

## Do Voters and Poll Workers Differ in their Attitudes Toward e-voting? Evidence from the first e-election in Salta, Argentina

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We provide an analysis of voter and poll worker perceptions of the advantages and disadvantages of a new e-voting system vis-à-vis traditional ballot-and-envelope voting in the 2011 election in Salta, Argentina. The results of this comparison provide new insights into how poll workers perceive the implementation of new voting technologies and show that both points of view need to be taken into account when assessing new election technology. We found that speed is perceived to be the most important advantage of e-voting; and more so for poll workers than for voters. This is not surprising since speed is an aspect of a voting technology that directly affects the workflow of poll workers. We also found that poll workers expressed more intensely negative attitudes towards e-voting than voters, especially in relation to difficulty of use and lack of training. Finally, we found that both voters and poll workers placed more importance on usability than confidence issues. This is an unexpected finding since election authorities have identified confidence in the integrity of the election process as the main trigger of the adoption of the new voting technology. Analyses like the one conducted in this paper should be an integral component of the evaluation of the implementation of new voting technologies and introduction of important procedural changes.

### 1. INTRODUCTION

In nations where voting is conducted in-person, the poll workers who staff the balloting locations are an essential component of the election administrative process. Generally their duties include setting up and opening the polling place, authentication of potential voters, distribution and receipt of voting materials, maintenance of the ballot materials and voting systems during the voting period, dealing with problems that arise on election day, conducting initial tabulations of voting materials and ballots, handling initial audits of in-person voting, closing the polling place and transporting the election materials to the authorities. Poll workers have quite impressive responsibilities; they handle ballots and voting systems, and their actions help maintain critical goals of the process—keeping the balloting process secret, accessible, secure, and fair (to name just a few). It is no wonder that research has focused recently on poll workers: they have considerable discretion in the field during an election, and their behavior is one important aspect in the development of trustworthy elections with a high degree of integrity.<sup>1</sup>

While poll workers are critical for the conduct of trustworthy elections, research into how they handle their tasks is still in a nascent stage. There have been studies of poll worker discretion and how they exercise it (Alvarez and Hall 2006; Atkeson et al. 2010; Kimball, Kropf, and Battles 2006), of the characteristics and qualifications of poll workers as reported by local election officials (Kimball et al. 2009), of how voters evaluate the performance of the poll workers they encounter on election day (Claussen et al. 2008; Hall and Stewart 2013), and of the impact of voters' perceptions of poll worker performance on public confidence in the fairness of the election outcome (Hall, Monson, and Patterson 2009). However there have been few self-evaluations by poll workers presented in this growing body of research, nor direct comparison between how poll workers evaluate a particular election or administrative process and how voters evaluate the same election or administrative process. Thus, one goal of our paper is to provide such a direct comparison between how voters and poll workers evaluate the same election. We compare the advantages and disadvantages of two different voting systems—a traditional paper-based voting procedure vis-à-vis a new e-voting system—reported by voters who used each

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<sup>1</sup> Recent research has focused on the discretion of poll workers, and how voters evaluate their efforts (Alvarez and Hall 2006; Atkeson and Saunders 2007; Claussen et al. 2008; Hall, Monson and Patterson 2008; Hall and Stewart 2013).

system, with the advantages and disadvantages reported by poll workers who served at a polling place where each voting system was used.

As important as the perceptions of poll workers are, there is scant research on their performance in Latin America. Much attention has recently been devoted to the issue of the independence of election authorities and its impact on voters' and legislators' confidence in the fairness of the election process (Hartlyn et al. 2008; Rosas 2010; Barrientos del Monte 2008). However, we do not know of any study on the perceptions of poll workers in Latin America, nor any studies that compare their perceptions with those from voters.

