



LIMITED VOTING IN BRAZILIAN LEGISLATIVE PROPORTIONAL ELECTIONS: A PROCEDURE TO INCREASE THE EFFICIENCY OF CHOICES

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Abstract: This paper aims to discuss how the introduction of a limited vote can benefit the achievement of efficiency in Brazilian legislative elections. The Brazilian experience with proportional voting has districts of high magnitude and a significant number of candidates, making it difficult for candidates and voters to act. We argue that if the voter had, instead of a single vote, a greater number of choices, second and third preferences could be captured, in the context of countless candidacies. Specifically, we point out, based on results in the literature, that making up to three votes available, in districts that are at least eight candidates, would increase the efficiency of public choices of legislative representatives.

Key-Words: Limited Vote; Legislative Election; Brazil, Public Choice.

1 Introduction

After the Estado Novo, Brazil adopted an electoral procedure for legislative elections that focuses on the proportional distribution of parliamentary seats. Over the decades, this experience was modified in one aspect or another, maintaining some elements and abandoning or changing others. But the essence of the choice of representatives remains intact: a distribution of seats based on a nominal vote, given on an open list, which distributes the seats based on a D'Hondt distribution³.

This characteristic also presents a high magnitude of the electoral districts, not only territorially, but also in the amount of seats to be filled. In the election to federal deputy, the states and the Federal District have from eight to 70 representatives to be elected. In the election to state deputy, the Federation units has from 24 to 94 representatives to be elected. Finally, in the election for councilor, the municipalities elect from nine to 55 representatives.

This high magnitude is accompanied by two other magnitudes: the first, of the electorate since in the state of São Paulo, for example, the number of electors now exceeds 33 million; the second, of the number of candidates: in the 2018 election, the number of candidates to state deputy in São Paulo totaled 2,174 and, even in the election of federal deputy of a state like Amapá, eight

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³ The D'Hondt series is a method of distributing legislative chairs, originally proposed by mathematician Victor D'Hondt. His original idea was to try to seize all the votes possible and today it is used in many countries. A didactic reference to compare the legislative chairs distribution methods, including the D'Hondt method, is Schuster et al. (2013).

seats, totaled 120 candidatures (TSE, ESTATÍSTICAS ELEITORAIS,).

With such significant numbers, the flow of information regarding applications and electors is hindered. It is difficult for electors to obtain information for at least 120 candidates, and difficult for candidates to communicate their proposals in the multitude of candidacies and in the high magnitude of electors. It also makes it difficult for the elector to remember who was their chosen candidate, as it restricts the reach of candidates to electorates beyond their region or more immediate segment. The free election time, in radio and TV, attempts to reduce the cost of obtaining information but in reality does not appease the difficulty of choosing between so many names.

Observing this difficulty, this article presents an alternative to increase the efficiency of choice in legislative positions in Brazilian elections: the adoption of limited voting. It would be possible for the elector to give not only one, but a number of votes that would allow a choice of approval by several names. The article suggests the adoption of three votes.

As specific objectives, the article aims to demonstrate how a candidate, even with great approval among the electorate, can be eliminated in the current system; the historical and current experiences in other countries with the adoption of a similar system; and, finally, considerations about possible limitations for its adoption in Brazil.

In the second section of this article, after this introduction, we define the problem of a plurinominal district, the district magnitude, and the options of Brazilian legislation. In the third section, we discuss how this electoral system has achieved or not its objectives in the Brazilian experience. A fourth section discusses the employment in other countries and the benefits and costs that can be observed in Brazil. Finally, a fifth section concludes the article.

2 What are plurinominal districts?

A plurinominal district is any electoral circumscription responsible for electing more than one representative. Therefore, this definition encompasses the election of two or more representatives in a collegiate at any level (REYNOLDS, 2016).

But the definition of how many representatives to elect is crucial and the literature addresses this problem as it does that of the magnitude, or the amount of representatives to be elected.

