



**ELECTRONIC
VOTING IN
PARAGUAY**

2023 Elections:
**Use of electronic
voting machines**

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ELECTRONIC VOTING IN PARAGUAY

2023 ELECTIONS: USE OF ELECTRONIC VOTING MACHINES

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TEIC is a Non-Governmental Organization founded in 2012, whose mission is the defense and promotion of human rights in the digital environment. Among its main topics of interest are freedom of expression, privacy, access to knowledge and gender on the Internet.

2023 ELECTIONS: USE OF ELECTRONIC VOTING MACHINES

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EXECUTIVE SUMMARY

This report provides a summary of the findings of an electronic voting machine usage survey conducted in Asunción and Ciudad del Este during the general elections of April 30, 2023. A total of 836 surveys were conducted in 30 polling stations.

This data collection builds on a similar initiative conducted in Asunción during the 2021 elections. The objective is to analyze the evolution of voting behavior with electronic voting machines, over a three-year period since the initial implementation of the system. The survey collects data concerning the effectiveness of publicity on the electronic voting system, usability issues, identifying software and hardware failures encountered by voters, effective guidance for proper ballot control by polling station authorities, and general voter perceptions of the electronic system.

In general, the report shows a positive perception of the electronic voting system by voters in both cities. However, there are also a number of challenges that need to be addressed by the electoral authority, as these challenges demonstrate a lack of understanding by voters of how the system operates. More specifically, voters in Asunción and Ciudad del Este:

- Continue to enter the voting booth accompanied. Although there has been a significant decrease in Asunción compared to the 2021 survey, which is a positive finding, the numbers in Ciudad del Este are not encouraging. Close attention is needed to address this detrimental practice that violates the privacy of voters and their right to vote by secret ballot.
- Do not effectively control how they vote, with a large majority of people not using the double visual and RFID chip control, in breach of the guidelines established by the electoral authority. The data collected in this survey shows that fewer voters in Asunción effectively controlled their votes compared to 2021.
- Believe that voting is stored in the electronic voting machines, contrary to what was declared by the electoral authority.

The findings show that there is still a long way to a true understanding of how electronic voting machines work. These findings also emphasize the complexity of ensuring a full understanding of this type of voting machines, despite the efforts of various actors to explain how the system works.

Finally, other than positive feedback from voters about the system, the report also shows a high level of polarization about the use of electronic voting machines. In addition, it highlights the concern about the lack of guarantees by the TSJE (Superior Court of Electoral Justice) to carry out an independent audit process of the electronic voting machines and to involve actors such as the civil society, the independent technical community, and academia, among others.

1. CONTEXTUAL FRAMEWORK

In order to understand the impact of the implementation of electronic voting machines in the Paraguayan electoral system, TEDIC conducted a first survey on the use of electronic voting machines in 2021. A total of 438 surveys with gender and age quota were collected in Asunción. This approach was carried out with the purpose of obtaining data that would allow inferring general behaviors of voters in the city and during the municipal elections.

The survey reflected a high level of satisfaction with the electronic voting system. However, while 41.9% of voters in Asunción rated the overall electronic voting system as easy, convenient, simple and accessible, with negative ratings such as feeling nervous, scared or unfamiliar being much lower (4.1%)¹, the survey revealed a series of concerning results that represent a significant threat to the integrity of the electoral system in a context of high electoral bias. Specifically, voters in the city of Asunción:

- Did not actively participate in the electronic voting process nor with digital simulators and/or face-to-face stations provided by the TSJE prior to the elections.
- Failed to make extensive use of the RFID chip feature provided by the voting machines to verify their ballots.
- Entered the booth accompanied in order to cast the ballot.
- Interpreted that the votes are stored in the electronic voting machines and not only in the ballots, contrary to what was explained by the TSJE.

Regardless of the specific results of the survey, overall, various political and social actors expressed satisfaction with the results of Election Day in 2021, and there was no further reflection on the electronic voting machines.

The preliminary report of the Electoral Observation Mission of the Organization of American States (OAS) for this election noted that the implementation of the voting machine facilitated a speed increase in the counting of votes at the polling station, avoided errors in the preparation of the minutes and avoided interpretations on the validity or invalidity of the votes.²

1 Carrillo, Alcaraz, and García.

2 Organization of American States, "Preliminary Report of the OAS Electoral Observation Mission in Paraguay", Text, 2021, https://www.oas.org/es/centro_noticias/comunicado_prensa.asp?sCodigo=D-009/21.

However, it also raised the alarm about the need for the TSJE to carry out its own technical tests to thoroughly audit the systems, equipment and RFID chips so that it can verify the security and efficiency of the system, noting that for this election only the company carried out all the security tests.³ It is important to highlight this reflection because it links with the demands of civil society: since 2020, TEDIC has noticed the need for independent audits that include not only political proxies, but also civil society, academia and the independent technical community.⁴

The Preliminary Report of the Observation Mission of the MERCOSUR Parliament (Parlasur) highlighted that the leader of the main opposition party (Authentic Radical Liberal Party- PLRA) expressed confidence in the changes made by the Electoral Justice, including electronic voting.⁵ Among a series of recommendations of this observation mission, the only one referring to voting machines calls for more training to facilitate the use of voting machines, with special focus on senior voters.⁶

1.1. Insecurity and fraud narrative

The aforementioned scenario had an abrupt change in the context of the internal party elections of 2022 and, in particular, of the general elections of 2023. An initial episode of distrust towards the physical security practices and the safeguarding of the electronic voting machines was a substantial fire that disabled 7600 voting machines and destroyed the warehouse where the machines were kept.⁷

Subsequently, there was a direct narrative of fraud in the internal party elections of the Authentic Radical Liberal Party (PLRA) and the National Concertation for a New Paraguay⁸ in 2022. In this narrative, the electronic voting machines became the main factor that led to the accusation of fraud.

More specifically, Eduardo Nakayama, candidate for senator of the PLRA, accused members of his party (PLRA) of fraud, alleging a “huge and disproportionate load of votes”. He argued that the number of people who voted in certain polling stations did not match the number of votes that were cast in favor of the candidate.⁹

3 Organization of American States.

4 TEDIC, “Electronic voting: lack of transparency by TSJE a few working days before trial period”, TEDIC (blog), 9 March 2020, <https://www.tedic.org/voto-electronico-falta-de-claridad-testeo-tsje/>.

5 Mercosur Parliament, “Preliminary Report of the International Election Observation and Accompaniment Mission for the elections of mayors and members of municipal boards 2021 of the Republic of Paraguay”, 2021, <https://www.parlamentomercosur.org/innovaportal/file/19707/1/informe-preliminar---observatorio-parlasur---municipales-paraguay-2021.pdf>.

6 Mercosur Parliament.

7 Última Hora, “Fire in the TSJE classified as an attack on the democratic system”, Última Hora, 2 October 2022, section - Printed Edition, <https://www.ultimahora.com/califican-incendio-el-tsje-como-un-ataque-al-sistema-democratico-n3026413>.

8 The National Concertation for a New Paraguay, and also known as Concertation 2023 (Concertación 2023), was a political coalition founded in 2022 by several opposition political parties in Paraguay. Its creation aimed to prepare for the general elections of Paraguay in 2023. For more information: [https://es.wikipedia.org/wiki/Concertaci%C3%B3n_Nacional_\(Paraguay\)](https://es.wikipedia.org/wiki/Concertaci%C3%B3n_Nacional_(Paraguay))

9 TEDIC, “Less technological-solutionist discourse, more electoral reliability”, TEDIC (blog), 25 January 2023, <https://www.tedic.org/menos-discurso-tecno-solucionista-mas-confianza-electoral/>.

The internal elections of the National Concertation were not exempt from these accusations. Specifically, proxies of the Patria Querida party (members of said National Concertation) denounced a fraud scheme in a polling station in which voting officials handed out printed and signed electronic ballots to certain voters so that they could systematically enter them in the voting machines. This triggered a series of interventions by the Public Prosecutor's Office and the indictment of eight people under the label of "falsification of elections"¹⁰.

Shortly before the date of the presidential elections, the media outlet El Surtidor reported on the dissemination of misinformation in the newspaper La Nación. These guidelines attempted to plant a narrative about the alleged entry of Brazilian hackers to disrupt the elections on the part of the opposition.¹¹

The peak of the fraud narrative was most evident in the month of the elections. For example, fifteen days before the elections, the National Crusade Party requested to suspend the elections due to an alleged theft of data from the TSJE's computer system, asking for a one-month extension for the elections.¹² This request was denied.