This lacuna is even more pressing as several countries in the region are implementing new procedures and voting systems, which constitute another important aspect of a poll worker's job. As most changes in election laws or voting technologies affect in-person voting, poll workers are often called upon to implement those changes. This is particularly true in jurisdictions where new voting technologies are being deployed for the first time—poll workers in those locations need to learn how to setup, maintain, use, and close down new voting technologies, as well as how to explain to voters how they are to be used. Thus, it is important to study poll worker evaluations of voting technologies, especially in elections where they are helping to deploy those technologies for initial use. This is another key goal of our research reported below, to study poll worker evaluations of new voting technologies being used extensively for the first time in an important election in Salta, Argentina. In addition to studying the perceived advantages and disadvantages of each voting system from the point of view of poll workers, we consider other poll worker evaluations, including confidence in their ability to operate the system, assessment of the length of the vote count, and evaluations of the ease of serving as a poll worker.

In this paper we present data from a unique research project that has evaluated the implementation of electronic voting systems in Salta, Argentina (Pomares et al. 2011; Alvarez et al. 2013). Our research team was able to survey voters who used the new electronic voting system deployed in the 2011 elections in Salta, as well as voters who used the traditional voting system; some of the initial results from that research were recently presented in Alvarez et al. 2013. We also were able to provide poll workers with a very similar questionnaire, and in this paper we concentrate on comparing the results from the voter survey with similar results from poll workers. The main part of our analysis in this paper is based on identical check-all-that apply questions about the advantages and disadvantages of each voting system that were included in both the voter and poll worker questionnaires. In the next section we discuss the electoral process in Argentina, as well as the electronic voting system recently deployed in Salta. We then briefly discuss our evaluation project, and present results that compare the evaluations of poll workers with those from the voters. In our conclusion we discuss the implications of this work, as well as new directions for future study.

## 2. HOW ELECTIONS WORK IN ARGENTINA

Although national elections in Argentina are regulated by federal legislation, election administration is highly decentralized, with each of the 24 provinces enjoying the autonomy to enact its own electoral and political institutions. Despite this, provinces throughout the country use similar voting procedures. Two salient features of the paper-based voting system used throughout the country are that it is based on the French ballot-and-envelope model, whereby voters select a party-specific ballot that specifies party nominees for all the races and place it inside an envelope; and that the layout of the polling place is such that voters wait in line to enter a "black room" (*cuarto oscuro*) where they make their choices in private, and subsequently leave the room and proceed to deposit the vote in a ballot box within sight of other voters and election authorities. An important consequence of this voting procedure for electoral behavior is that the

practice of listing party nominees for all the races on the same partisan ballot discourages split-ticket voting, since in order to split the vote the voter has to select and cut sections of different partisan paper ballots by hand along dotted lines, and then place the preferred pieces (specifying the choice of different parties for different races) inside the envelope.

A second important consequence of the traditional paper-based voting procedure for electoral behavior is that each political party prints, distributes and supplies its own ballots on Election Day, which are displayed on tables inside the “black room.” This system used to work fairly effectively while there were two main parties (Peronist Party and the Radical Party) of relatively equal size, territorial outreach and resources. In recent years, however, extreme party fragmentation rendered this voting system archaic, ineffective and inequitable. Small parties find it difficult to guarantee their ballot is on the table. Therefore, bigger parties and incumbents enjoy an important advantage due to broader capabilities for printing, distributing and watching over their ballots. Similar to American voting procedures before the Australian ballot reform (Rusk 1970; Walker 2005; Ware 2002), this voting procedure also empowers party leaders at the local level who are in charge of recruiting party monitors and organizing ballot distribution and control at each voting precinct (Ware 2002).

Salta, a northern province located in the foothills of the Andes with an electoral roll of 850,000 voters, was the first province to introduce an e-voting system. The system was designed to resemble the country’s traditional voting system and was implemented gradually. It was first tested on a small scale during the 2009 provincial elections, for the second time during the January 2011 open primary elections, and for the third time during the April 2011 general elections. The 2011 implementation of e-voting comprised 33% of the province’s electoral roll and targeted voters concentrated in the capital of the province and surrounding municipalities. The justification for first rolling-out the system in urban areas was to make the process of deploying e-voting voting machines less cumbersome, and to evaluate the performance of the system when used by voters with relatively high levels of educational attainment and technological sophistication.