The constitution of an electoral rule brings relevant causal effects for defining a magnitude and the electoral procedures that will result in the conversion of legislative seats from the vote. As is known, there is no better or worse criterion on both issues, with countless experiences accumulated worldwide.

For Brazil, a tradition adopted in the 30s of the twentieth century, returned at the end of the Estado Novo, and extends to the present day, consecrated a generic formula: districts with high magnitude and an open list vote, determine the seat distribution through the D'Hondt

coefficients as a consequence of votes for the list/party (Brazil, 1965). And the most voted in each list/party are then elected into the number of seats won (TAVARES, 1994).

It should also be noted that, contrary to what is commonly stated, the system of proportional representation with an open list is not little widespread. Countries such as Lebanon, Finland, Cyprus, Switzerland, Czech Republic, Luxembourg, Norway, Peru, Sweden, Greece, Sri Lanka, Indonesia, Japan for the Upper House, Chile, Suriname, Albania, Fiji, and Aruba adopt it (IDEA, 2021). Belgium uses a flexible list system according to the language communities. There is also the case of the Netherlands where, in addition to an open list proportional vote, there is a single national district with high magnitude, 150 parliamentarians, and a barrier clause of less than one percent (IDEA, 2021). In the other countries mentioned, the district magnitude is usually low but often above the average magnitude of Brazil for the Federal Chamber.

There have been numerous variations in the formula over the decades, among which we highlight:

1. The change in the distribution of the number of legislative seats according to the electoral district (States and Municipalities);
2. The elimination of blank votes from the calculation of the electoral quotient by Law 9,504 of 1997 (BRASIL, 1997);
3. The elimination of a minimum quotient since the 2018 general elections, for parties/lists to contest legislative seats when the D'Hondt coefficient is applied;
4. The establishment of a minimum of votes, ten percent of the equivalent of the quotient for nominal candidacies to access legislative seats, even if in position on the election lists/parties;
5. Variations in the number of maximum candidacies compared to the number of seats in dispute that a party/coalition could register;
6. The adoption by a single general election, 1982, of a vote tied by the party to majority positions;
7. The possibility before 1966 and between 1986 and 2018 of the establishment of coalitions, or agreement between parties to establish the same list to obtain the coefficient;
8. Establishment of quotas for female candidacies;

All these changes are followed by consequences on the results and political process (LIMA JUNIOR, 1999). Other changes were established in decades prior to the rupture of the political process in 1964. For the purposes of this article, we will devote ourselves to the first four changes mentioned above, even if the system has not changed in its basic format.

The magnitude varied according to constitutional rules and different electoral laws. The law established a minimum and maximum number of parliamentarians per state in the case of federal elections seeking to avoid the predominance of a few states over the parliamentary process, although there was a provision for the Senate with identical federal representation (BRASIL, 1988).

The establishment of ceilings and floors for state representation is a cause for controversy since it indirectly establishes a sharp distinction in electoral representation. Although some difference is natural in the organization of the districts, it is noted that this disparity in Brazil reached levels that could be pointed out and uncomfortable.

The Brazilian Constitution of 1988 also established rules, following the establishment of the rule for the Federal Chamber, for the number of representatives in Legislative Assemblies, maintaining the forecast of the state circumscription, especially relevant when many Brazilian states would be among the largest countries in the world in territorial terms, and the majority is territorially larger than European countries, even with populations equivalent to these. In the case of municipalities, the minimum number of representatives was established at nine, while the additional number is established according to population bands, which have been discussed and changed over the decades (BRASIL, 1988).

The remarkable point is that a district of high or low magnitude has implications for a proportional election by fundamentally modifying the difficulty of obtaining a parliamentary seat. In districts with high magnitude, such as the Legislative Assembly of São Paulo, one vote in every 94 valid votes would allow access to a party or coalition, while for the Chamber of Deputies in Amapá, one vote in every eight valid votes would be required to obtain parliamentary representation (BRASIL, 1997).