After the announcement of the election results, this same party called for a strong protest alleging fraud through electronic voting machines. Most of the party's complaints revolved around a significant lack of transparency in the implementation of the electronic voting system, as well as the lack of response from Magic Software Argentina (MSA)¹³ which did not answer questions from Cruzada Nacional. The party also raised questions related to the TREP results transmission system and raised concerns about the disappearance of a "universal CD" from the offices of the TSJE's ICT Directorate.¹⁴

Cruzada Nacional's complaints triggered unprecedented nationwide protests, leading to episodes of repression and massive arrests by the National Police and the military. Such events resulted in the complete suspension of the mobilizations.¹⁵ The conflict reached a stage of distrust to the point that representatives of the National Crusade Party, the New Republic movement, and the Guasu Ñemongeta Front Alliance, submitted a note to the president of the TSJE, requesting the annulment of the general elections and supporting the fraud narrative.¹⁶

10 TEDIC.

11 El Surti, "Pro-Santiago Peña Campaign Advertised Electoral Disinformation on Facebook", El Surtidor, 2023, <https://elsurti.com/chequeo/2023/04/27/campana-a-favor-de-santiago-pena-pauto-desinformacion-electoral-en-facebook/>.

12 El Nacional, "Payo Cubas calls for suspension of general elections", El Nacional, 2023, section - Politics, <https://www.elnacional.com.py/politica/2023/04/14/payo-cubas-pide-que-se-suspendan-las-elecciones-generales/>.

13 MSA is the company that supplies electronic voting machines to the TSJE.

14 TEDIC, "In response to allegations of electoral fraud: More transparency and citizen participation", TEDIC (blog), 3 May 2023, <https://www.tedic.org/ante-denuncias-de-fraude-electoral-mas-transparencia-y-participacion-ciudadana/>.

15 Última Hora, "Codehupy voices concern over State's reaction to protests", Última Hora, 7 May 2023, section - National, <https://www.ultimahora.com/codehupy-expresa-preocupacion-reaccion-del-estado-manifestaciones-n3061458>.

16 Made in Paraguay, "Evidence of irregularities submitted and request for annulment of general elections", 2023, <https://madeinparaguay.net/noticia/presentan-pruebas-de-irregularidades-y-piden-anular-elecciones-generales-1432>.

It is also important to stress that, unlike the reports of the observation missions published in 2021, these missions echoed a series of irregularities concerning the implementation of the electronic voting machines.

More specifically, the European Union Election Observation Mission Paraguay 2023, stated in its final observation report, that although the electoral administration carried out auditing exercises of the voting technology, in reality these were more detailed presentations to proxies of the political parties with technical knowledge of electoral technology than an actual audit of the system. The report also highlights that the TSJE did not address the concern of Cruzada Nacional regarding the audit of the voting machine software.¹⁷

The Observation Mission also highlighted that in 19% of the observed voting stations, there were violations to the provisions established in the regulations on assisted voting. The monitoring teams recorded cases where voters were assisted without presenting an evident disability (60 cases) or without having requested assistance (4 cases). Also, party observers assisted voters (21 cases), and one or more individuals systematically accompanied different voters to the voting booth (7 cases).¹⁸

On the other hand, and in a total shift regarding the testimonies compiled in its preliminary report of 2021, the Parlasur Observation Mission highlighted that the main opposition candidate (Efraín Alegre-PLRA) stated a lack of transparency in the software of the computer system used for the elections.¹⁹ In addition, the mission found situations in which voters seeking to access assisted voting accompanied by a trusted person, were met with confusion by the polling station authorities and the proxies of the political parties as to whether or not to accept this modality of assisted voting.²⁰

1.2. Seeking transparency in the electronic voting system

the significant growth of accusations of electoral fraud in the main political parties of the country, as well as the unusual and massive protests held in May 2023, strongly condemned electoral fraud by means of electronic voting machines, are a concerning and clear sign of the electoral institutional decay that is even more aggravated with the incorporation of technology in the voting stage.

For several years, TEDIC has been warning about the risks of the implementation of electronic voting machines, especially in politically biased contexts. Besides the specific arguments of the risk of the use of the machines and their clash with constitutional principles such as the public and supervised scrutiny, the main weakness of these systems is that they enable plausible discourses and arguments of electoral fraud.

17 European Union, "Election Observation Mission Paraguay", 2023, https://www.eeas.europa.eu/eom-paraguay-2023/european-union-election-observation-mission-paraguay-2023-presented-today-its-final-report-20_en?s=410304

18 European Union.

19 Mercosur Parliament. "Report of the International Election Observation Mission to the National and Departmental Elections of the Republic of Paraguay", 2023, <https://www.parlamentomercosur.org/innovaportal/file/21360/1/informe-de-la-mision-de-observacion-electoral-del-parlasur---elecciones-de-paraguay-2023.pdf>.

20 Mercosur Parliament.

Within a context of high political bias and growing disbelief towards the electronic voting system, it is more necessary than ever to continue gathering data from multiple spaces and groups. This will allow a better understanding of the positive and negative performance of electronic voting machines and will contribute to the formulation of evidence-based public policies.

Thus, this report summarizes the main findings of a survey on usability conducted in Asunción and Ciudad del Este during the 2023 presidential elections. These results are linked to other electoral observation reports conducted nationwide in the same year, revealing similar patterns in the implementation of electronic voting machines across the country.

2. METHODOLOGICAL

2.1. Survey design and development of the survey

The data-collection tool used in this report was based mostly on the usability survey of electronic voting machines used in the 2021 municipal elections in the city of Asunción.²¹

However, there were adjustments considering that data were also collected in Ciudad del Este. This decision reflected the efforts of the TEDIC organization to generate data outside of the capital of the country - also known as “the interior”- and to give a more complete picture of the interaction of voters with the electronic voting machines.

Such changes were mainly focused on the survey conducted in Ciudad del Este. This was because voters in the interior of the country not only chose candidates for the Presidency, Vice-Presidency and Chamber of Deputies and Senators, but also for the Departmental Board and the Governor’s Office.

The survey, for both cities, comprised six modules. It was designed based on the several steps listed by the TSJE itself for a proper voting and interaction with the electronic voting machine²². These modules are as follows:

- **Module A** - Identification of Respondents
- **Module B** - Advertising Effectiveness in Raising Awareness on the Use of Electronic Voting Machines
- **Module C** - Usability Issues
- **Module D** - Malfunctions documented by TSJE
- **Module E** - Issues of notice of ballot control by officials
- **Module F** - Perceptions and assessment of the electronic voting system

In addition, two training and survey review meetings were held with the surveyors who were responsible for collecting the data in Asunción and Ciudad del Este. These meetings served to validate the smooth flow of the survey and to ensure proper acquaintance with the data collection tool. The surveyors also provided their feedback on some questions, which allowed for slight adjustments to make the questions more understandable, bearing in mind the lessons learned in 2021.

21 Carrillo, Alcaraz, and García, “Survey on the use of electronic voting machines in the 2021 municipal elections”.

22 TSJE, “Voting machine simulator”, 2023, <https://simuladoroficial.tsje.gov.py/#>.

Regarding Module D, a similar approach to the design of the 2021 usability survey was adopted. Information was requested to the TSJE on the main failures documented by them and details on the operation of the machines.²³ This was carried out with the objective of obtaining a list of malfunctions of the electronic voting machines (both software and hardware) that had been documented by the TSJE during the 2022 internal party elections²⁴. The aim was to update the list of faults to be included in the survey. However, since the TSJE did not respond to this request, it was decided to use the same list of faults that had been identified in the 2021 usability survey.²⁵

Although the electoral authority did not respond to the request for access to public information, they agreed to take part in a face-to-face interview with the TEDIC team. In the meeting, the two data collection tools that were later applied in Asunción and Ciudad del Este were shared. The TSJE authorities confirmed their interest in accessing the results of the survey, although they did not provide specific feedback on each of the survey questions. Subsequently, a request for access to public information, made after the elections, did receive a response from the TSJE. The information from these responses is summarized in the main findings section.

2.2. Characteristics of the field work

The survey on the usability of electronic voting machines during the 2023 General Elections was carried out on April 30 in 20 schools in Asunción and 10 schools in Ciudad del Este, following the guidelines of the sample design (see data sheet). On the day of the survey, the field team was distributed as follows:

- Twenty pollsters in Asunción, at a rate of one pollster per selected location (20 schools).
- Twenty pollsters in Ciudad del Este, at a rate of two pollsters per selected location (10 schools).

Each pollster conducted between 20 and 22 surveys in the polling station assigned to them, fulfilling gender and age quotas, between 8:00 am and 3:30 pm. A questionnaire containing mostly closed-ended questions was used, which was developed by TEDIC and tested by VozData. Only one open-ended question was included in order to gather perceptions about the voters' experience using the electronic voting machines. The surveyors were properly identified and used digital questionnaires to collect data. Monitoring was carried out in person and online, verifying the accuracy of the information as it was uploaded to the database.

23 Carrillo, Alcaraz, and García, "Survey on the use of electronic voting machines in the 2021 municipal elections 2021".

