

Statistics and Democracy in Mexico

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- Introduction

For almost 70 years (1929-1994) the Presidential elections in Mexico were won by the political party currently known as Partido Revolucionario Institucional (PRI). Any opposition was essentially annihilated using a variety of means which included physical violence, all kind of threats, and many forms of bribery. This regime evolved over the years and in the 70's, mostly due to the action of many civil organizations, the government decided to allow the real existence of other political parties. As a consequence, a small number of associations were able to participate in the electoral processes, although only in a marginal fashion since all aspects were under strict control of the government. Slowly, and again thanks to different civil movements, Mexico finally changed to a system which, nowadays, resembles its counterparts in many democratic countries. Now, the elections are organized by the Instituto Federal Electoral (IFE), an autonomous body with a Board of Directors appointed by the House of Representatives among a list of candidates that must show independence from any political party and any government office, thus called "Consejeros Ciudadanos".

- The Challenge of the IFE

The IFE is in charge of handling the National Voter Register; it also has to recruit and instruct, every three years, one million citizens who collaborate as officers in the polling stations. In addition, it must provide public funds and audit the financial reports of the parties and supervise the campaigns.

Finally, it must collect and count the votes and announce the results of the election. It must be said that the IFE also acts as a referee among the parties and can impose sanctions if anyone of them breaks an electoral rule.

As a consequence of the the long period of time where there was no real electoral competition, an atmosphere of great distrust still remains among parties and large sectors of the citizenship. Thus, one of the main concerns of the IFE has been not only to organize the elections with efficiency but to increase the sense of confidence on the whole electoral process. To this purpose, a number of mechanisms have been developed to make elections highly credible. For example, the voting ballots are produced with security elements that make counterfeit almost impossible. Moreover, the officers in every polling station have a list of the citizens that can vote there. To this end, an updated catalog of nearly 80 million citizens (including name, address, photograph and fingerprints) must be available. This National Voter Register is at the center of many disputes among parties since they claim that the IFE might be using this instrument to act in favour of one of the contenders (eliminating from the list some citizens that might vote against him/her, for example). Other issue is the announcement of the results. Federal elections always take place in Sunday. Once a polling station is closed, votes are counted by the citizens in charge of the station, the results are recorded in a certificate and a copy of this document is posted outside the station. Then, the President of the polling station takes the certificate to the corresponding electoral constituency office. The following Wednesday officials on each constituency (there are 300 of them over the country) accumulate the votes received from their polling stations and, by next Sunday, they inform the IFE about the election results. Finally, the IFE makes public the national results. Thus, seven days must elapse after the election day to get official results of the process. In the past, early and mostly unjustified victory claims have provoked a great deal of stress and uncertainty with the corresponding erosion to the democratic culture. As an institutional strategy to deal with this controversial issues, the IFE has decided to involve specialists from different academic institutions which act both, as experts in a number of fields and independent citizens, to evaluate its work and to propose procedures to increase the confidence on the electoral process. In particular, there are two Technical Committees where Statistics play a major role. The first evaluates the quality of the National Voter Register, and the second designs and operates a quick count the day of the election.

- The National Voter Register

The population than can vote is changing permanently. Some citizens cannot longer vote (because they die or lose their civil rights), and many young people reach the age when they become new voters. Thus, the idea of a 100% perfect Voter Register is just an illusion. In any case, the IFE must prove that the coverage and accuracy of the register are reasonable. Evidence of this condition is obtained through sample surveys whose results are compared with the statistics in other countries. More complicated, the coverage should not be biased towards any particular contender.