The need for votes, from 2018, decreased to the extent that the party quotient was extinguished and even alliances that did not obtain it would participate in the division of seats in the D'Hondt series. Thus, in the case of the election for the Legislative Assembly of São Paulo, it is possible to predict that a party will be able to elect a state deputy with less than one percent of the votes, as in the Dutch federal election.

It should be noted that the proportional system, stimulates the creation of parties as it reduces the electoral cost of obtaining the legislative seat (TAVARES, 1994). The March 2021 election in the Netherlands, for example, was contested by 37 parties (THE NETHERLANDS, 2017).

This last regulation has reduced the difficulty of access to a legislative chair for parties and promotes a more proportional distribution between parties, with advantages and disadvantages. This measure, accompanied by the end of the coalitions, established a reinforcement in the party's strategy at the time of the composition of the party list and its articulation between the segments and territories of the electoral dispute. Thus, to maximize the potential for obtaining votes, the party finds incentives to launch as many candidacies as possible within the legal forecast, distributing them among the representative bands of the electorate.

The third change aimed to avoid the election of candidates who were relatively poorly voted in the electorate's preference, limiting the filling of legislative seats to candidates who obtained at least ten percent of the electoral quotient (BRASIL, 2015). Thus, the transfer power

of the list is restricted. In other words, concentrating the votes on a single candidate, operating with a closed list logic, can result in non-election of parliamentarians.

Finally, the definition of how many candidates a list can qualify for the nomination of electors plays an important role. With a limit of ten percent for the minimum useful vote, the party could consider launching eight candidates, at worst, that would exceed the limit and enable the party to contest seats in the D'Hondt series application. However, Brazilian law in 2020 provided the possibility of launching up to 50% more than the number of parliamentarians to be elected, observing in parallel the quota of one third for female candidates. However, municipalities with fewer than 100 thousand electors, cities with up to 17 councilors, and states with 12 or fewer federal deputies can cast twice the number of seats per party. In fact, the possibility of candidacies multiplies as the number of seats decreases (Brazil, 2019A) (BRASIL, 2019b).

Consider the comparison between five Brazilian municipalities and five different states in their elections to the Legislative Assembly to understand the effect of the regulation. Table 1 shows that there was one candidate for every 4,500 electors in the largest city in Brazil and that the total number of candidates totaled 1,997, even in Borá-SP, with 36 candidates in an electorate of 1,040 people. Table 2 shows the same comparison for state assembly elections, indicating one candidate for each 861 electors, adding 495 candidates, while in São Paulo the elector had to choose between 2,174 candidates or one candidate for each 15,198 electors (TSE, ESTATÍSTICAS ELEITORAIS, 2020).

Table 1 – Comparison between electorate, parliamentary seats, and number of candidates for City Council - Brazil 2020 - Selected Municipalities

Municipality	Electorate	Seats	Electors	Candidates	Electors	Candidates/ Seat
Borá - SP	1,040	9	115.56	36	28.88	3
Alta Floresta - MT	38,432	13	2,956.30	159	241.71	12.23
Concordia - SC	55,194	13	4,245.69	109	506.37	8.38
João Pessoa - PB	522,269	27	19,343.30	667	783.01	24.7
São Paulo - SP	8,986,687	55	163,394.31	1,997	4,500.09	36.31

Source: The author based on (TSE, Estatísticas Eleitorais, 2020)

Table 2 – Comparison between electorate, parliamentary seats, and number of candidates for Legislative Assembly - Brazil 2020 - Selected States

State	Electorate	Seats	Electors/Seats	Candidates	Electors/Candidates	Candidates/Seats
Amapá	426,382	24	17,765.92	495	861.38	20.63
Goiás	3,553,706	41	86,675.76	907	3,918.09	22.12
Paraná	7,968,409	54	147,563.10	767	10,389.06	14.2
Minas Gerais	15,695,210	77	203,833.90	1,382	11,356.88	17.95
São Paulo	33,040,411	94	351,493.70	2,174	15,197.98	23.13

Source: The author based on (TSE, Estatísticas Eleitorais, 2018)

In any pattern, a dense election. This means it is costly for the candidate to stand out and seek a vote, just as it is costly for an elector to obtain information regarding all possible choices, making it difficult for a legislative choice to be consistent.

