

Spatial Analysis of Gender Disparities in Electoral Participation in Urban Bengaluru: Implications for Inclusive Urban Governance

Sreesha S Bhat^a, Meghana K Raj^b

^aAssistant Professor, Department of Architecture, Ramaiah Institute of Technology, Bengaluru

^bAssociate Professor, Department of Architecture, Ramaiah Institute of Technology, Bengaluru

Abstract

This study investigates gender-based disparities in voter registration across the Assembly Constituencies (ACs) of Bengaluru, Karnataka, using spatial analysis to uncover patterns of political participation in a rapidly urbanizing context. By utilizing publicly available electoral rolls from the Election Commission of India (2024), the research disaggregates demographic data by gender, total registered voters, and number of polling stations to identify geographic variations in electoral inclusion. The study further explores how factors such as uneven urban growth, spatial development trends, and the distribution of civic infrastructure impact gendered access to democratic processes. Bengaluru, often referred to as the “Silicon Valley of India,” presents a unique case with its mix of high-tech urban enclaves and underserved peri-urban areas. Through a spatial lens, the study demonstrates how gaps in voter registration can reflect deeper structural inequalities rooted in planning and governance frameworks. It argues that electoral data—often considered administrative—can be a powerful proxy to assess broader urban inequities, especially those affecting women and marginalized groups. Ultimately, the findings seek to inform more inclusive models of urban governance that are responsive to the spatial and demographic realities of cities in transition. The paper contributes to interdisciplinary dialogues on gender, democracy, and spatial justice in the urban Global South.

Keywords: Gender disparities, Electoral Participation, Urban governance.

Introduction

Urbanization in India is accelerating, often creating fragmented and unequal access to services and opportunities. Bengaluru, as one of India’s fastest-growing metropolises, offers a microcosm to study urban inclusivity through the lens of electoral participation. According to the Census of India (2011), Bengaluru’s urban sprawl has led to varying levels of infrastructure, accessibility, and civic awareness across its constituencies.

Voting is not only a political right but also a measure of civic integration and empowerment. Patterns in electoral participation reflect how inclusive urban systems are in accommodating the civic identities of diverse populations. Marginalized groups, including women and gender minorities, often face structural challenges that prevent full participation in democratic processes. The gendered nature of electoral engagement reveals deeper spatial and socio-political inequalities, making it a vital lens for urban researchers and planners.

This paper investigates spatial gender disparities in voter registration across selected urban constituencies in Bengaluru to identify patterns of exclusion and inform responsive urban planning and governance strategies. The study particularly focuses on constituencies like Mahadevapura, Yelahanka, and Byatarayanapura, known for high-tech developments but also large migratory and peri-urban populations, representing complex and dynamic urban morphologies. These sites serve as critical laboratories for understanding how demographic shifts and spatial planning interact with civic behavior.

Literature Review

Several scholars and institutions have examined the interrelationship between urban form, civic participation, and gender disparity. UN-Habitat (2013) outlines how urban planning must engage with gender-inclusive approaches to ensure equitable access to services and political rights. The report emphasizes that civic participation, including voting, is not just a function of eligibility but also of access and safety, which is often gendered.

Chakraborty and Jain (2019) study the link between gender, migration, and voter registration in Indian cities, identifying that migrant women often remain excluded due to lack of documentation and awareness. They point out that the dynamic nature of informal settlements and temporary migration contribute significantly to the invisibility of women in electoral rolls.

Bhat and Patel (2020), focusing on Bengaluru, analyze typological diversity across constituencies, illustrating that spatial variation in infrastructure and development intensity results in uneven civic inclusion. Their work serves as a critical foundation for categorizing urban constituencies and understanding how peri-urban, core, and high-growth zones affect social representation.

Desai and Mahadevia (2013) discuss the broader implications of inclusiveness in Indian cities, emphasizing the intersectionality of gender, space, and empowerment. They argue that urban spaces need to be re-envisioned to reflect the civic and social needs of marginalized groups.

Ranganathan and Kamath (2016) provide insight into the entrepreneurial urbanism shaping Bengaluru, illustrating how aspirations around growth and development often exclude vulnerable populations from decision-making processes and infrastructure access.

Mahadevia (2010) further stresses the need for gender-responsive planning, suggesting that women's participation in urban governance and planning processes is crucial for fostering inclusive cities.

Bhagat (2011) provides a macro perspective on urbanisation trends in India, framing how migration patterns and regional inequalities shape the urban landscape—factors that underpin voter registration disparities in cities like Bengaluru.

The current study builds on these frameworks by quantitatively analyzing electoral gender disparities through spatial and demographic lenses. While past literature has focused on qualitative dimensions and broader spatial planning, this research emphasizes data-driven local analysis within an urban governance context.

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Scholars of urban studies have further indicated that the availability of polling stations alone does not translate to electoral inclusion. Rather, cultural norms, safety concerns, working hours, and education levels interact with space to shape civic behavior (Sujatha, 2017).

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Objectives

To map and analyze gender-based voter registration disparities across urban Bengaluru.
To examine the spatial distribution of polling stations in relation to gender participation.
To explore the correlation between urban typologies (e.g., IT corridor, traditional neighborhoods) and gender gaps in voter data.

To offer planning and policy recommendations for inclusive urban governance based on data-driven insights.

Methodology

Data Source: Electoral demographic data for Bengaluru's Assembly Constituencies as published by the Chief Electoral Officer, Karnataka (2024).

Parameters Analyzed: AC Name and Number, Number of Polling Stations, Gender-wise Voter Count (Men, Women, Others), Total Voters.

Analytical Tools: Microsoft Excel for data sorting and analysis, and graphical representations such as bar and pie charts to highlight disparities.