24 TEDIC, "Inquiry No. 66868, 'Inquiry for access to public information on the operation of electronic voting machine'", 2023. <https://informacionpublica.paraguay.gov.py/portal/#!/ciudadano/solicitud/66868>.

25 Carrillo, Alcaraz, and García, "Survey on the use of electronic voting machines in the 2021 municipal elections 2021".

2.3. Technical data sheet²⁶

Title: Survey on the use of electronic ballot boxes on the day of the 2023 National Elections, in Asunción and Ciudad del Este.

Coverage: Population aged 18 years and older who voted in the 2023 national elections in the districts of Asunción and Ciudad del Este.

Frequency: On time (April 2023).

Units of analysis: Population 18 years of age and older who voted in the 2023 national elections in the districts of Asunción and Ciudad del Este.

Sampling frame²⁷: Polling places in the districts of Asunción and Ciudad del Este.

Type of design: Quasi-probabilistic two-stage stratified quasi-probabilistic with proportional allocation²⁸.

- **First stage:** Selection of polling places (Primary Sampling Unit- PSU)
 - ◆ *Sample domain Asunción:* The Primary Sampling Units (PSUs) were categorized according to the 6 major zones used by the TSJE to segment the population registered for voting in the District of Asunción. The PSUs to be selected (20 units, defined by logistical capacity) were distributed across zones on a proportional basis, in accordance with the number of eligible voters in each category. Within each group, PSUs were selected using the proportional systematic sampling technique, with the reference being the number of eligible voters as the variable.
 - ◆ *Ciudad del Este sampling domain:* The SSUs (20 units) were selected directly from the unified sampling framework, for which the systematic sampling technique proportional to size was applied, using the number of eligible voters as a reference variable.

²⁶ Sampling design: Sebastián Bruno.

²⁷ The sampling frame is the list containing all the sample units, representing the entire set from which individual units are selected.

²⁸ The sample is two-stage because it involves two stages of selection. In the first stage, polling places were selected, and in the second stage, individuals were selected. To qualify as probabilistic, all stages of sampling must involve a selection where all sample units have a known probability of being chosen. In this case, the first stage (locations) was probabilistic, but it was not feasible to apply this selection technique in the second stage. Only quotas for gender and age can be established, and interviewers select individuals on-site while adhering to these directives. In exit polls, this is the standard methodology.

- **Second stage:** Selection of participants (Secondary Sampling Units, SSU). Within each PSU, 20 individuals were selected based on a target criteria for gender (men, women) and age groups (18-34; 35-49; 50 years and older); considering the expected demographic distribution according to participation parameters by age in previous elections.

Sampling units: Polling places (Primary Sampling Unit) and Population 18 years of age and older eligible to vote (Secondary Sampling Unit).

Final sample size: Final sample size: During the fieldwork, 36 additional units were collected in addition to those initially planned, resulting in a final sample (n) of 836 people selected. This number was adjusted according to the budget of the project and was distributed between Asunción (425 people) and Ciudad del Este (411 people).

Design of expansion factors: The design of expansion factors considered the probability of selection of the PSU and the relationship between the population eligible to vote and the demographic goals defined for the SSU. The expansion factors were measured by taking as parameters the expected participation rate by demographic segment, and the highest level of education by demographic segment.

Theoretical sampling error²⁹: For a confidence interval of 95% and P=Q, the error for the sample domain of Asunción is ±4.75% and for Ciudad del Este is ±4.83%.

FIGURE 1. Gender and age distribution of respondents. General elections, 2023 (%)

Dist. Sexo - ASU		Dist. Edad - ASU		Dist. Sexo - CDE		Dist. Edad - CDE	
Mujer (53,1 %)	Hombre (49,9 %)	50 y + (36,5 %)	18-34 (33 %)	Mujer (50,2 %)	Hombre (49,8 %)	50 y + (36,5 %)	18-34 (33 %)
		35-49 (30,5 %)				35-49 (30,5 %)	

n ASU: 425 | n CDE: 411

G1. For statistical purposes, could you indicate your gender?

G2. How old were you on your last birthday?

29 Usually, and especially when the surveyor is the one who selects the individual to be surveyed, there is usually bias. Although in this case gender and age biases are controlled by using quotas, the sample was balanced by using an expansion factor according to the educational level variable. This was done so that the proportions of this sample would be similar to familiar educational parameters for this population (according to the Continuous Permanent Household Survey). The expansion adjusted for participation levels makes that with the weighted sample, the absolute values match the observed number of votes according to the TREP and it is assumed that the participation rate by sex and age in 2021 was similar to the one estimated by the TSJE in 2015.

3. MAIN FINDINGS

The methodological choice to continue with the same data collection tool used in the 2021 usability survey has enabled the identification of the progress and setbacks in the implementation of electronic voting machines. It also allowed the documentation differences and similarities in how voters in two cities across the country interact with the machines.

This report systematizes the data collected through the surveys conducted in Asunción and Ciudad del Este, establishing connections with data from other electoral reports conducted by civil society electoral observations in Paraguay³⁰ and responses from the TSJE. The objective is to amplify certain findings where possible. The following is a summary of the main findings³¹.

3.1. Module B

The source of information about the use of the voting machines in Asunción does not significantly change: 64.6% of voters in Asunción stated that they learned about the electronic voting machines through the media, a difference of ten percent in relation to the results of the 2021 survey.³² This source is even higher in Ciudad del Este, as 70.5% of voters learned about the voting machines through the media in that city. As can be seen in the graph, the difference is significant compared to other sources, such as the TSJE.

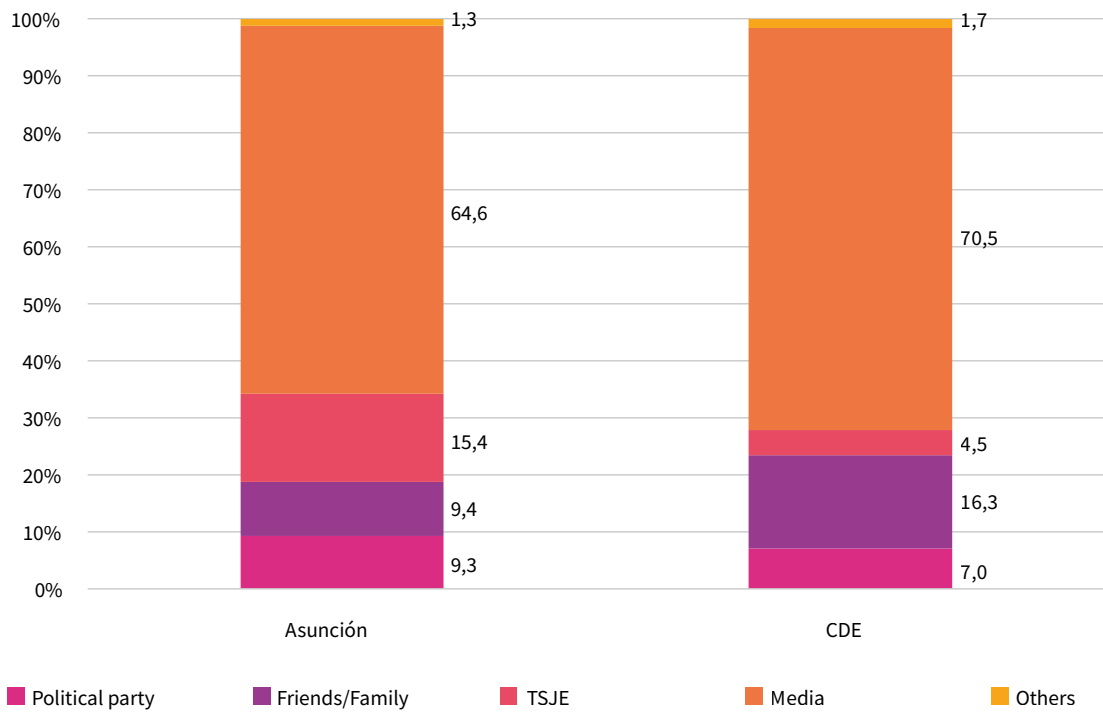
There is a difference in the channels or means of information used by voters to get information about the machines, especially in the age range between 18-34 years old. In Asunción, young people are significantly more informed about these issues on television (70.7%) vis a vis social networks (42.4%). In Ciudad del Este, the trend is the opposite: social networks (87.5%) vis a vis television (48.4%).

30 While acknowledging that the samples of such reports are different from those of this report, it is important to connect similar studies that seek to understand different practices of voters, political parties and the TSJE during elections.