3 The Brazilian logic: party, coalition, or personality?

In the long Brazilian experience, some occurrences accumulate and can be perceived in the forms of elector behavior but, above all, in its consequences on the results.

The system was designed so that the elector chooses in two stages: initially in the party or coalition, after all, they would be responsible for the distribution of legislative seats in the final analysis and, in a subsequent stage, the elector indicated which candidate from the list should be prioritized at the time of filling it.

Tavares (1994) recalls that the adoption of such a system dates back to 1935, in the Agamemnon Law. Only the criterion for the distribution of leftovers has changed over the decades: in the law of 1935 for the candidates with the highest number of votes, in 1945 for the party or coalition that had achieved the highest number of votes, later for the parties or coalitions that reached the electoral quotient, and from 2018 for all parties or coalitions, regardless of the achievement of the electoral quotient.

As Tavares recalls (1994, p. 135), this procedure has been detrimental to the process and political parties for a “bizarre and incongruous association of the single vote in individual candidacy to a proportional electoral formula”.

In this respect, the procedure of the voting method in the Netherlands, as another proportional system in open lists, is consequent: the voter must indicate first the party, then which candidate from that list will be prioritized within his/her vote in the ordering preference.

On the contrary, a nominal vote is held in a candidacy in Brazil, which will only then result in adding the vote to the candidates party. When allowing coalitions, this vote could even result in the election of a candidate with divergent ideology and/or proposal since the coalitions themselves did not obey the ideological coherence or proposals but were built on the basis of

previous calculations of hypothetical electoral viability.

This logic of voting in an individual candidacy, allied to the fact that the elector has a high cost to research all the candidacies, even if reduced to viable candidacies, soon stimulated the parties' adoption of candidacies of well-known personalities, mostly external to the political process, the so-called "vote puller". Being external to the political system and becoming a candidate, in itself, is not necessarily bad, even legal in that it has all the required documentation met. However, it is useful to mask the other existing candidacies in the Brazilian case, and occasionally the vote, personalistic and individual, given that the popular candidate collaborates for the election of a candidate that the elector rejects. Due to the high magnitude existing in Brazilian constituencies, the process of indirectly electing a candidate rejected by the elector can happen regardless of the existence of the "vote puller".

Therefore, the voting procedure already anticipates a deviation from the distribution of seats by emphasizing the vote on individuality when the system operates its results according to party lines, which become fragile.

One way to reduce this deviation was the possibility of alliance voting. Although it opens the opportunity for other electors to decide the order of the list, as in a convention, when voting on the alliance, the elector is aware of the party line and seeks to directly influence the occupation of seats in the respective legislature. This possibility gave a clear outline to the system of seat distribution at the cost of waiving the attempt to influence the order of candidacies.

However, in recent years, the practice has been discouraged, although still possible. This occurs because only candidates with 10% of votes, equivalent to the electoral quotient, are elected, which paradoxically has also been relaxed. In fact, when indicating the alliance in his/her vote, the elector of a party runs the risk of qualifying this alliance to obtain, at the limit, many seats without any candidate obtaining the limit of ten percent of the quotient enabler of the election.

The adoption of this ten percent clause for individual candidates was justified by the election of candidates with votes that would be far from the number of seats distributed in the ordinal classification, in what was understood as a deviation of representation, especially in parties where there was a highlighted "vote puller". However, the alleged deviation of representation did not occur if the party was assumed to operate within a logic proper to a closed list, instructing its electors to choose a single name. Thus, a possible strategy is characterized within the system of proportional representation of open lists.