Whatever the voting procedure, every polling table is presided by a poll worker (*presidente de mesa*), who cannot be affiliated with any political party. She is the ultimate authority at the polling table and is helped by an auxiliary poll worker. Political parties or alliances can nominate one party monitor per polling table. Smaller parties find it more difficult to guarantee the presence of party monitors in every table, and strive to at least secure a party monitor at each precinct. An important feature of the roll-out of e-voting in Salta to bear in mind for the analysis is that poll workers assigned to e-voting precincts faced stronger incentives to attend training sessions.<sup>2</sup> Although all poll workers were recruited among elementary school teachers, those using the e-voting system were told that participating in the full training program would provide them with additional points for future promotion. This compensation scheme was designed by the Electoral Tribunal of the province together with the Ministry of Education.

The e-voting system, developed by an Argentine private vendor, was designed as to offer a voting experience resembling the traditional voting system. Instead of placing a party-specific ballot inside an envelope, voters insert a blank ballot inside the voting machine and subsequently select their preferred candidates for each race via the machine’s touch screen. Unlike other types of DRE machines, these machines serve only as voting machines and do not keep track of votes cast. After a voter has made all choices, the machine prints the different selections on the ballot, as well as on a Radio Frequency Identification (RFID) chip embedded on the same ballot. After the ballot has been printed, the voter can verify whether options printed on

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<sup>2</sup> The poll worker training was conducted by the Electoral Tribunal. The handbook provided to poll workers in voting e-locations is at <http://www.electoralsalta.gov.ar/Sitio/Eleccion/VotoElectronico/ManualAutoridadesMesa2012.pdf>.

the ballot coincide with the selections made using the machine's touch screen, as well as with the options recorded on the RFID chip. Lastly, in the same way as it is done under the traditional voting system, the voter inserts the paper ballot into a ballot box.

Although machines are located close to the polling tables where poll workers are positioned, polling places are designed as to guarantee voters' privacy. Nonetheless, the introduction of e-voting implies an important change to the layout of the polling place. The act of selecting electoral options behind doors inside the "black room" is replaced by the act of using a voting machine within sight of other voters and electoral authorities. This change might alter perceptions of vote secrecy. Previous research by the authors about voter attitudes toward e-voting and traditional voting in the same election (Alvarez et al. 2013) confirmed that there is a negative effect of e-voting on perceptions of vote secrecy.

In addition to being used by voters during polling hours, e-voting machines contain scanners that are used by poll workers to tally votes after the election is closed. In order to ensure that options recorded in the RFID chip are consistent with those marked on the ballot, poll workers scan the paper ballot and verify that choices coincide with the printed text. Party monitors gather around poll workers and also make sure that both pieces of information coincide. Since votes are counted electronically by passing them through the machine's reader, the preliminary tally is faster than under the traditional voting system where poll workers have to open each envelope, unfold the ballot (or pieces of ballots if the voter happened to split her vote), and count it by hand.

### 3. DATA AND RESULTS

Next we analyze attitudes toward voting technologies reported by voters and poll workers interviewed on Election Day, during the April 2011 general election in the Province of Salta. The voter sample comprised 1,502 individuals, mostly located in urban municipalities, with 59% of them voting in e-voting locations. E-voting and traditional voting stations were selected to produce samples of voters with similar socio-economic characteristics. Interviewers were instructed to randomly recruit voters on their way out of the polling locations. Interviewers had age quotas and half of their surveys had to be administered to men. We also administered a survey of 102 poll workers: 65 election authorities working in 23 e-voting locations, and 47 election authorities working in 15 traditional voting locations. As a part of a larger project, detailed reports from independent observers in the polling locations were also collected (Pomares et al. 2011). While voters and poll workers who used or administered the traditional voting procedure were asked primarily about their evaluation of that method, those who used or administered e-voting were asked primarily about their evaluation of e-voting.