Typology Classification: Constituencies categorized into Core Urban (e.g., Yeshwanthapura), Peri-Urban (e.g., Dasarahalli), and High-Growth IT Zones (e.g., Mahadevapura) based on BBMP zoning and urban development literature (Bhat & Patel, 2020).

Data Analysis and Findings

Gender Disparity Trends: Certain ACs such as Mahadevapura (with 470,878 total voters) and Yelahanka (373,987 voters) show significantly skewed gender ratios, often favoring male voter registration. For instance, Mahadevapura had 256,250 male voters versus 214,479 female voters and 149 others. This suggests a gender participation gap of over 8%.

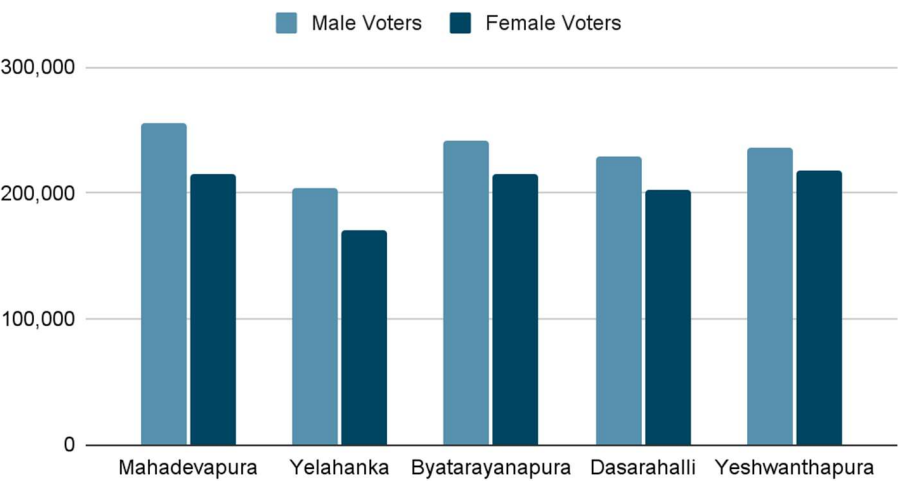
Polling Station Distribution: Despite a high number of polling stations (e.g., 412 in Mahadevapura), the disparity persists, indicating that sheer availability does not equate to accessibility or inclusion. Cultural, occupational, and logistical constraints (such as lack of safe transport or working women unable to visit polling booths) may contribute to this. Additionally, temporary migration and lack of stable housing in high-growth zones affect voter enrollment for women.

Typological Observations: Core urban areas like Yeshwanthapura have a more balanced gender representation (236,223 men vs 217,276 women), possibly due to better civic infrastructure, settled populations, and greater awareness. In contrast, peri-urban zones like Dasarahalli, though equipped with 391 polling stations, see a higher male-to-female voter ratio—potentially a result of industrial workforce influx and unregistered women in informal settlements.

Outlier Constituencies: The "Others" category, although small, is notably present in constituencies like Dasarahalli and Byatarayanapura, indicating some level of recognition for non-binary voters. However, the registration numbers remain low, highlighting the need for more inclusive electoral outreach. This presence, though minimal, signals a changing landscape of gender identity

acknowledgement in civic datasets and calls for data collection reforms.

Gender-wise voter distribution by Constituency



Source: Election Commission of India

Discussion

The findings point to the need for spatial equity in civic participation. Urban design and planning often overlook the socio-spatial barriers that affect women's and marginalized communities' access to public infrastructure, including electoral systems. This gender imbalance in voter data reflects deeper systemic issues such as documentation gaps, restricted mobility, gendered economic roles, and lack of targeted electoral campaigns.

For example, IT hubs attract male-dominated workforces but do not ensure housing security or documentation for accompanying families, leading to voter exclusion (Chakraborty & Jain, 2019). Similarly, women in informal settlements face logistical hurdles in documentation and mobility, which are rarely accounted for in city development plans. The dissonance between infrastructural provision and social access necessitates a reconsideration of how cities are designed and managed.

The inclusion of non-binary voters in some constituencies signals progress but also highlights the limited scale of outreach and awareness efforts. Electoral data must move beyond binary classification to better reflect the diversity of urban populations. Furthermore, spatial mismatches between voter population clusters and polling station locations underline the importance of urban form in shaping civic accessibility.

Policy Implications and Recommendations

Gender-Aware Planning: Integrate gender-disaggregated electoral and civic data into municipal development plans to ensure all demographic groups are represented and accounted for in local policies.

Targeted Outreach: Initiate voter education programs in IT corridors and informal housing settlements where women may be under-registered, supported by NGOs and community organizations.

Polling Infrastructure Improvements: Establish polling stations with safety features such as lighting and transport access, mobile polling booths in underserved areas, and timing flexibility to enhance women's participation.

Spatial Audits: Conduct regular spatial audits that correlate gender demographics with access to civic services (UN-Habitat, 2013), identifying infrastructural and procedural gaps in voter registration and turnout.

Smart City Integration: Build civic participation indicators into Smart City dashboards and citizen engagement platforms, ensuring feedback from women and other marginalized identities is regularly captured and addressed.

Conclusion

This study underscores the importance of viewing electoral participation not just as a political activity but as a spatial and social phenomenon reflecting urban inclusivity. Gender gaps in voter data serve as markers of spatial injustice and exclusion. Bridging these gaps requires integrated approaches across urban design, transport, housing, documentation, and civic education.

By linking electoral demographics to urban planning, city administrators and planners can ensure that democratic rights are supported by equitable and inclusive urban environments. Recognizing and acting upon gendered patterns in voter registration can lead to more representative governance, inclusive development, and socially just urban futures. A data-informed, place-sensitive approach to electoral planning will be instrumental in shaping cities that are truly inclusive and democratic.

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