The long Brazilian experience with proportional systems and districts of high magnitude demonstrates some difficulties, previously indicated, arising from a personalistic nominal vote, although the system is based on the distribution of legislative seats by parties. Moreover, the experience has shown the weakening of political parties since the strategic calculation of candidacies is accompanied by a wide freedom of party exchanges and a system of many parties. Thus, in addition to the voting system, the Brazilian experience reinforces the personalistic

character of the choice of candidates.

4 Limited voting - Its employment in elections and how it can improve the efficiency of proportional voting

4.1 What is limited voting

Limited voting is so called because the elector has fewer votes than those of members to be elected when electing a legislative body. It can be said that, even when the elector has a single vote, in proportional systems, traditionally, there is a limitation to the vote. Thus, limited voting is a vote in which any elector has a “V” number of votes, always less than the number of legislators, “L” to be elected. Thus, limited voting is characterized when V is smaller than L (LAKEMAN and LABERT, 1995).

For the purposes of sorting out the candidates, the most voted candidates, regardless of the party to which they belong, are those who are elected. However, one can have a variant where, especially in circumscriptions with high magnitude, the distribution of seats can occur by proportional votes instead of the most voted, in general, by plurality.

On the other hand, to elect a plurality candidate in a single round, or in two rounds, a majority district cannot be considered an example of limited voting since there is a single vote to elect a single representative.

The limited vote is currently used in Spain, in elections for Senator, where the districts have four representatives and three votes are given to the elector, in which plurality is adopted; in Gibraltar, where the elector has ten votes to elect 17 representatives in the local parliament; and, finally, in various parts of the United States, as a form to counterbalance the uninominal plurality and its consequent deviation from proportionality (ARRIGTON; INGALLS, 1998).

The vote is also limited so that there is no predominance of a majority stream of the electorate slowing down the deviation of proportionality that could be generated if a relative majority combined the votes and could elect all representatives in plurality (TAVARES, 1994). This experience can be observed in the election for Brazilian Senators every eight years, or during the renewal of two-thirds of the Federal Senate: a party or coalition that launches two candidates can obtain the two seats in dispute with 50% of the votes (NEWLAND, 1982 apud TAVARES, 1994)

It is indicated that there was a concentrator effect in the Spanish case. However, it seems to have risen from the low magnitude, only four seats in their maximum number, than from the possibility of holding multiple votes (ACE PROJECT, 2021)

Thus, in the limited voting, the fact that the majority cannot fill all parliamentary seats allows minorities to contest spare seats, bringing the limited voting closer to proportionality, even in plurality. With districts of high magnitude, it is possible to increase proportionality or, still,

maintain the distribution of seats by parties or coalitions, in a multinominal distribution.

Tavares (1994) recalls the limited voting, by plurality:

[...] in limited plural voting systems, the pattern of distribution of parliamentary representation among parties approaches proportionality in relation to the profile of vote distribution... and the electoral opportunities of small parties grow as the ratio between the number of votes available to the elector and the number of representatives to be elected decreases in the circumscriptions" (Tavares, 1994, p. 86, our translation).

Therefore, the effects of proportionality tend to grow when the number of votes is limited at a lower level than the number of representatives to be elected. Furthermore, it is guaranteed when the distribution takes place by parties and coalitions, obeying series of seat distributions.

4.2 Why can employing it in Brazil improve voting efficiency?

It is possible to list a series of benefits that the limited voting could bring to the Brazilian electoral process, assuming that there would be maintenance of high magnitude districts, regardless of the maintenance of proportionality or the choice for plurality.