Among several questions about confidence in the election process, ease of use and support for substituting traditional voting with electronic voting, we asked voters and poll workers about the advantages and disadvantages of the voting system that they used or administered. Because the wording of the latter questions was identical in all surveys (that is, surveys of voters and poll workers in e-voting and TV locations), we can compare results and analyze what attributes of the voting system are perceived to be relevant from voters and poll workers' perspectives depending on the type of system that they used.<sup>3</sup> There are two different

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<sup>3</sup> In interpreting results it should be taken into account that voters and poll workers who used or administered the traditional voting system did not interact with the e-voting system, and had never tried an alternative voting technology in a previous election. Although it is conceivable that expectations about the pros and cons of e-voting could have colored the responses of voters and poll workers assigned to TV locations, their experiences with the TV system are the only *actual* voting experiences that could have influenced their responses. In contrast, voters and poll workers assigned to e-voting locations might have taken into account their recent experience with the use and operation of the e-voting system,

types of comparisons to be made: between attitudes toward voting systems reported by voters and poll workers; and between attitudes of either actor (voters *or* poll workers) towards e-voting and traditional voting.

Table 1. Voters and Poll Workers: Advantages of Voting Systems

	E-voting Precincts (EV)		Traditional Voting Precincts (TV)	
	Voters	Poll Workers	Voters	Poll Workers
Speed	70.1	84.4	32.5	17.4
More precise count	7.4	25.0	1.4	2.2
Reduced risk of fraud	4.4	15.6	4.9	4.3
More confidence	7.7	9.4	10.8	8.7
Ease of use	28.9	7.8	37.0	26.1
Some other advantage	12.4	4.7	13.1	34.8
At least one advantage	94.3	93.8	82.4	78.3

*Note:* The table shows the distribution of responses to a “check-all-that-apply” question on advantages of voting systems, for voters (887 who used EV and 617 who used TV) and election authorities (65 who administered EV precincts and 47 who administered TV precincts).

Results corresponding to perceived advantages of voting systems from the point of view of voters and poll workers are presented in Table 1. The table shows the percentage of voters and poll workers who specified *speed*, *more precise count*, *reduced risk of fraud*, *more confidence*, and *ease of use* as advantages of each voting system. A first important finding is that when asked about the advantages of each voting system, e-voters and poll workers administering e-voting locations are considerably more likely to select *speed* as an advantageous attribute of the system than voters and poll workers in TV locations. Specifically, *speed* is identified as an advantage of e-voting by 70% of e-voters and as many as 84% of poll workers administering an e-voting table. This result comes as little surprise in the case of poll workers since *speed* is an attribute that affects poll workers’ duties. Another similarity in the perceptions of voters and poll workers is that both are more likely to specify *more precise count* as an advantage of e-voting than of traditional voting. Lastly, both types of actors are considerably less likely to identify *ease of use* as an advantage of e-voting than of traditional voting; especially so in the case of poll workers. Thus, voters and poll workers largely coincide when it comes to evaluations of the relative speed, accuracy, and usability of voting systems.

However, do poll workers and voters have similar perceptions of the integrity of the electoral process? We expect some differences since each interacts with the voting system in different ways. Poll workers are responsible for the overall conduct of operations at the polling table and, as a consequence, they interact with the voting system throughout the voting process (from setting up the polling table to the preliminary tally of results) whereas the voter only interacts with the system at the voting stage of the process. Indeed, we find that the similarities between the perceptions of voters and poll workers stop when it comes to features of the systems related to trust in the election process such as reduced risk of fraud and increased confidence.

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as well as previous experiences with the traditional voting system, in formulating their evaluations of the new voting system.

While e-voters are slightly less likely to identify *reduced risk of fraud* and *more confidence* as an advantage of the system compared to traditional voters, the opposite is observed for poll workers administering e-voting tables. The lower likelihood of identifying *more confidence* as an advantage among e-voters (relative to traditional voters) is somewhat worrisome, since one of the key arguments of the electoral authorities in the move toward e-voting was promoting voters' confidence in the integrity of the electoral process.