In order to certify that the register meets this requirements, the IFE relies on a thechnical committee. Their members are first nominated and once all parties agree that they are not only well-known scientists but also independent citizens, they are appointed to the IFE Voter Register Technical Committee. The Statisticians in this committee audit the methodology as well as the recollection and processing of the data of the sample surveys that the IFE uses to estimate the coverage and accuracy of the register. In addition, they conduct special studies comparing the statistics of the register with those of other population measurements, as for example, the censuses. They might also investigate any pattern in the register which suggest a possible bias. In any case, on the basis of the final report of the Committe (which usually also includes Demographers, Geographers and Computer scientists), the Board of Directors of the IFE legally declares that the National Voter Register is a valid instrument to proceed with the election. The relevance of the committee report is huge. A negative opinion might imply the impossibility of organizing the election as ordered by the law.

- The Quick Count

Since 2000, the IFE has organized a quick count to get estimated results the very night of the election. This statistical exercise faces the usual challenges for this kind of study along with some other, more specific, risks. In particular, one aspect that cannot be overemphasized is that while the sponsors of other quick counts can take the risk of announcing a false winner, this is simply unthinkable in the case of the IFE. A mistaken announcement of the IFE might destroy the confidence on the electoral authorities. Given the critical role of its quick count, the IFE has decided not to hire an external

firm to produce this study. Not only it is considered a matter of national security, but also the IFE nationwide structure is able to collect and transmit the sample information in a faster and more secure way than a private company. As in the case of the Voter Register, the methodological support for the IFE quick count is in charge of a technical committee. Again, the members (all Statisticians) are nominated and only after the parties accept that they are well recognized scientists and independent citizens, they are appointed to the IFE Quick Count Technical Committee. This group decides on the sampling scheme and the sample size, verifies the systems used to collect the information from the polling stations and operates the statistical methods that produce the desired estimations. In the latest elections (2006 and 2012), a stratified design was used where each one of the 300 constituencies is divided into its urban and not urban component. The sample size has been fixed around 7600 polling stations. This figure can be compared with the usual 1000-1500 polling stations included in most private quick counts. As a measure of robustness, the Committee uses three different methods to estimate the final results of the election and their convergence is used as a cross-validation mechanism. Among the many technical challenges of this quick count it must be noticed that even for the IFE personnel, data from the polling stations in the sample is only available after the the votes of the different simultaneous elections have been counted (every time we have a President election we also have elections for the Senate and the House of Representatives). This process takes, approximately, two or three hours. On the other hand, the regulation allowing the IFE to produce a quick count, explicitly states that the results must be announced no later than midnight. So, there is a real possibility of reaching the deadline without information enough to produce the estimations. As a consequence, the committee has designed a number of monitoring systems to know, every five minutes, starting at 6pm, the fraction of sample that has arrived as well as its distribution over the country.

Last July, the most recent Presidential election took place in Mexico with three main contenders. The PRI, the Partido Accion Nacional (PAN) and a leftist coalition around the Partido de la Revolución Democrática (PRD). The IFE made public its intention to announce the results of its quick count at 23:45. The election day, at 22:30, the Technical Committee, after analyzing the coverage of the available data (6260 polling stations; 82.4% of the planned sample), produced the estimates that were announced by the President of the IFE, through a national television broadcast, at 23:15 (half an hour before

expected). The intervals were (95% confidence, or probability in the Bayesian case):

PRI [37.93, 38.55], PRD [30.90, 31.86] and PAN [25.10, 26.03].

These estimations can be compared to the final results, computed several days later: PRI = 38.21, PRD = 31.59 and PAN = 25.41. In this occasion, there were no unjustified victory claims although some parties declared that the 30 minutes anticipation of the IFE broadcast was 'rather suspicious'. No further inquiry was requested after the election day.

- Final Remarks

Since 2000, the political system in Mexico has changed. The elections are now organized by an autonomous agency and the citizenship participates in several ways, not just casting their votes. This electoral architecture faces many challenges, mostly due to the remaining distrust of the parties and large sectors of the citizenship. In order to increase the confidence on the electoral processes, this agency has involved Scientists through several Committees by means of which the technical issues are solved with impartial and state-of-the-art procedures. Specifically, a number of Mexican Statisticians from different universities and other research institutions have contributed with his work to the stability of the country and the development of the rather new democratic regime.