. Llewellyn. 2008. Are Americans Confident their Ballots are Counted? Journal of Politics 70(3):754–66.

[6] Delwit, Pascal, Erol Kulahci, and Jean-Benoit Pilet. 2005. Electronic Voting in Belgium: A Legitimized Choice? Politics 25(3):153–64.

[7] Stewart III, Charles. Election Technology and the Voting Experience in 2008. Caltech/MIT Voting Technology Project Working Paper #71, http://www.vote.caltech.edu/sites/default/ files/ElectionTechnology_CStewart_033109.pdf. 2009.

[8] Atkeson, Lonna Rae and Kyle L. Saunders. The Effect of Election Administration on Voter Confidence: A Local Matter? PS: Political Scince & Politics 40(4): 2007, pp. 655-660.

[9] Alvarez, R. Michael, Gabriel Katz, Ricardo Llamosa, Hugo E. Martinez.. Assessing Voters' Attitudes towards Electronic Voting in Latin America: Evidence from Colombia's 2007 E-Voting Pilot. E-Voting and Identity: Lecture Notes in Computer Science Volume 5767, 2009, pp 75-91.

[10] Alvarez, R. Michael and Thad E. Hall. Electronic Elections: The Perils and Promises of Digital Democracy. Princeton: Princeton University Press. 2010.

[11] Alvarez, R. Michael, Gabriel Katz, and Julia Pomares. The Impact of New Technologies on Voter Confidence in Latin America: Evidence from E-Voting Experiments in Argentina and Colombia. Journal of Information Technology & Politics. Volume 8, Issue 2. 2011.

[12] Fujiwara, Thomas. Voting Technology, Political Responsiveness, and Infant Health: Evidence from Brazil. Unpublished Manuscript. https://www.gsb.stanford.edu/sites/default/files/documents/pe_02_11 _pefujiwara.pdf. 2010.

[13] Hidalgo, F. Daniel. Digital Democratization: Suffrage Expansion and the Decline of Political Machines in Brazil. Unpublished Manuscript. http://politics.as.nyu.edu/docs/IO/17524/hidalgo.pdf. 2010

[14] McCoy, Jennifer. One Act in an Unfinished Drama. Journal of Democracy 16(1): 2005.

[15] Dompnier, Nathalie. "Les machines à voter à l'essai. Notes sur le mythe de la "modernisation démocratique"." *Genèses (Genèses)*:, pp. 69-88.

[16] Rodrigues-Filho, Jose, Cynthia J. Alexander, and Luciano C. Batista. 2006. E-voting in Brazil—The Risks to Democracy. In Electronic Voting 2006, edited by. R. Krimmer & R. Grimm, 85–94. Bonn, Germany: Gesellschaft fur Informatik.

[17] Pomares, Julia. 'Inside the Black Ballot Box. Origins and Consequences of Introducing Electronic Voting Methods'. PhD diss., London School of Economics and Political Science. 2012

[18] Ware, Alan.. The American Direct Primary: Party Institutionalization and Transformation in the North. Cambridge University Press. 2002

[19] van Buuren, S., & Groothuis-Oudshoorn, K.. MICE: Multivariate imputation by chained equations in R. *Journal of Statistical Software* 45(3), 2011, pp. 1-67.

TABLE IV: Determinants of Perceived Ease of Use and Speed of Voting Procedure

	Ease of voting			Voting speed		
	Effect	95% C.I.		Effect	95% C.I.	
Problem voting: no to yes	**-12.9**	**-19.6**	**-7.5**	**-14.5**	**-22.1**	**-6.9**
Qualification of authorities: none/little to quite a lot/very	**4.0**	**1.3**	**7.2**	**12.4**	**7.1**	**18.0**
Needed help: no to yes	**-13.1**	**-21.4**	**-6.9**	**-15.9**	**-26.3**	**-7.1**
Previous e-voter: no to yes	1.9	-0.8	4.6	**6.2**	**1.5**	**10.8**
Split ticket voter: no to yes	1.6	-1.0	4.1	0.8	-4.4	5.5
Lives in Capital: no to yes	2.7	-0.4	6.0	**13.5**	**8.1**	**19.2**
Age: 24 to 49	**-2.7**	**-5.5**	**-0.3**	3.0	-1.8	7.6
Female: no to yes	-1.0	-3.5	1.7	4.1	-0.6	9.0
Information scale (0-3): 0 to 1	-0.7	-4.3	0.9	-1.4	-6.5	1.8
Technology use scale (0-6): 3 to 6	0.4	-2.4	2.9	3.1	-1.1	7.5
Belief technology simplifies life: agree to agree a lot	**3.1**	**2.1**	**4.3**	**5.6**	**2.7**	**8.2**
Education: incomplete 2ry to complete 3ry	0.9	-1.2	3.1	-1.1	-4.9	2.6