Table 2. Voters and Poll Workers: Disadvantages of Voting Systems

	E-voting Precincts (EV)		Traditional Voting Precincts (TV)	
	Voters	Poll Workers	Voters	Poll Workers
Manipulation of results	1.6	1.6	9.1	11.9
Less control by election authorities	0.0	0.0	4.9	2.4
High costs	0.2	1.6	4.6	0.0
Difficulty	2.4	29.5	5.9	16.7
Some other	9.1	42.6	21.3	61.9
At least one	12.1	73.8	42.6	76.2

*Note:* The table shows the distribution of responses to a “check-all-that-apply” question on disadvantages of voting systems, for voters (887 who used EV and 617 who used TV) and election authorities (65 who administered EV precincts and 47 who administered TV precincts).

Next we turn to the perceived disadvantages of each system from the point of view of voters and poll workers. In Table 2 we present the percentage of voters and poll workers who identified *manipulation of results*, *less control by election authorities*, *high costs*, and *difficulty* as disadvantages of each system. An important finding is that voters are more eager to name disadvantages of traditional voting than the electronic method. Whereas 43% of traditional voters were able to name at least one disadvantage of ballot-and-envelope system (with *manipulation of results* being the one identified the most frequently), only 12% of e-voters named a disadvantage of the new voting system. These relatively positive attitudes towards e-voting among voters were confirmed by a previous study in which we showed strong support for replacing traditional by electronic voting system (Alvarez et al. 2013). In the case of poll workers, however, about three quarter of respondents identified some disadvantage of the voting system, regardless of whether they administered an e-voting or traditional voting table. There were, nonetheless, considerable differences in the nature of the shortcomings identified by authorities administering each system. In particular, while as many as 30% of poll workers in e-voting locations selected *difficulty* as a disadvantage of the system, only 17% of poll workers in TV locations did so. In contrast, as many as 12% of poll workers in TV locations selected *manipulation of results* as a disadvantage, compared to only 2% of poll workers in e-voting locations. These findings suggest that poll workers exhibited mixed opinions about the relative benefits of e-voting; while they expressed concerns about usability, they rarely expressed trepidations about the impact of the new system on confidence and security.

Further evidence about the pros and cons of e-voting and traditional voting can be drawn from answers to follow-up questions about *other* advantages and disadvantages of the systems posed to voters and poll workers. Although relatively few respondents provided answers to these questions, voters and poll workers in traditional voting locations were more likely to identify the fact *there is more experience with this system* and being *more beneficial for the elderly* as

advantages of TV. While few poll workers reported advantages of e-voting (other than those discussed earlier in this section), several voters reported other advantages, including *no paper waste*, that it is *easy to assemble the vote by race* (i.e. greater ease of split-ticket voting), *more modern use of technologies*, and that *all electoral options are easily visible* as advantages of e-voting. Also as we show in Table 2, voters and poll workers were considerably more likely to identify *other* disadvantages of traditional voting than of e-voting. In particular, voters and poll workers in TV locations often identified *slowness* and the fact that it *generates long waiting times* as a disadvantage of the traditional system. Individuals voting or administering the election in e-voting locations, in turn, often identified *lack of training and experience*, *more difficult for the elderly*, or that *the machines can break* as disadvantages of the e-voting system. The latter disadvantages point to concerns about insufficient ease of use and (lack of) familiarity rather than to concerns about security and confidence. In line with the results discussed earlier in this section, concerns about usability seem to be more prominent in the minds of voters and poll workers than concerns about security and confidence.

Table 3. Poll Workers: Other Evaluations

	E-voting Precincts (EV)	Traditional Voting Precincts (TV)
Precision of instructions (1-4 scale)	3.2	2.7
All elements available for opening on time (%)	81.5	66.0
Length of vote count (minutes)	35.4	125.1
Confidence in ability to operate system (%)	81.5	70.2
Ease of election authority job (1-4 scale)	3.1	2.8

*Note:* The table shows the distribution of responses to questions on the precision of instructions; whether all elements were available for opening the precinct on time; the number of minutes the vote count lasted; the confidence in the person's own ability to operate the voting system; and the ease of the job. Figures correspond to answers given by 65 election authorities working in EV precincts and 47 election authorities working in TV precincts.