31 To access all the data visualizations based on the answers to the survey questions applied in Asunción and Ciudad del Este, click here: INSERTAR CUANDO TENGAMOS EL INFORME DIAGRAMADO DE HORACIO COMPLETO SUBIDO EN LA WEB COMO ANEXO

32 Carrillo, Alcaraz, and García, “Survey on the use of electronic voting machines in the 2021 municipal elections”.

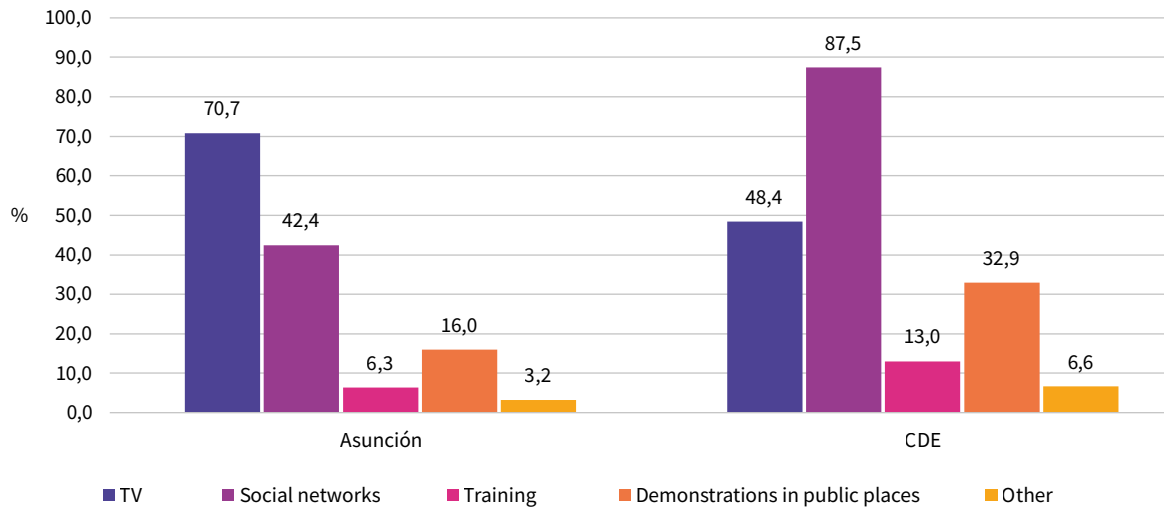
FIGURE 2. Source of information on the use of electronic machines in general elections, 2023 (%)



n ASU: 410 | *n* CDE: 391

B2. Primarily, how did you find out that electronic voting machines were going to be used in these elections?

FIGURE 3. Media on the use of electronic machines in the general elections, 2023 (%) Age range 18-34

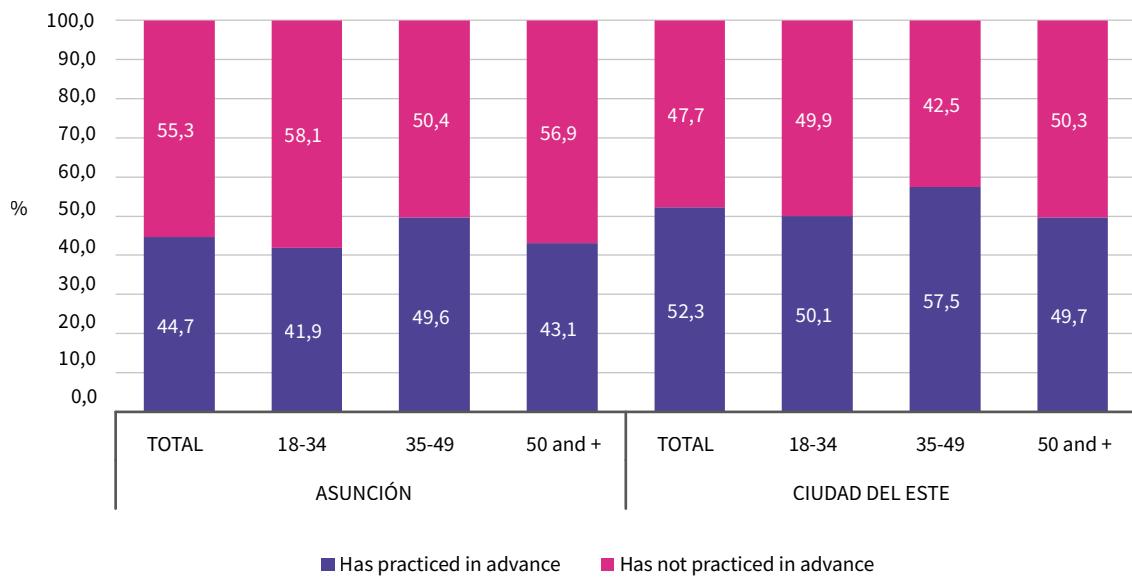


n ASU: 410 | *n* CDE: 391

B3. Through which channel or media did you receive this information?

On the other hand, voters in Ciudad de Este (52.3%) practiced using machines before voting compared to voters in Asunción (44.7%). Both cities had similar behavior regarding the type of tool used to practice with the machines. As shown in Figure 5, voters in Ciudad del Este (61.2%) and Asunción (58.8%) practiced with digital simulators and to a much lesser extent with a test machine in a public place.

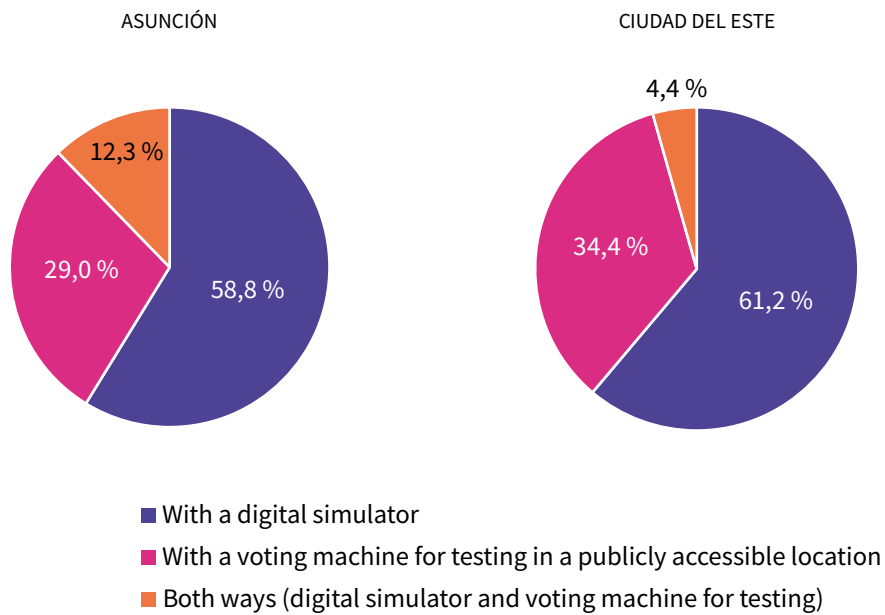
FIGURE 4. Voters who practiced with electronic machines before election day, by age group. Asunción, 2023 (%)



n ASU: 425 | n CDE: 411

B3.a. Before today, have you ever practiced using electronic voting machines?

FIGURE 5. How did you practice voting before the election, by gender and age. General elections, 2023 (%)



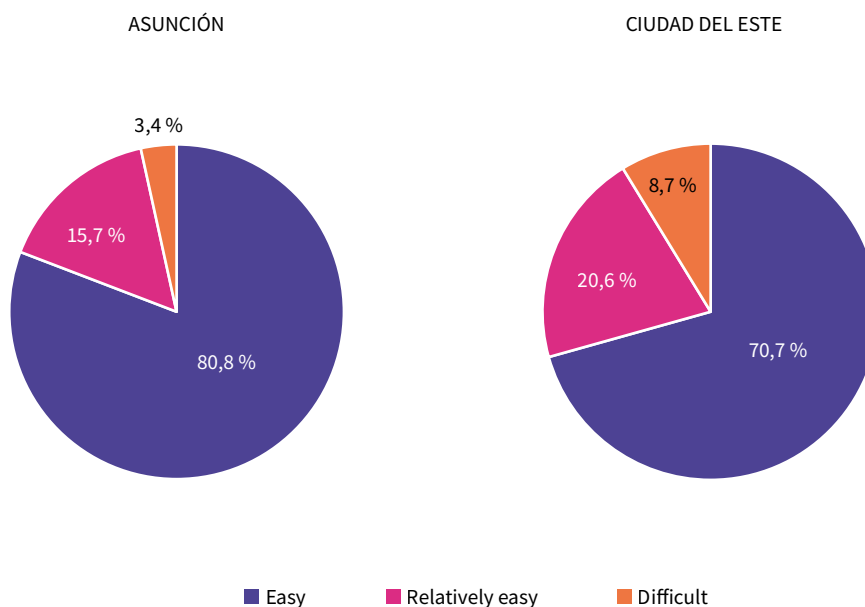
n ASU: 425 | n CDE: 411

B4. How did you practice?