Note: Ease of voting is coded 1 if "easy" or "very easy", and 0 if "difficult" or "very difficult". Voting speed is coded 1 if "fast" or "very fast", and 0 if "slow" or "very slow". Effects should be interpreted as the change in the probability that the dependent (column) variable takes value one as a result of a marginal change in the independent (row) variable. Bold figures denote statistically significant effects, at a 5% confidence level. N = 981.

TABLE V: Determinants of Perceived Ease of Use of Different Features of the Voting System

	Ease of instructions			Ease of inserting ballot			Ease of using touchscreen			Ease of finding choice		
	Effect	95% C.I.		Effect	95% C.I.		Effect	95% C.I.		Effect	95% C.I.	
Problem voting: no to yes	**-3.0**	**-6.9**	**-0.1**	**-18.4**	**-26.3**	**-11.3**	**-5.8**	**-10.7**	**-1.9**	**-14.0**	**-20.9**	**-8.1**
Qualification of authorities: none/little to quite a lot/very	1.9	-0.3	4.3	-2.2	-6.2	1.7	**4.2**	**1.4**	**7.1**	**7.3**	**3.7**	**11.2**
Needed help: no to yes	**-10.8**	**-18.9**	**-5.1**	**-19.6**	**-29.2**	**-11.4**	**-9.4**	**-17.0**	**-3.6**	**-10.3**	**-18.0**	**-3.5**
Previous e-voter: no to yes	1.8	-0.1	3.8	2.1	-1.8	5.8	-2.4	-5.6	0.2	1.4	-2.3	4.8
Split ticket voter: no to yes	0.1	-2.1	2.0	0.2	-3.7	4.1	-0.4	-3.4	2.1	-0.8	-4.7	2.4
Lives in Capital: no to yes	2.0	0.0	4.4	3.1	-0.4	7.9	-0.8	-3.4	1.9	-1.4	-4.8	2.2
Age: 24 to 49	-1.3	-3.4	0.5	0.6	-2.8	4.1	-0.5	-2.7	1.9	-1.0	-4.2	2.0
Female: no to yes	-0.7	-2.6	1.2	-2.5	-5.8	1.2	-0.6	-3.0	2.1	-0.4	-3.6	2.9
Information scale (0-3): 0 to 1	**0.4**	**0.1**	**0.8**	0.4	-3.0	1.7	**0.7**	**0.4**	**1.1**	1.2	-0.2	1.7
Technology use scale (0-6): 3 to 6	1.0	-0.9	2.7	0.6	-3.4	4.3	0.8	-1.7	3.2	-1.9	-5.8	1.5
Belief technology simplifies life: agree to agree a lot	**1.7**	**0.9**	**2.7**	0.7	-2.1	3.1	**3.0**	**2.0**	**4.0**	**2.4**	**0.2**	**4.3**
Education: incomplete 2ry to complete 3ry	0.1	-1.3	1.5	-2.2	-4.9	0.5	**-2.7**	**-4.6**	**-0.9**	-1.0	-3.6	1.5

Note: Responses to questions related to the ease of use of different features of the voting system are coded 1 if "easy" or "very easy", and 0 if "difficult" or "very difficult." Effects should be interpreted as the change in the probability that the dependent (column) variable takes value one as a result of a marginal change in the independent (row) variable. Bold figures denote statistically significant effects, at a 5% confidence level. N = 981.