In addition to asking about the advantages and disadvantages of each voting system, the poll worker questionnaire assessed other aspects of the electoral process, and included questions about poll workers' confidence in their ability to operate the voting systems, assessments of the precision of instructions, evaluations of whether all necessary elements were available for opening up the polls on time, estimation of the length of the vote count, and appraisals of the ease of the poll worker job. Table 3 shows how responses to these additional questions vary between poll workers assigned to e-voting and TV polling places. In general, poll workers assigned to e-voting locations describe the e-voting procedure in more positive terms than those assigned to TV locations; they assigned higher ratings to the precision of instructions and they were more likely to say that all elements were available for opening on time. There are no meaningful differences in terms of confidence in their ability to operate the system and the perceived ease of the poll worker job between e-voting and TV locations. The most prominent difference between responses provided by e-voting and TV poll workers lies in the estimated length of the vote count, which is reduced by about 90 minutes in e-voting locations relative to TV locations. The latter result is consistent with the previously discussed finding that poll workers in e-voting locations were considerably more likely to select *speed* as one of the advantages of the voting system.

Table 4. Characteristics of Poll Workers

	E-voting Precincts (EV)	Traditional Voting Precincts (TV)
Age (years old)	42.7	40.4
Education (1-8 scale)	6.3	5.8
Teacher (%)	84.6	78.7
Male (%)	29.2	10.6
Technology count (1-6)	5.1	5.3
First time as election authority (%)	35.4	66.0
Received poll worker training (%)	98.5	57.4

*Note:* The table shows the distribution of poll worker attributes. Figures correspond to answers given by 65 election authorities working in e-voting precincts and 47 election authorities working in TV precincts. The “Education” scale includes the following eight ordered categories: incomplete primary or less; complete primary; incomplete secondary; complete secondary; incomplete tertiary; complete tertiary; incomplete university; and complete university or more. The “technology count” scale is an additive index consisting of the sum of dummy indicators of use of various technologies, including: Internet at work, Internet at home, Automated Teller Machines (ATMs), cellphone, and home computer.

A caveat is in order with regards to differences between poll workers in each voting system. The level of training each received was different (see Table 4).<sup>4</sup> While almost all poll workers in e-voting precincts declared that they had received training before Election Day, only 57% of poll workers in traditional voting precincts answered yes. According to interviews with election authorities, a significant effort was built into training poll workers in e-voting. Also, as mentioned in the introduction, a compensation scheme was in place for promoting training among e-voting poll workers. Nonetheless, since recruitment of poll workers in traditional voting areas usually includes a large proportion of individuals who served as poll workers in some previous election, it can be expected that traditional poll workers were in less need of training compared to those in e-voting areas where the system was implemented for the first time.<sup>5</sup>

#### 4. DISCUSSION

Our research contributes to the growing literature on election administration in a number of different ways. First, we provide important evaluative data from an implementation of a new e-voting system in Salta, Argentina. Recently, scholars, administrators and advocates have called for more systematic and thorough evaluation of electoral reforms (e.g., Alvarez, Atkeson, and Hall 2012). This e-voting implementation follows that advice; researchers were given the opportunity to systematically survey voters and poll workers, to observe the election administration process, and to have access to other data from the election. In this paper we have focused on the advantages and disadvantages of new voting system vis-à-vis the older one from both voter and poll worker’ points of view, and we argue that analyses like these should be an

<sup>4</sup> Since the sample size is small in the case of the poll worker survey, our assessment of the impact of e-voting on poll worker evaluations is based on the complete sample of poll workers.

<sup>5</sup> There were also slight differences between voters assigned to e-voting and traditional voting locations. Since e-voting was introduced in polling places where the electorate was more technologically savvy and had higher socio-economic status, e-voters exhibited slightly higher levels of education, technological sophistication, and political information (See Alvarez et al. 2013).



integral component of all implementations of new voting technologies and important procedural changes.