3.2. Module C

Regarding how voters interacted with the machines in general (hardware and software), voters in Asunción and Ciudad del Este reported different levels of ease or difficulty in interacting with the machines and finding their preferred candidates. In Asunción, 80.8% of voters stated that the interface was simple and allowed them to easily find their preferred candidates. In Ciudad del Este, voters indicated this ease with ten % less. This difference could be due to the fact that outside the capital of the country, there are many more lists and candidates to choose from.

FIGURE 6. How easy it was to find the candidate on the screens of the voting machines. General elections, 2023 (%)

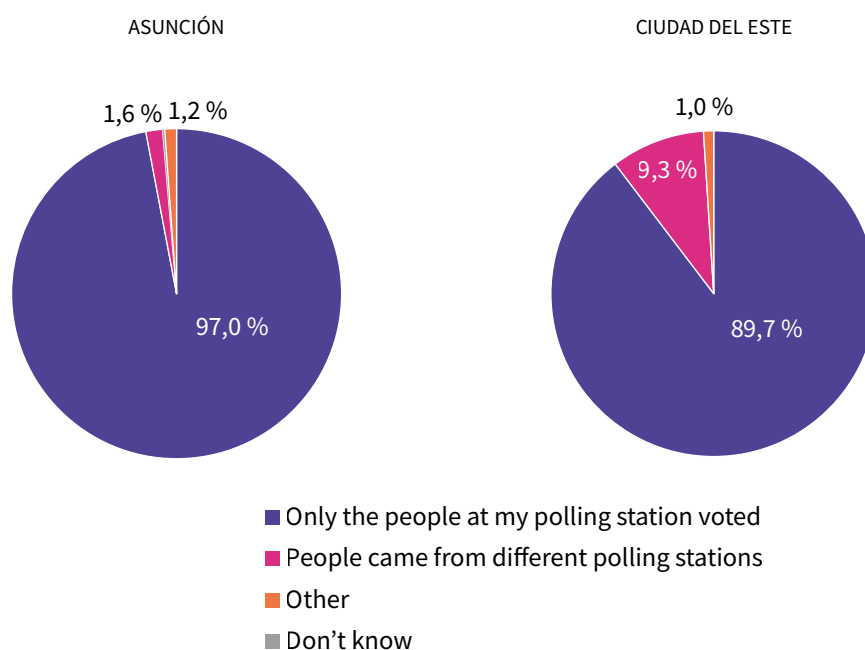


n ASU: 425 | n CDE: 411

C2. Considering the screen layout, how easy was it for you to find your preferred candidate?

On the other hand, and as shown in Figure 7, it can be asserted that there was a difference in the numeric display of electronic voting machines in Asunción and Ciudad del Este. While 97% of voters in the former stated that they had an exclusive machine for voting at their polling station, 89.7% of voters in the latter stated the same.

FIGURE 7. Polling stations with exclusive voting machine according to voter testimony. General Elections, 2023 (%)



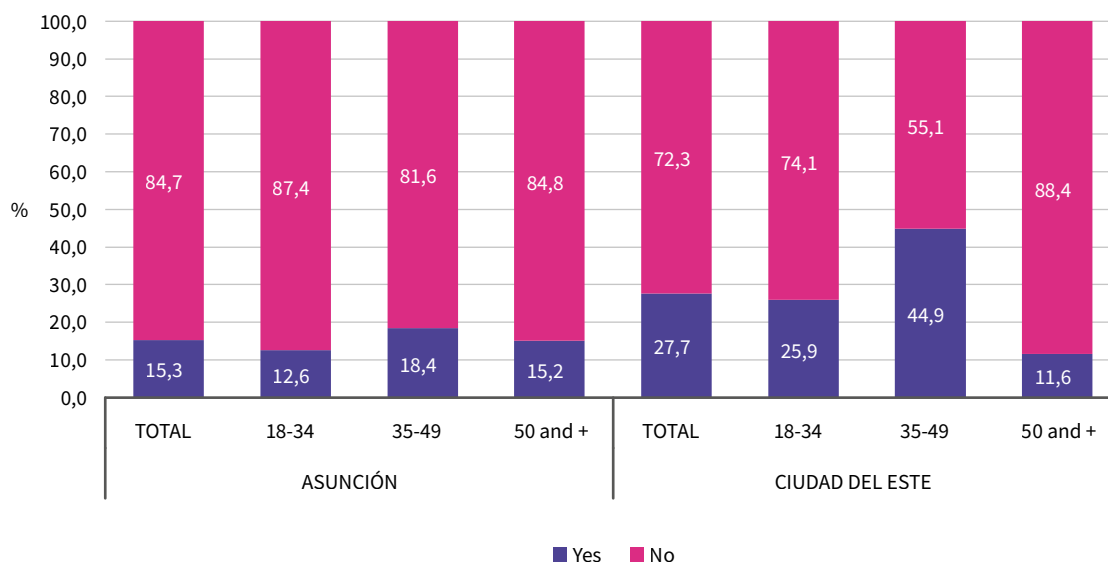
n ASU: 425 | *n* CDE: 411

C1. Thinking back to the time of voting, was there a dedicated voting machine for your polling station?

3.3. Module D

An important fact is that there were high percentages of voters who reported problems at the time of voting, both in Asunción (15.3%) and in Ciudad del Este (27.7%). Most of these problems involved hardware failures. However, it seems that, in general, these problems were solved by the electoral authority, as can be seen below.

FIGURE 8. People who experienced some type of problem at the time of voting, by age group. General elections, 2023 (%)



n ASU: 425 | n CDE: 411

D1. Did you experience any of the following problems?

For both cities, and analyzing the results by age group, voters between 35 and 49 years of age had the majority of problems, both in Asunción (18.4%) and in Ciudad del Este (44.9%). However, it is important to point out that these cases are proportionally low in relation to the total sample. Moreover, in all of them, the voters indicated that the malfunctions were solved.

The main types of malfunctions documented coincide in both Asunción and Ciudad del Este: failures of the machine that did not hold the ballot paper, causing it to get loose or jammed, as well as screen failures where one option was clicked to move to the next one and no change was made.

The above follows a response provided by the TSJE in a request for public information from TEDIC. Out of a total of 15,513 electronic voting machines distributed nationwide, the electoral authority documented a total of 227 machines with failures in the April 29 test and during Election Day, 90 of these were recovered during Election Day.³³ In a table provided by the TSJE in its response, it can be observed that almost all of the failures apparently have to do with hardware issues.

Voting Machine failures ³⁴	Total of Voting Machine that failed on April 29 and 30	Percentage of Voting Machine with failures on April 29 and 30 out of total number of failed machines	Percentage of Voting Machines with failures out of total machines installed
Printers fail	63	27,750	0,406
The screen turns black, gray, green, or striped.	31	13,660	0,200
LILA box appears “Disc reader not available”.	20	8,810	0,129
Calibration fails	15	6,610	0,097
RFID reader fails	11	4,850	0,071
BIOS screen appears	10	4,410	0,064
Voting Machine freezes, will not shut down	9	3,960	0,058
Voting Machine does not charge the battery	6	2,640	0,039
DVD stays in and does not exit	5	2,200	0,032
Software failures	0	0	0
Total hardware failures	170	74,889	1,096

Table based on the information provided by the TSJE in the request for access to public information.³⁵

Moreover, it is important to highlight that the TSJE mentioned in its response that all machine problems and/or failures are registered in the CIME (Electoral Information and Monitoring Center) system by the CIME operators, detailing the machine serial number, the problem and the solution (in the case of voting machine recovery).³⁶

33 TEDIC, Inquiry No. 74870 ‘Inquiry on electronic voting machines operation for General Elections 2023, <https://informacionpublica.paraguay.gov.py/portal/#!/ciudadano/solicitud/74870>.

34 Voting machines

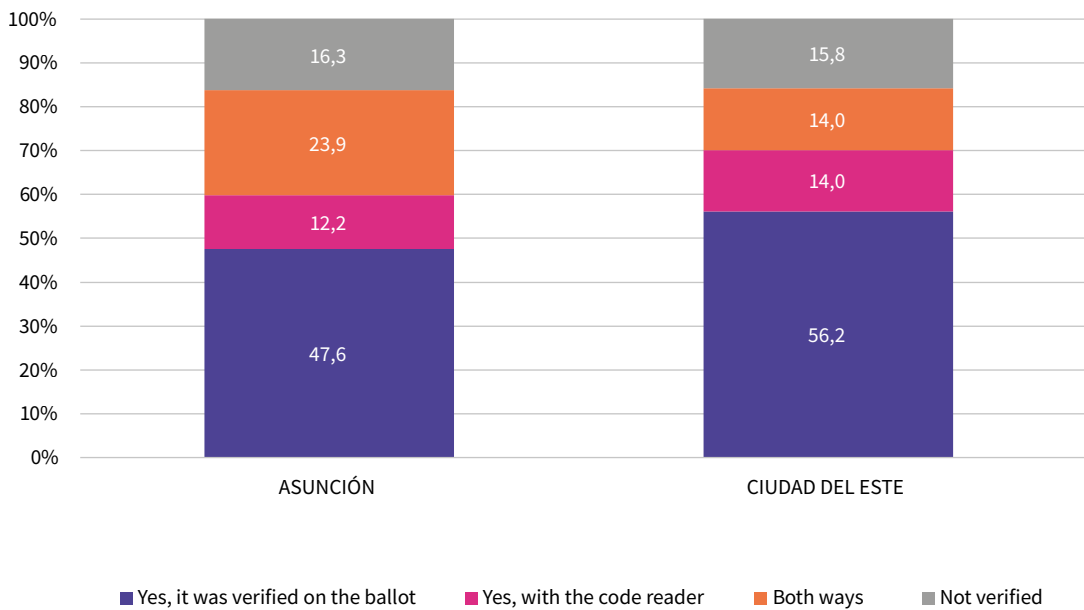
35 TEDIC, Inquiry No. 74870 ‘Inquiry on electronic voting machines operation general elections 2023’.