If there is a maintenance of proportionality or choice for plurality (in Brazil, nicknamed "distritão") the choice will become more efficient for the following reasons:

1. Decrease in the cost of elector research among hundreds of candidates, being able to compartmentalize their vote, choosing between different dimensions of their interests, such as locations, professionals, expense functions, ideology, etc;

2. Decrease in the cost of prospecting electors by candidates since it is assumed that, if the candidate has approval in a representative segment of the electorate, he/she could capture the votes of these electors without directly competing for the first preference of the elector;

3. Capture of second or other ordinal classifications, reinforcing the possibility of electing the Condorcet winning candidates⁴, that is, considerably increasing the probability of selecting candidates who are the "n" preferred for "n" seats (DISS, TLIDI, KAMWA, 2020);

4. In a limited vote, the probability of the elector being represented by at least one elected person increases considerably, avoiding the waste of votes that occurs in the plural system (by definition, this problem is solved instantly in a proportional distribution).

In this last aspect, limited voting approaches Dodgson's method⁵ above all, in the sense that in the latter, the elector must order from the first preference to the last. And the winner is the one who requires the least number of position exchanges to become a Condorcet winner. Thus,

⁴ Condorcet winner is that candidate who defeats all other opponents in a pair contest or direct confrontation. Not all electoral systems guarantee the victory of a candidate who wins by the Condorcet criterion. Young (1988) elaborated a seminal paper on the criterion.

⁵ Dodgson's method, proposed by Charles Dodgson, is a proposal of an election to discover a Condorcet winner, in which candidates are initially ranked by electors. Subsequently, the candidate who requires the least number of exchanges in the ordinations is evaluated to establish the winner. For a discussion regarding the method and difficulty of determining the result, it is worth reading Fellows et al. (2010).

the determination of a close number of candidates to be elected would approximate the limited vote to one vote in approval, dependent on the determination of the maximum limit of votes to be granted.

Garg *et al.* (2019) apply the limited voting method to budget options and calculate the efficiency for a sufficiently large electorate, larger than 400 electors, and found that the efficiency can rise from 80% to 99% when the choice is multiple.

To do so, the definition of the definitive winner, as the one who is a Condorcet winner, that is, in a peer-to-peer contest, defeats its competitors in the preference of the electorate. In plurinominal elections, the definitive winners are, in the face of the dispute, the greatest Condorcet winners, to the pre-established number of seats.

Garg *et al.* (2019, p. 13) concluded that: a. the choice design influences; b. when using voting with only one indication (*One-Approval*), the chance of choosing a candidate other than the Condorcet winner is 20%, whereas if using the nomination of three candidates (*Three-Approval*), the chance of a non-Condorcet candidate being selected is only 0.1%. In other words, the risk decreases from one chance in five to one chance in 1000.

The authors also recognize that an orderly vote would have even more precise properties to choose the winner. On the other hand, they recognize that it would be too costly for the electorate to understand the calculation of the results, preferring then to vote by approval or the indication of the first three preferences.

It is also easily observable, regardless of computer simulations, that a proportional candidate who is the second preferred by the majority of electors should be in the legislative body of eight or more members. Thus, in a close election, this would be a candidacy that would defeat any other in that circumscription. However, this candidate could receive no or few votes as first preference, being removed from the body of legislators. By allowing at least three votes, removing any complexity in the choice, and allowing more choices to be covered, the result tends to be closer to elector preferences.

5 Conclusion

The choice of representatives for the various legislative bodies around Brazil has acquired a growing and complex perception due to the accumulation of decades of experience. In addition to deviating from its first objective of the choice in allies and turning into a personalistic vote by the design of the voting mechanism, proportional voting was accompanied by a misunderstanding of the mechanism by the elector, who could inadvertently elect an unwanted candidate, and presenting a difficulty in understanding how allies and coalitions selected their candidates.

In this sense, this article ponders that the accumulation of these decades of experience, allowing the elector to choose not only one name, but three, in legislative districts that are at least eight representatives, as in Brazil, can significantly improve the efficiency of choices, selecting

candidates of second or third preferences, previously covered by the first choice.

The advantage of this improvement is that it does not require large computational needs, either of voting or calculation and significantly improves the mechanism of choice, even allowing different perspectives of an elector in everyday life to be expressed through his/her vote.

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