Second, our study has produced new insights into how poll workers perceive the implementation of new voting technologies. We find that evaluations of e-voting were considerably more mixed among poll workers than among voters. Although poll workers in e-voting locations were more likely to say that the system was fast (specially at the counting stage), more precise, and less vulnerable to fraud, compared to those in traditional voting locations; they were also more likely to express concerns about lack of training and to say that the system posed usability challenges. In light of these findings—which suggest that poll workers are not as convinced as voters are that the e-voting system is easy to use—performance practice procedures (e.g. Alvarez, Atkeson, and Hall 2012) would advise administrators to follow up and determine why poll workers exhibit these concerns, and how these issues can be resolved through improvements in training, voter education, and perhaps technology upgrades.

Third, we found that both voters and poll workers are more likely to mention usability than confidence issues. Speed, in particular, is identified as an advantage of e-voting by both voters and poll workers, and especially so for the latter. This may not be surprising, since speed is an aspect of a voting technology that directly affects the workflow of poll workers. Similarly, we found that higher precision of the vote count is perceived to be an advantage of e-voting relative to TV more for poll workers than voters. These findings all point to the conclusion that both voters and poll workers were more concerned about how these new technologies contribute or hinder the familiarity and use of the system than about the potential impact on the transparency of the election. This is an unexpected finding since election authorities have identified the need to instill confidence in the integrity of the election process as the main trigger for the adoption of e-voting. Although the main focus of both—when identifying pros and cons of each voting method—is on usability, poll workers assign some relevance to the perceived lower risk of fraud while this issue is scarcely mentioned by voters. The fact that usability gets higher salience than confidence might arise from the fact that this was the first e-election and implemented in a gradual fashion and, as such, not be conceived as a definitive change. These are important findings for the future use of e-voting in Salta, in other provinces in Argentina, and of course for other nations that are implementing new voting technologies.

Also, in our work we have provided new results that solidify our understanding of the important role that poll workers play in the administration of elections. There has been considerable recent interest in studying poll workers (for a good summary of this literature see Hall and Stewart 2013). Here we follow in the footsteps of previous scholars and focus on poll workers, but we do so in a relatively novel way—using parallel surveys that both voters and poll workers completed in the election. That gives us an excellent opportunity to understand how poll workers, who are on the front-lines of democracy, perceive the implementation of this new voting system in Salta. This methodology also lets us compare those perceptions and evaluations directly with the opinions of voters. Of course, we caution that our results here may not be easily comparable to studies of poll worker perceptions in other nations, especially the United States (where most of the research to date on poll workers has been conducted). Differences in electoral law and regulations, election procedures, political context, poll worker selection mechanisms, and their training programs all will need to be considered before such comparisons could be made. But we hope that our research may point the way for a more comparative analysis of election administration (especially of poll workers), and we recommend that this approach be replicated in future studies of new voting system implementation. Differences in poll workers and voters opinions show that both views have to be taken in board when attempting to create a thorough evaluation of the implementation of an election reform.

Finally, our research here has examined mainly questions of how voters and poll workers react to the implementation of a new voting system. Similar methodologies could be used to examine more specific features of voting systems, in particular various technical or security features of those systems. For example, researchers should study not only how voters evaluate to verification mechanisms (Llewellyn et al. 2013), but also how poll workers evaluate vote verification procedures and technologies. Thus we believe that studies of voting system security, and new voting technologies more generally, should also include poll workers so that their evaluations of the usability, integrity, and reliability of new technologies can be assessed.