36 TEDIC.

A worrisome fact that even worsens in relation to the 2021 survey is the way in which voters control their voting behavior.

The TSJE clearly states that the proper way to control the expression of the vote is through visual verification and with the RFID chip inserted in the ballot (a crucial step since such technology allows a near automated counting in the scrutiny phase). However, in both Asunción (23.9%) and Ciudad del Este (14%) there is a low level of dual and effective control of the voting process. It should be noted that the effectiveness with which voters in Asunción correctly control their ballot has decreased, as in 2021 a percentage of 31.3% of effective dual control was documented.³⁷

FIGURE 9. How people verified their vote. General elections, 2023 (%)



n ASU: 425 | n CDE: 411

C6. Did you verify your vote in any way?

A striking difference in relation to the 2021 report is the apparent decrease in the number of people who enter the voting booth to vote accompanied.³⁸ The 2021 report showed worrying numbers of people voting in Asunción (15.8%) who declared that they were accompanied into the booth without apparent disability and claiming the accessible voting regulations. An Electoral Observation report of the organization Alma Cívica was in a similar line, pointing out that in the 2021 municipal elections the secret vote was not guaranteed, since auditors of said organization reported cases of being accompanied by the same person in the voting booth, a situation that occurred in 206 polling centers, representing 24% of the sample.³⁹

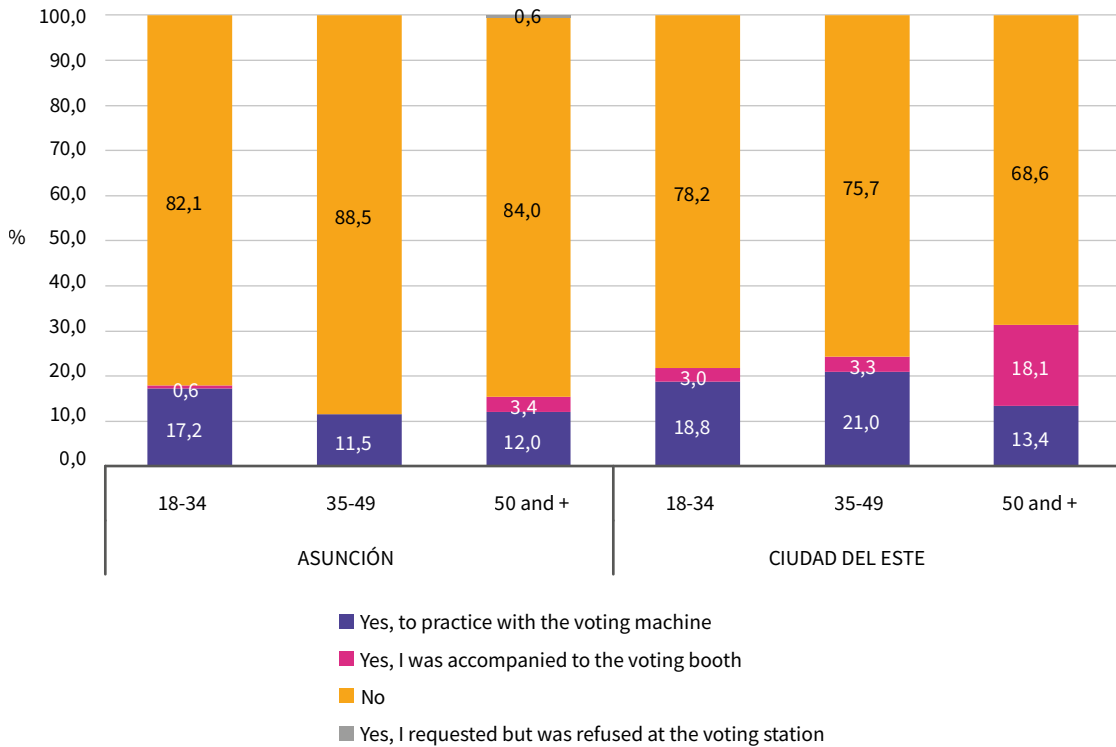
37 Carrillo, Alcaraz, and García. “Survey on the use of electronic voting machines in the 2021 municipal elections”.

38 Paraguayan legislation is clear in explicitly limiting certain types of disability as the only grounds for accompanied entry into the voting booth.

39 Alma Cívica, “National Election Observation Mission Report”, 2022, <https://observacionelectoral.almacivica.org/>.

For these elections, the numbers have dropped significantly for the total number of voters in Asunción (1.5%). In Ciudad del Este, there is a substantial number of voters who still reported going to the polling booth accompanied (7.4%). As shown in Figure 10, and analyzing the data by age group, the highest percentage of adults aged 50 and over who declare that they enter the voting booth accompanied is observed in both Asunción (3.4%) and Ciudad del Este (18.1%).

FIGURE 10. Voters who requested accessible or assisted voting, by gender and age. General elections, 2023 (%)



n ASU: 425 | n CDE: 411
 C11. Did you request the accessible or assisted voting option to vote?

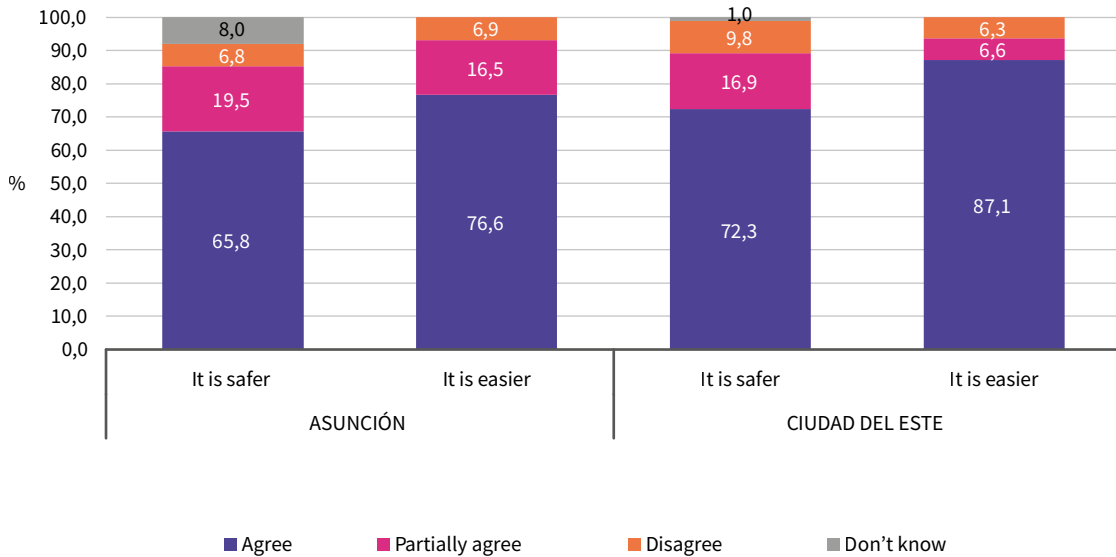
The Saka⁴⁰ Observation Mission also noted similar numbers of voters who were not physically or visually impaired and were similarly accompanied into the voting booth. Specifically, they observed in their sample that 5.8% of voters with no apparent disability were accompanied into the voting booth.⁴¹

40 The sample consisted of 90 districts, 383 polling stations and 1514 polling stations.

41 Decidamos, “SAKÁ Citizen Election Observation Report”, Decidamos (blog), 2023, <https://www.decidamos.org.py/2023/materiales-educativos/informe-de-la-observacion-electoral-ciudadana-saka/>.

Finally, voters in both cities expressed a high degree of agreement with expressions such as “electronic voting is safer and easier”, as can be seen in Figure 11. On the other hand, 9.8% of the total number of voters in Ciudad del Este expressed disagreement with such statements.

