

# Majoritarian principles in critical junctures: an analysis of Brazil's 2018 presidential election

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## Context : electoral success of highly divisive candidates



## Research Question

Is the election of divisive or polarizing candidates an artifact of the voting methods?

- Potthoff and Munger [3] and Kurrild-Klitgaard [2] argue that Trump might have been a Condorcet loser. Woon et al. [4] argue he was in the Core.
- Igersheim et al. [1] argue that the Condorcet, Borda, Utilitarian winner was actually Sanders.

# Hypothesis

I expected similar results in the Brazilian 2018 presidential elections. Particularly, I expected him to have neither “pairwise” nor high “positional” mandate;

- I use a “representative” street survey a week before the first round of the presidential election. A pairwise comparison of the top 4 candidates was the only question I analyzed.
- **Haddad (Left) (29.28%)** - **Ciro (Center-Left) (12.47%)** - **Alckmin (Center-Right) (4.76%)** - **Bolsonaro (Right) (46.9%)**
- Abstention: 20%
- White/Null: 8.79%
- Others: 7.19%

- Not all respondents compared all candidates. I imputed the data with polytomous regressions<sup>1</sup>.
- There was a discrepancy between the survey and the result of the first round. I transferred while respecting Kemeny's distance, and picked the transference with minimal euclidean distance to the result.

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<sup>1</sup>Using the **R** package mice .

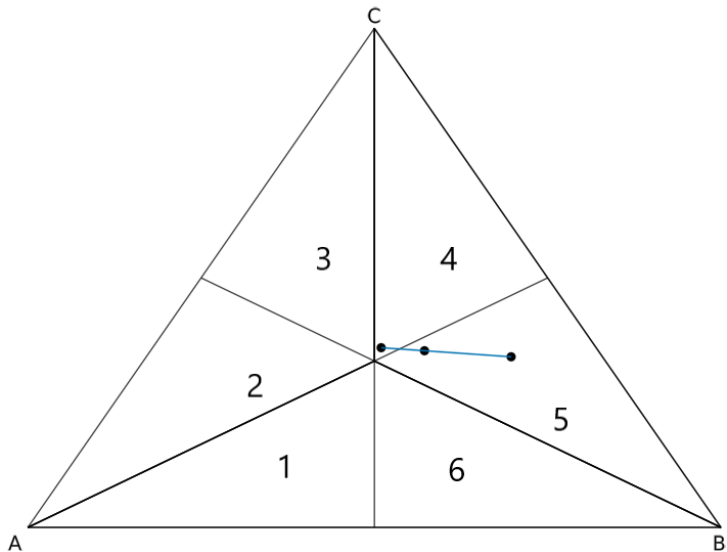
## Method - Saari's Geometry of Voting

Positional voting can be normalized:

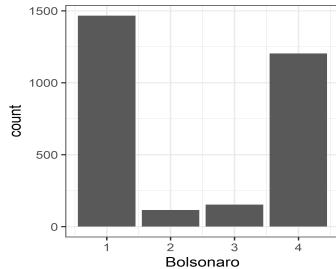
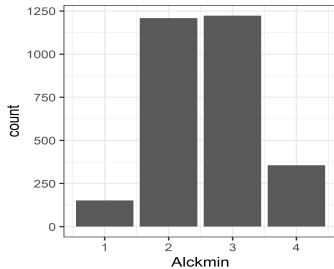
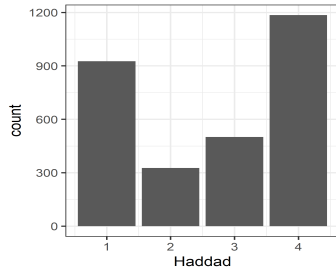
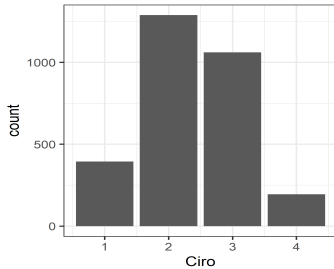
- Three candidates:  $(1, s, 0)$  where  $0 \leq s \leq 1$ ;
- Four candidates:  $(1, s_1, s_2, 0)$ , where  $0 \leq s_2 \leq s_1 \leq 1$ .



## Method - Saari's Outcome Triangle



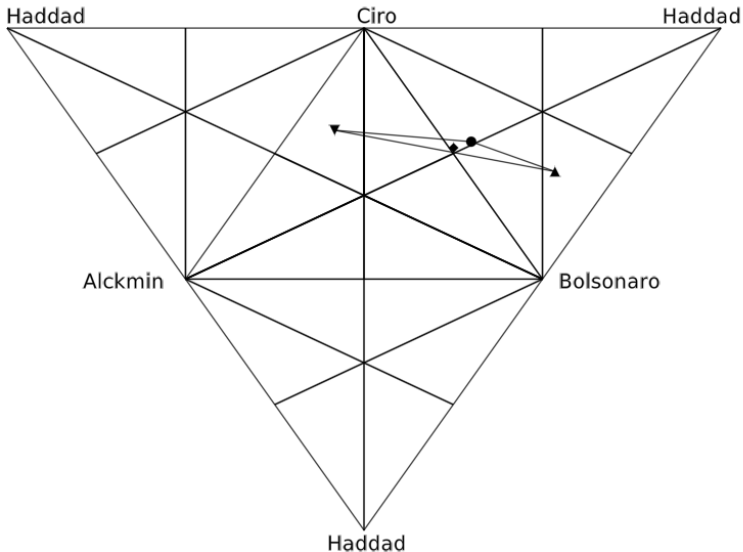
# Profile after imputation and rankings transference



