

# **Designing a Fair Parliament: Degressive Proportionality and the Challenge of Fair Representation in India: An Introduction**

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## **Abstract**

The Indian federation can be thought of as a chessboard. A strictly population-based allocation of parliamentary seats behaves like a rigid wooden board, tilting under demographic imbalances and pushing smaller or slower-growing states to the margins. Degressive proportionality offers a stabilizing mechanism, allowing smaller states to retain meaningful representation without denying larger states their due share. Accurate and verifiable population data provides the foundation for such a system, ensuring that representation remains transparent and fair.

This paper proposes a simulation framework for India's post-2026 delimitation. We plan to construct effective population estimates for all states and simulate three scenarios: the continuation of the frozen seat allocation, proportional reallocation based on population, and degressive proportional allocation using multiple parameter settings. The simulations will cover ten future delimitation cycles (2026–2071) to assess long-term representational fairness. Metrics such as seats-per-million, Gini coefficients, and malapportionment indices will be used to evaluate trade-offs between fairness and federal stability.

The results aim to provide a quantitative basis for evaluating degressive proportionality in India, offering insights for both scholarly discussion and policy-making in a diverse, multi-centric democracy.

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## **Introduction**

India's parliamentary seat allocation is currently based on a frozen 1971 population count, leading to growing disparities between states with different fertility and migration trends. This has created tensions in federal representation, particularly between northern and southern states. Degressive proportionality provides a possible solution by giving smaller or slower-growing states proportionally more representation, without reducing the share of larger states too drastically.

Comparisons with the European Union are instructive. While some analyses describe the EU as using proportional representation, in fact, seat allocation among member states follows degressive proportionality. Smaller states receive a slightly higher share of seats relative to

their population, while larger states have more seats but with diminishing representation per capita. This nuance is critical for understanding how India could adopt similar mechanisms.

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## Research Objective

This paper aims to provide a quantitative framework for evaluating post-2026 parliamentary representation in India. Specifically, we will:

1. Estimate effective populations for all states in 2026.
2. Simulate three allocation scenarios: frozen, proportional, and degressive proportionality.
3. Project the results over ten future delimitation cycles (2026–2071).
4. Evaluate the outcomes using representation ratios, Gini coefficients, and malapportionment indices.

The goal is to generate actionable insights into how India can balance fairness, stability, and federal equity.

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## Methodology

- **Population Data:** Use Census projections and other demographic data to estimate effective population per state.
  - **Seat Allocation Rules:**
    - Freeze (based on 1971 seats)
    - Proportional (strict population proportionality)
    - Degressive Proportionality (Seats proportional to population raised to an exponent  $\alpha$ , with  $\alpha$  tested at multiple levels: 0.4, 0.5, 0.6, 0.8)
  - **Evaluation Metrics:** Seats-per-million inhabitants, Gini coefficient for inter-state representation, malapportionment indices.
  - **Simulation Horizon:** 10 delimitation cycles (every 5–10 years depending on policy).
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## **Expected Contribution**

This paper will be among the first to quantitatively explore degressive proportionality in India. It aims to:

- Highlight potential imbalances under the current system.
  - Demonstrate how DP could improve representation fairness.
  - Provide a framework for future, more detailed simulation studies, potentially extendable to Rajya Sabha or local governance levels.
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## **References / Notes (Optional)**

- Dann, Philipp & Thiruvengadam, Arun (2020), *Constitutional Democracy in the European Union and India*, Edward Elgar.
  - Vidhi Centre analyses on Indian representation and delimitation.
  - India Forum articles and IIPS population projections.
  - EU apportionment literature and Penrose allocation rules.
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