FIGURE 11. Percentage of agreement regarding positive statements about electronic voting. General elections, 2023 (%)



n ASU: 425 | n CDE: 411

Do you agree with the following statements?

C13.a. It is easier to vote with the voting machine.

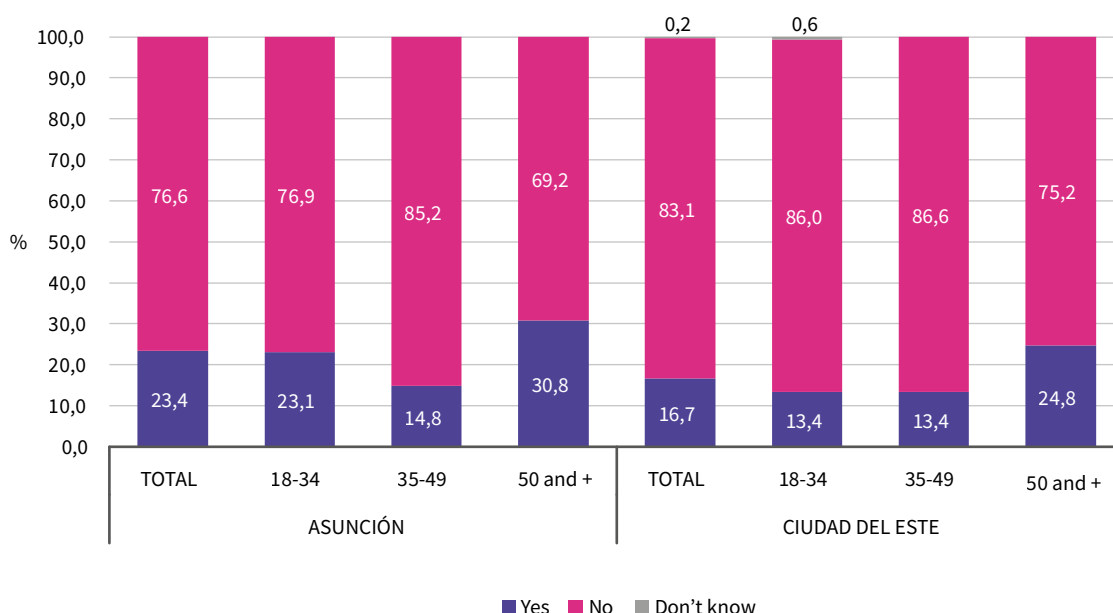
C13.d. Electronic voting is more secure than voting with ballot papers

3.4. Module E

Regarding whether polling station members informed voters about the importance of controlling their ballot visually and through the RFID chip verification, Figure 12 illustrates that only 23.4% of voters in Asunción and 16.7% in Ciudad Este said that their polling station members reminded them about the importance of this double control. Figure 12 shows that only 23.4% of voters in Asunción and 16.7% in Ciudad del Este said that their table members reminded them about the importance of this double control.

This is a setback in relation to the 2021 survey, since in that report, the percentage of voters in Asunción who declared this type of notice was 30.1%. This is an important measure that may alleviate the poor levels of double control by the TSJE and should be considered by electoral authorities in a future election.

FIGURE 12. Voters who were informed by table members about the importance of passing the ballot paper through the RFID reader for verification, by age. General elections, 2023 (%)



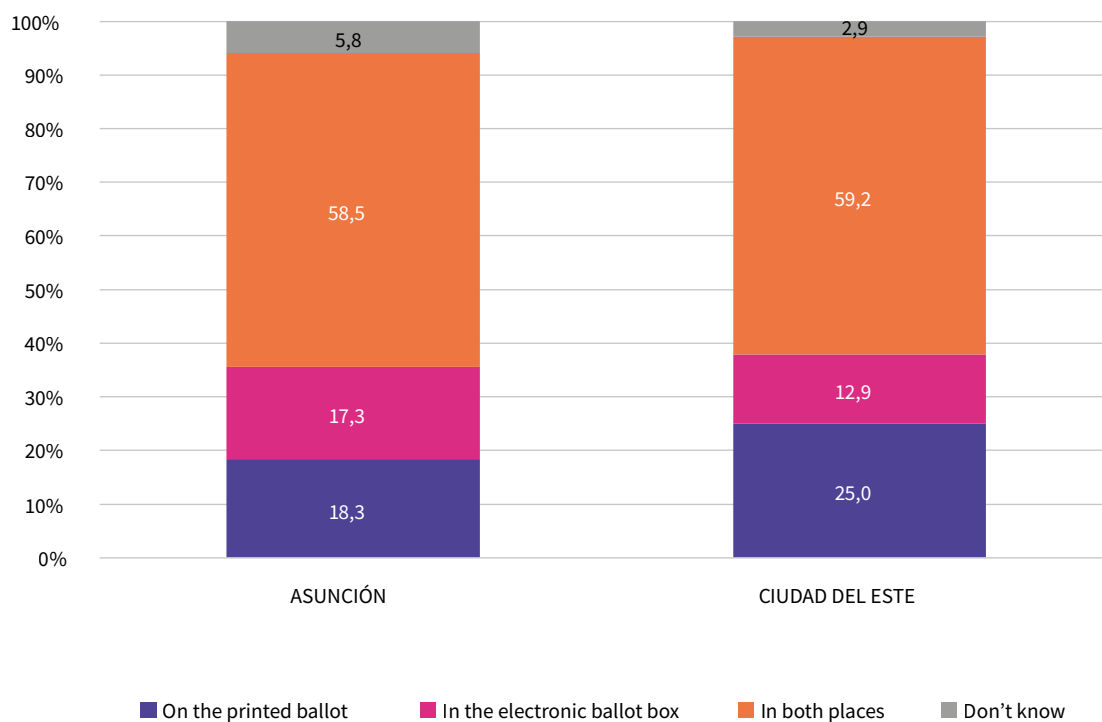
n ASU: 425 | n CDE: 411

E1. When you showed your ID card at your polling station, did the president or the members of the polling station tell you that it was important for you to pass the ballot paper through the chip reader at the end of the voting process, to verify if it matched with your choices?

3.5. Module F

An important matter that can be observed again is the inconsistency between how the TSJE explains how the system works and how people understand it. The electoral authority is explicit in affirming that the voting machines do not have any capacity to store information on the voting of voters. However, as shown in Figure 13, both in Ciudad del Este (59.2%) and in Asunción (58.5%), voters consider that the vote is stored in the electronic voting machine.

FIGURE 13. Perceptions about where the vote is recorded when using the voting machine. General elections, 2023 (%)



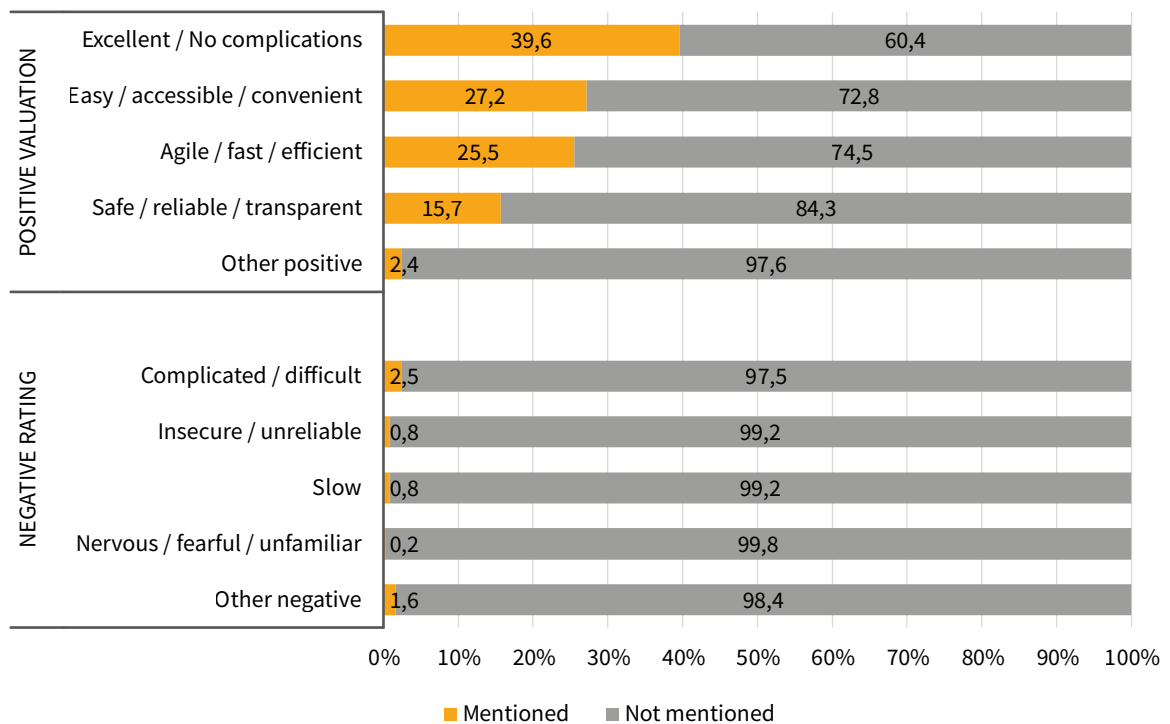
n ASU: 425 | n CDE: 411

F1. Where do you think your vote is registered or recorded?