## Results I: Borda and Condorcet

	Alckmin	Bolsonaro	Ciro	Haddad
Alckmin	-	-12.63%	-16.99%	8.27%
Bolsonaro	12.63%	-	5.48%	7.46%
Ciro	16.99%	-5.48%	-	16.65%
Haddad	-8.27%	-7.46%	-16.65%	-
	Borda Score	Standardized Borda Score		
Alckmin	7029	0.464		
Bolsonaro	7718	<b>0.543</b>		
Ciro	7756	<b>0.547</b>		
Haddad	6867	0.446		

## Opened Tetrahedron - Four candidates Positional Result

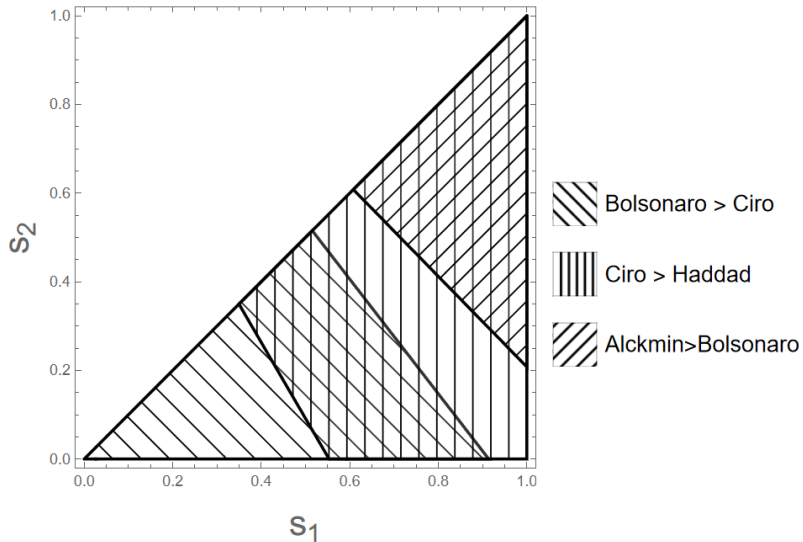


## Counterfactual Positional Victories

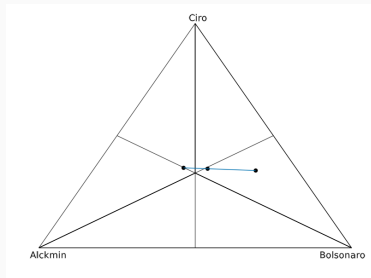
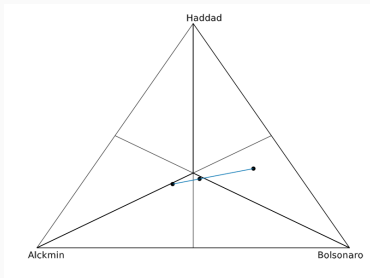
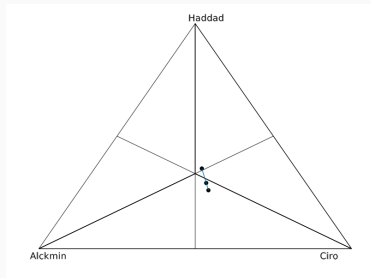
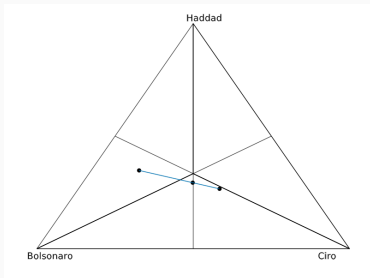
	Alckmin	Bolsonaro	Ciro	Haddad
Alckmin	0.0	0.31	0.0	0.58
Bolsonaro	0.69	0.0	0.47	1.0
Ciro	1.0	0.53	0.0	0.81
Haddad	0.42	0.0	0.19	0.0

**Table 1:** Proportion of victories in the positional voting procedure set

## Victory in terms of $s_1$ and $s_2$



# Alternative Set Stability



- We can't conclude Bolsonaro's victory was an institutional fluke. However, there is a conflict between the visions of Condorcet and Borda in this case.
- They perfectly match had he not ran.



- Even though the aggregation procedure boosted Bolsonaro's victory, it was not merely its effect, contrary to established theoretical expectations;
- But neither was he an undisputed winner:
  - pairwise mandate: ✓
  - positional mandate: ✗

Next steps:

- Use other variables in the dataset, particularly in the imputation;
- Analyze other moments of the 2018 election;
- Simulate coalitional and strategic alternative scenarios;

# References

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- [1] Herrade Igersheim et al. “Comparing Voting Methods: 2016 Us Presidential Election”. In: *European Journal of Political Economy* 71.nil (2022), p. 102057. DOI: 10.1016/j.ejpoleco.2021.102057. URL: <http://dx.doi.org/10.1016/j.ejpoleco.2021.102057>.
- [2] Peter Kurrild-Klitgaard. “Trump, Condorcet and Borda: Voting paradoxes in the 2016 Republican presidential primaries”. In: *European Journal of Political Economy* 55 (2018), pp. 29–35.
- [3] Richard F Potthoff and Michael C Munger. “Condorcet Loser in 2016: Apparently Trump; Condorcet Winner: Not Clinton?” In: *American Politics Research* 49.6 (2021), pp. 618–636.

- [4] Jonathan Woon et al. “Trump is not a (Condorcet) loser! Primary voters? preferences and the 2016 Republican presidential nomination”. In: *PS: Political Science & Politics* 53.3 (2020), pp. 407–412.