## REFERENCES

- R. Michael Alvarez and Thad E. Hall. 2006. "Controlling Democracy: The Principal-agent Problems in Election Administration." *Policy Studies Journal* 34, 4 (2006), 491-510.
- R. Michael Alvarez, Lonna R. Atkeson, and Thad E. Hall. 2012. *Evaluating Elections*. New York: Cambridge University Press.
- R. Michael Alvarez, Ines Levin, Julia Pomares, and Marcelo Leiras. 2013. "Voting Made Safe and Easy: The Impact of e-voting on Citizen Perceptions." *Political Science Research and Methods* 1, 1 (2013), 117-137.
- Lonna Atkeson and Kyle Saunders. 2007. "Election Administration and Voter Confidence: A Local Matter?" *PS: Political Science & Politics* 40, 4 (2007), 655-660.
- Lonna Rae Atkeson, Lisa Bryant, Thad Hall, Kyle L Saunders, and R. Michael Alvarez. 2010. "New Barriers to Voter Participation: An Examination of New Mexico's Voter Identification Law." *Electoral Studies* 29, 1 (2010), 66-73
- Fernando Barrientos del Monte. 2008. "Organismos electorales y confianza en las elecciones en América Latina." In *Texto preparado para el Seminario de Investigación del Área de Ciencia Política y de la Administración*. Universidad de Salamanca.
- Ryan L. Claasen, David B. Magleby, J. Quin Monson, and Kelly D. Patterson 2008. "At Your Service: Voter Evaluations of Poll Worker Performance." *American Politics Research* 36, 4 (2008), 612-634.
- Thad E. Hall, Quin Monson, and Kelly Patterson. 2007. "Poll Workers and the Vitality of Democracy: An Early Assessment." *P.S.: Political Science and Politics* 40, 4 (2007), 647-654.
- Thad E. Hall, Quin Monson, and Kelly Patterson. 2009. "The Human Dimension of Elections: How Poll Workers Shape Public Confidence in Elections." *Political Research Quarterly* 62, 3 (2009), 507-22.
- Thad E. Hall and Charles Stewart III. 2013. "Attitudes Toward Poll Workers in the 2012 Election." Manuscript, April 4, 2013.
- Jonathan Hartlyn, Jennifer McCoy, and Thomas Mustillo. 2008. "Electoral Governance Matters. Explaining the Quality of Elections in Contemporary Latin America." *Comparative Political Studies* 41, 1 (2008), 73-98.
- David C. Kimball, Martha Kropf, and Lindsay Battles. 2006. "Helping America Vote? Election Administration, Partisanship, and Provisional Voting in the 2004 Election." *Election Law Journal* 5, 4 (2006), 447-61.
- David C. Kimball, Brady Baybeck, Cassie Gross, and Laura Wiedlocher. 2009. Poll Workers and Election Administration: The View from Local Election Officials. Unpublished manuscript. University of Missouri-St. Louis. [http://www.umsl.edu/~kimballd/dk\\_bb\\_June09.pdf](http://www.umsl.edu/~kimballd/dk_bb_June09.pdf) (accessed March 11, 2014).
- Morgan Llewellyn, Steve Schneider, Zhe Xia, Chris Culnane, James Heather, Peter Y.A. Ryan, and Shriramkrishnan Srinivasan. 2013. "Testing Voters' Understandings of a Security Mechanism used in Verifiable Voting." *USENIX Journal of Election Technology and Systems (JETS)* 1, 1 (2013), 53-61.
- Julia Pomares, Marcelo Leiras, Carolina Tchintian, and Anastasia Peralta Ramos. 2011. Cambios en la Forma de Votar. La Experiencia de Salta con el Voto Electronico. Documentos de Políticas Públicas #94 [Changes in the Manner of Voting. Salta's Experience with Electronic Voting. Public Policy Documents #94]. Centro de Implementación de Políticas Públicas para la Equidad y el Crecimiento. Buenos Aires, Argentina.
- Guillermo Rosas. 2010. "Trust in elections and the institutional design of electoral authorities: Evidence from Latin America." *Electoral Studies* 29, 1 (2010), 74-90.
- Jerrold Rusk. 1970. "The Effect of the Australian Ballot Reform on Split Ticket Voting: 1876-1908." *The American Political Science Review* 64, 4 (1970), 1220-38.
- Lee Demetrius Walker. 2005. "The Ballot as a Party-System Switch. The Role of the Australian Ballot in Party-System Change and Development in the USA " *Party Politics* 11, 2 (2005), 217-41.
- Alan Ware. 2002. *The American Direct Primary*. Cambridge: Cambridge University Press.