Finally, regarding the open-ended question previously described in the methodological framework, the positive ratings are again much higher than the negative ones for both cities. This is the same as in the 2021 survey. Opinions such as excellent, uncomplicated, easy and accessible appear in similar percentages in both Asunción and Ciudad del Este, as can be seen in the graphs below.

Likewise, it should be noted again, as in the 2021 survey, that positive evaluations such as “safe” and “reliable”, although they appear, are considerably lower in relation to the evaluations of “easy” and “uncomplicated”.

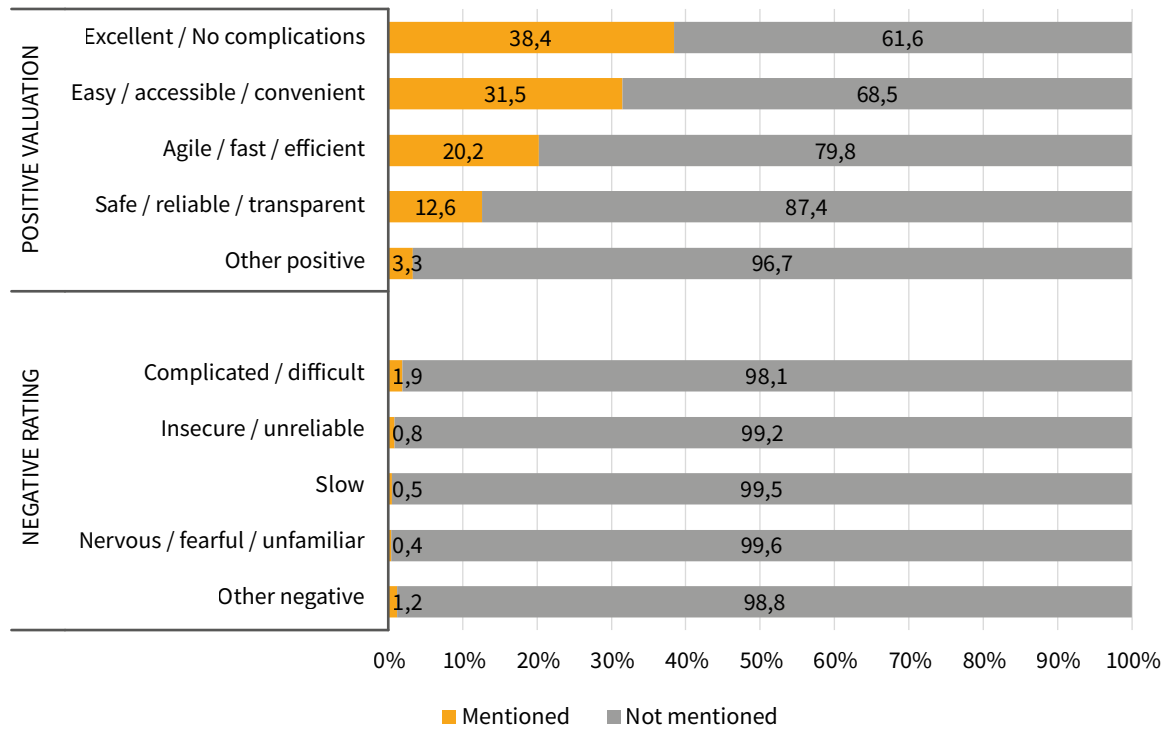
FIGURE 14. Perceptions and evaluations of the use of the electronic voting machine (Systematized open-ended question) (Multiple responses). ASU, 2023 (%)



n: 366

F3. [OPEN QUESTION] - In general, how did you feel when you used the electronic voting machine?

FIGURE 15. Perceptions and evaluations of the use of the electronic voting machine (Systematized open-ended question) (Multiple responses). CDE, 2023 (%)



n: 356

F3. [OPEN QUESTION] - In general, how did you feel when you used the electronic voting machine?

4. CONCLUSION

The implementation of electronic voting has suffered a significant setback in the last presidential elections. The claims of fraud by various political groups confirm the hypothesis previously mentioned, which states that the most important risk of the implementation of this type of system in the voting stage is the possibility of using it as a plausible excuse for fraud narratives in highly politically biased contexts.

In that sense, and despite the end of the protests demanding new elections, it is reasonable to argue that in the next election, similar claims may arise. This could continue to happen if certain practices surrounding the implementation of electronic voting machines do not change. Specifically, the TSJE ought to design a participatory and open process for conducting a real audit of the electronic voting machines, in each election cycle, and ensure that universities, interested technical community, political parties, private sector and civil society can effectively review these systems in a collaborative manner and proactively identify any vulnerabilities.

This being said, the present report reiterates a number of troubling trends in the way in which electronic voting machines are implemented. Such trends are even evident in other similar observational reports from civil society. Although they differ in terms of their sample sizes and methodologies, they reveal similar data.

A negative trend is observed with much concern and on basic issues that can be addressed by the TSJE once they take notice of them. Specifically, the high percentage of voters who only visually check their ballots and do not use RFID chip functionality is particularly alarming. It is possible to argue that this is directly related to the fact that a high percentage of voters in Asunción and Ciudad de Este still state that their polling station authorities do not warn them about the double control necessary for efficient ballot control.

On the other hand, it is important to applaud the positive evolution and the low percentages of voters in Asunción who declared that they were accompanied into the voting booth, which may suggest a greater awareness on the part of the polling station authorities. Such a situation, however, should not be minimized, and it is important that the TSJE works hard to mitigate this type of scenario.

The above contrasts with the high percentages already seen in Ciudad del Este of voters who reported entering the voting booth accompanied and an upward trend of accompanied and more senior voters entering the voting booth. The particularly high percentage in Ciudad del Este for voters aged 50 and over points to an urgent need to continue to address this issue, and to guarantee the secrecy of the vote for different age groups.

It is also important to reflect critically on the fact that voters in Asunción and Ciudad del Este have a different interpretation of the voting system than the one explained by the TSJE. Specifically, the high percentages of voters who consider that their vote expression is stored within the electronic voting machines and beyond the printed ballots, and despite the explanation of the TSJE, raises a number of questions about the current level of understanding of voters about how this voting system works. Beyond this understanding, ensuring a public and supervised vote count without people's full understanding of the system is, to say the least, a significant challenge.

On the other hand, it is also important to celebrate a greater focus on national and international electoral observation missions on the issue of electronic voting machines. In this sense, it is crucial to continue refining the different ways in which these missions approach this topic and to exchange approaches and methods to collect similar information and expand the findings. An appealing way of increasing the transparency of the operation of the machines could be through access to information collected by the TSJE's CIME system (Electoral Information and Monitoring Center) by the observation missions, and in this way, the missions could tune in real time the way in which information related to the machines and their possible failures and solutions is collected.

This poses a series of actions to be adopted by the TSJE, to mitigate the problems that have been identified and to strengthen those issues that do work. Considering the upcoming municipal elections, it is urgent for the TSJE to:

- Develop policies and guidelines for polling station members and authorities so that there is no doubt about the current assisted voting regulations. Such policies must address those who may request to be accompanied by a trusted person into the voting booth.
- Create specific policies aimed at guaranteeing that the elderly can vote safely and exercise their right to the secrecy of the ballot.
- Disseminate a communications campaign for various audiences outside of election periods, so that people can understand the different steps of voting on electronic voting machines, with particular emphasis on pointing out the necessary double control (visual + RFID chip) of the expression of the vote.
- Instruct parties and polling station members to guide voters on the necessary double check in the voting booth and serve as additional backup support for voters from all over the country. This should be complemented by notices in the voting booth, on the voting screens and on printed posters displayed on the polling stations' walls.
- Actively disclose the data obtained in the CIME system, in order to alert various key players about the real-time operation of the electronic voting machines, as well as the responses provided by the TSJE, so that the largest possible number of people can access information and understand how the electronic voting machines work on election day.

4.1. Limitations

Although the research gathered a series of important data based on direct questions to voters, the findings of the research could be strengthened by an additional source of data collection through election observers who follow the same parameters collected in the survey. This will allow contrasting the responses of the voters with the notes of these observers.

Additionally, although there was a significant effort to collect data in the capital of the country and a city outside of the capital to contrast data, future research could focus on rural areas to contrast the findings and behaviors of voters. In this way, an even more comprehensive coverage could be achieved on the subject.

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