

#05

Borda vs. Plurality Rule: Which Voting Rule Reduces Inequality in Voter Satisfaction?

by
Christian Klamler

When we think about voting systems, the primary criterion is usually selecting the "best" candidate. But what if we also considered how fair the outcome is for voters? A recent study by Darmann, Eckert, and Klamler explores this very question by comparing two well-known voting rules—the Borda count and the plurality rule (first-past-the-post)—in terms of inequality in satisfaction with the elected candidate. Their findings challenge some common assumptions and offer new insights into the fairness of collective decision-making.

The Core Idea: Measuring Inequality in Election Outcomes

The authors propose a novel approach to measuring voter satisfaction with an election result. Instead of assuming satisfaction depends solely on whether a voter's preferred candidate wins, they use **ranking information**—individual preference orders—as the basis. If a voter ranked the winner first, their satisfaction is clearly highest; if the winner was at the bottom of their list, satisfaction is lowest. This approach quantifies individual satisfaction based on ranks (similar to how ranks are used to calculate candidates' scores under the Borda rule).

Using this framework, the authors measure satisfaction inequality using the **Gini coefficient**, a standard metric for inequality. A Gini coefficient of 0 means perfect equality (all voters are equally satisfied), while 1 indicates maximum inequality (one voter is completely satisfied, the others not at all).

Key Findings: When Borda Performs Better—And When It Doesn't

1. Three Alternatives: Borda Promotes Equality

In elections with exactly three candidates, the study confirms a common assumption: the Borda rule (which considers all ranks) leads to a more equal distribution of satisfaction than the plurality rule (which only looks at first-place votes). This is because Borda incorporates full preference orders, reducing extreme disparities in satisfaction.

2. Four or More Alternatives: No Clear Winner

With four or more candidates, the picture becomes less clear. The authors show cases where the plurality winner actually results in less inequality than the Borda winner. This surprising finding highlights that Borda's superiority is not guaranteed as the number of alternatives increases.

3. Small Electorates: Borda Shines Again

With exactly three voters, the Borda winner consistently leads to a more equal distribution of satisfaction—if the plurality winner is unambiguous. However, if there's a tie under plurality rule, the relationship becomes less predictable, especially with eight or more candidates.

Why This Matters

These insights have meaningful implications for designing fairer voting systems:

- **Context matters:** The "best" voting rule depends on the number of candidates and voters. Borda may be ideal for smaller decisions with few alternatives, while plurality sometimes performs better in more complex elections.
- **Beyond utility maximization:** While Borda often maximizes total satisfaction (a utilitarian goal), it doesn't always reduce inequality. Voting systems should balance both objectives.
- **A new perspective on fairness:** The study introduces a fresh way to evaluate voting rules—not just by the outcome, but by how evenly satisfaction is distributed.

Conclusion

This work bridges social choice theory and inequality measurement, showing that fairness in elections depends not only on who wins but also on how the outcome affects the distribution of voter satisfaction. While the Borda rule often promotes equality, its advantage isn't universal—especially in larger elections. If we aim for fairer decision-making, these findings remind us to consider both overall satisfaction and its distribution.

For more details, read the full study: [Rank Information and Inequality in Social Welfare Functions](#).