TABLE VI: Determinants of Overall Evaluation and Preference for Traditional Voting

	Evaluation system			Preference for traditional voting		
	Effect	95% C.I.		Effect	95% C.I.	
Problem voting: no to yes	**-11.9**	**-19.8**	**-5.1**	**11.4**	**2.8**	**19.9**
Qualification of authorities: none/little to quite a lot/very	**14.7**	**9.9**	**20.0**	**-24.5**	**-31.7**	**-17.0**
Needed help: no to yes	**-8.4**	**-17.0**	**-1.2**	**14.7**	**3.5**	**24.5**
Previous e-voter: no to yes	-0.4	-5.4	4.0	3.6	-3.9	10.9
Split ticket voter: no to yes	-0.4	-5.2	4.1	-0.4	-7.6	7.0
Lives in Capital: no to yes	3.0	-2.0	7.5	0.2	-6.8	7.3
Age: 24 to 49	-1.9	-5.9	2.5	1.2	-4.9	7.7
Female: no to yes	0.8	-3.6	4.7	-2.1	-9.1	5.2
Information scale (0-3): 0 to 1	**-5.0**	**-11.3**	**-0.1**	4.3	-0.2	7.9
Technology use scale (0-6): 3 to 6	1.9	-2.9	6.3	**-7.8**	**-14.9**	**-0.4**
Belief technology simplifies life: agree to agree a lot	**6.6**	**4.4**	**8.5**	**-22.0**	**-27.2**	**-16.0**
Education: incomplete 2ry to complete 3ry	-2.6	-6.1	1.1	-3.3	-8.7	2.3

Note: General evaluations of the system are coded 1 if "good" or "very good", and 0 if "bad" or "very bad". Preferences for traditional voting are coded 1 if the voter reports that she/he would have preferred to vote using the traditional voting system, and 0 otherwise. Effects should be interpreted as the change in the probability that the dependent (column) variable takes value one as a result of a marginal change in the independent (row) variable. Bold figures denote statistically significant effects, at a 5% confidence level. N = 981.

TABLE VII: Determinants of Perceptions of Confidence in the Integrity of the Election Process

	Confidence vote recorded			Confidence ballot secrecy			Election in Salta are Clean		
	Effect	95% C.I.		Effect	95% C.I.		Effect	95% C.I.	
Problem voting: no to yes	-6.9	-14.8	0.2	**-11.0**	**-20.0**	**-2.0**	-1.5	-9.7	7.0
Qualification of authorities: none/little to quite a lot/very	**16.6**	**10.6**	**22.6**	**23.3**	**15.7**	**29.9**	**22.1**	**14.8**	**29.6**
Needed help: no to yes	-3.0	-12.2	5.3	-1.5	-12.2	9.5	-1.3	-10.6	8.9
Previous e-voter: no to yes	-0.1	-6.1	5.7	2.9	-4.0	9.4	3.9	-2.7	10.5
Split ticket voter: no to yes	-3.0	-8.9	2.6	-3.7	-10.3	3.5	1.1	-5.5	7.7
Lives in Capital: no to yes	0.3	-5.6	6.2	**-8.9**	**-16.2**	**-1.8**	**-9.2**	**-15.9**	**-2.6**
Age: 24 to 49	-1.4	-6.8	4.3	2.9	-3.5	9.1	4.5	-1.4	10.7
Female: no to yes	2.9	-2.7	8.7	0.4	-6.0	7.1	-2.6	-9.0	3.7
Information scale (0-3): 0 to 1	-0.2	-4.6	2.9	**-5.6**	**-9.6**	**-0.6**	-1.2	-4.9	3.3
Technology use scale (0-6): 3 to 6	-0.7	-6.6	4.6	-3.6	-10.8	3.6	-4.5	-10.7	2.5
Belief technology simplifies life: agree to agree a lot	**8.0**	**4.6**	**10.9**	**12.4**	**8.0**	**17.0**	**17.7**	**11.5**	**23.8**
Education: incomplete 2ry to complete 3ry	-2.7	-6.9	1.8	0.3	-5.1	5.4	2.8	-2.3	8.1

Note: Confidence that the vote was correctly recorded is coded 1 if "sure" or "very sure", and 0 if "unsure" or "very unsure". Confidence in ballot secrecy us coded 1 if "confident" or "very confident", and 0 if "not confident" or "not at all confident". Perceptions of cleanness of elections in Salta is coded 1 if "very clean" or "somewhat clean", and 0 if "not very clean" or "not at all clean". Effects should be interpreted as the change in the probability that the dependent (column) variable takes value one as a result of a marginal change in the independent (row) variable. Bold figures denote statistically significant effects, at a 5% confidence level. N = 981.