

# Turnout in e-voting pilots in the 2021 presidential elections in Ecuador

Régis Dandoy<sup>1</sup>[0000-0003-3593-0024]

<sup>1</sup> Universidad San Francisco de Quito, Ecuador  
rdandoy@usfq.edu.ec

**Abstract.** Based on a quasi-experimental design of the 2021 Ecuadorian presidential elections, I investigate the effect of postal voting, on-site electronic voting (DRE voting) and Internet voting on non-resident citizens' effective voter turnout. This short paper shows that, while DRE voting has no significant impact on turnout, turnout among non-resident citizens using Internet voting and postal voting is significantly higher compared to neighboring electoral districts.

**Keywords:** E-voting, Internet voting, Turnout, Ecuador

## 1 Introduction

In preparation of the 2021 elections in Ecuador, the electoral management body decided to run pilots testing different voting modalities for Ecuadorian voters living abroad. In these pilots, three different voting modalities were tested in three overseas electoral districts: postal voting (Ottawa district), on-site electronic voting / DRE voting (Buenos Aires district) and Internet voting (Phoenix district). In all other overseas electoral districts, non-resident voters cast their votes in-person in consulates and other diplomatic venues. In the form of a quasi-natural experiment, these pilots constituted a unique opportunity to investigate the impact of different voting modalities on the decision of some voters to participate in elections. This paper explores the impact of postal voting, DRE voting and Internet voting on turnout for voters living abroad in an overlooked country (Ecuador) at the occasion of the two rounds of the 2021 presidential elections and to contribute to the burgeoning literature on the consequences of different e-voting modalities for voter's behavior. In particular, recent scholarly works have empirically investigated turnout among non-resident voters using Internet voting, yet mostly in Western countries [1-3].

## 2 E-voting and effective turnout in Ecuador

Compared to traditional measures of turnout, my operationalization of effective turnout takes into account the invalid votes (i.e., the blank and null votes) in the calculation of turnout. It is measured as the number of valid votes divided by the total number of registered voters. The analysis of effective turnout is particularly relevant

in the case of Ecuador as DRE and Internet voting systems provide the voter with two additional options: two buttons are available on the screen – usually at the bottom of the list of parties or candidates – allowing the voter to express a blank or a null vote instead of a vote for a specific party or candidate. Moreover, the share of null and/or blank vote is traditionally high in Ecuadorian elections, usually around 10% for the presidential elections.

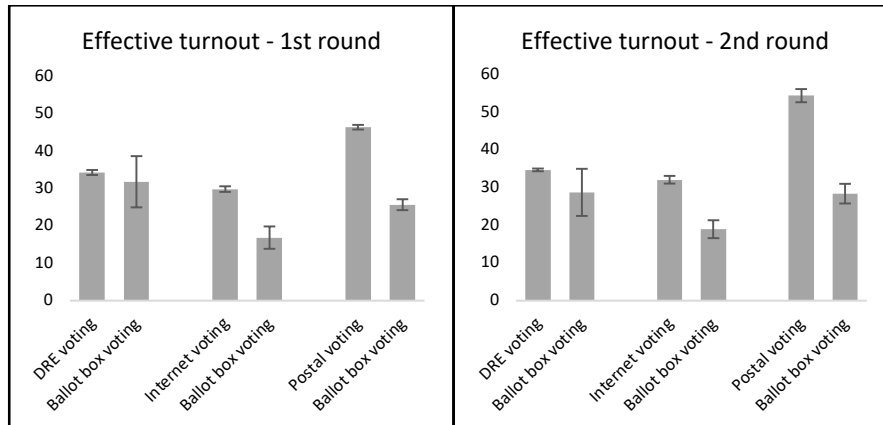
Based on the analysis of turnout figures for the two rounds of presidential elections in Ecuador (7 February and 11 April 2021), I compare the measure of effective turnout across four different types of ballots: paper ballots emitted in-person in the consulate building (i.e., ballot box votes), postal paper ballots (i.e., postal votes), electronic ballots filled in-person in the consulate building (i.e., DRE votes) and internet-based ballots (i.e., Internet votes). I include in the analyses the three electoral districts where pilots have been running by the Ecuadorian electoral management body and the two geographically closest electoral districts using ballot box voting. For instance, the Phoenix district (Internet voting) is compared with the Houston and Los Angeles districts (ballot box voting). This geographical proximity allows to limit the socio-demographic variation of the characteristics of the electorate in various abroad districts and to control for the potentially differentiated impact of the Covid-19 situation on voter mobilization. Data originates from official elections results [4] and figures are based on average turnout in both gender groups.

I observe that the introduction of alternative modalities of voting affected turnout figures compared to neighboring districts (see Fig. 1 and 2). In the electoral district where DRE voting was used, the average effective turnout for the presidential elections is slightly higher than in neighboring districts using ballot box voting. Differences are within the margin of standard errors, meaning that there are no significant differences in turnout between districts using DRE voting and districts using ballot box voting. This finding is in line with global South scholars that found no statistically significant effect of DRE voting on turnout in Brazil and in India [5-6].

Contrary to DRE voting, the impact of Internet voting on turnout is significantly more important and positive. On average, effective turnout is higher by 13% in the electoral district using Internet voting compared to neighboring districts using ballot box voting. It therefore seems that Internet voting has a significant and positive impact on turnout in this electoral district located abroad, confirming previous studies on non-resident voters in the USA and Switzerland [1-2]. Finally, postal voting has a similar positive impact on turnout as the electoral district implementing this voting modality displays an effective turnout more than 20% superior to turnout in neighboring districts based on ballot box voting.

The Covid-19 pandemic placed elections in many countries between a rock and a hard place, and election officials worldwide have been considering the implementation of alternative methods of voting. By demonstrating that turnout among Ecuadorian non-residents using remote voting (i.e., postal and Internet voting) is significantly higher than turnout among those casting their votes in the polling stations, this short paper provides an argument for election officials that envisage additional voting modalities for non-resident voters in future elections.

**Fig. 1 and 2.** Average effective turnout per voting modality in the 2021 elections in Ecuador



## References

1. Fowler, A.: Promises and perils of mobile voting. *Election Law Journal* 19(3), 418–431(2020).
2. Germann, M.: Internet voting increases expatriate voter turnout. *Government Information Quarterly* (published online) (2021).
3. Dandoy, R., Kernalegenn, T.: Internet Voting from Abroad: Exploring turnout in the 2014 French consular elections, *French Politics* (published online) (2021).
4. National Electoral Council (CNE) webpage, <https://app01.cne.gob.ec/Resultados2021>.
5. Fujiwara, T.: Voting Technology, Political Responsiveness, and Infant Health: Evidence from Brazil. *Econometrica* 83(2), 423–464 (2015).
6. Desai, Z., Lee, A.: Technology and protest: the political effects of electronic voting in India, *Political Science Research and Methods* 9(2), 398–413 (2021).