Governance and Citizens in Urban India: Evidence from Bhopal
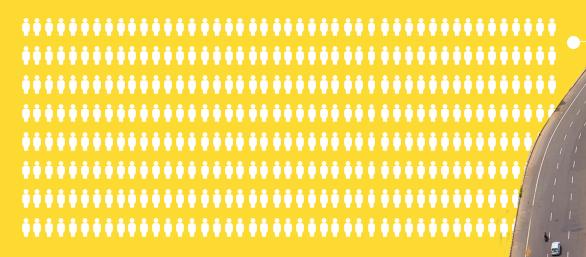
March 2025

Content

01 INTRODUCTION

Urban India

One of the greatest challenges that India faces in the 21st century is the governance of its cities. Cities are centers of innovation, opportunity, and growth, and are home to a steady flow of migrants. In 2011, Mumbai, Delhi, and Kolkata were the only three cities with more than ten million people each, and 53 cities had populations of more than one million each.[1]
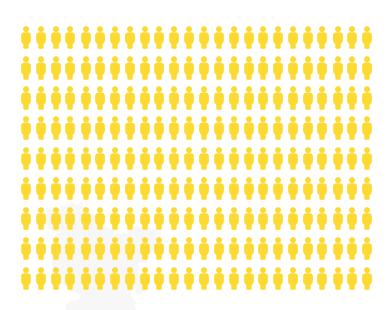
As of 2022,

India stands at almost 400 cities with populations between 0.1 to 1 million.

[1] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.janaagraha.org/files/publications/Citizen-Index-Book-Dec-2014.pdf

A UN report has estimated that urban population in India, will stand at

675 million people by 2035

and the percentage of India's urban population will be 43.2 percent.[2] However, the physical growth of cities has paced much ahead of our ability to govern them, which has put huge pressure on the existing development infrastructure, resources, and governance systems.

With recent studies suggesting a stabilization of population growth in the top-tier cities, it is believed that the future expansion of India's urban population is likely to be primarily driven by the smaller statutory towns (those with less than 0.1 million population) and Census Towns. These segments together accounted for a significant 50% of India's urban population in 2011. The narrative of India's urbanization is, therefore, becoming less top-heavy. Instead, there is a strong indication of more balanced urbanization, with small and medium cities poised to play a significant role. Understanding and addressing the specific needs and opportunities of these areas is fundamental for achieving inclusive urban development.

2   https://www.thehindu.com/news/national/indias-urban-population-to-stand-at-675-million-in-2035-behind-chinas-1-billion-un/article65584707.ece

City-Systems

Our work collects and presents data on the state of basic services and infrastructure in Indian cities to highlight the extent of these challenges. At the same time, relating the delivery of such services to mechanisms of governance. The ability of a city to deliver good quality of life (e.g., at a minimum, good quality of basic services and infrastructure) depends to a large extent on the complex, mostly-invisible factors (such as laws, policies, institutions, institutional processes) that underpin urban governance. To conceptualize these factors, diagnose urban problems and - more importantly - solve them, we need to view them in a systems framework. The "City-Systems" framework is a framework created by Janaagraha that helps us identify the root causes of our urban challenges. This City-Systems framework comprises four components:

1. Urban Planning & Design

2. Urban Capacities & Resources

3. Empowered & Legitimate Political Representation

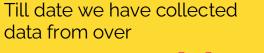4. Transparency, Accountability & Participation

Janaagraha undertakes regular reviews of the laws, policies, institutions and institutional processes that lie within each of these four components. Entitled 'Annual Survey of India's City-Systems',[3] this work has identified significant challenges with urban India's City-Systems.

The work in this project focuses particularly on the fourth component. With such large populations living in smaller geographical areas, it is crucial to deepen citizen participation in all governance systems, to improve quality of life. Citizens should not only be aware, but empowered to have a say in how their cities and neighbourhoods are planned and managed. In any democracy, the quality of governance is inextricably tied to the quality of citizenship. Our work, therefore, also collects data on the current status quo of citizen participation and considers its relationship to service delivery in urban India.

3   Janaagraha Centre for Citizenship and Democracy (2017): Annual Survey of India's City-Systems – Shaping India's Urban Agenda. Available: https://www.janaagraha.org/asics/report/ASICS-report-2017-fin.pdf [accessed 15-05-2023].

The Urban Governance Project
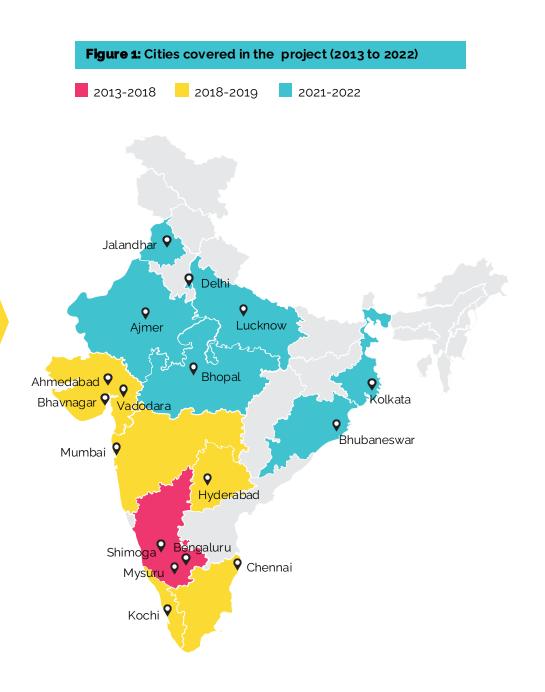
The Urban Governance project aims to gather systematic and robust data on the relationship between citizenship, basic services, and infrastructure delivery in cities across India. We argue that effective citizenship means essentially being able to use one's rights, that is to effectively participate in public life and engage in public activities across social boundaries. Second, effective citizenship means being able to claim and obtain public goods, basic services, and infrastructure from the local state.

Till date we have collected data from over

38,000 citizens

in 17 cities across India.

Figure 1: Cities covered in the project (2013 to 2022)

Legend:
- 2013-2018
- 2018-2019
- 2021-2022

Research design

01 **Key respondent interviews**

City commissioners, police commissioners, corporators, heads of departments, prominent academics in the city/state, and civil society activists were interviewed in each city to understand local context on service provision, issues, reference terms and inform the nuance for each city's survey instrument.

02 **Focus Group Discussions (FGDs)**

- 2 FGDs per city.
- Male and female citizens participated who were from marginalised communities, typically from very low-income neighbourhoods, especially in shack settlements and informal slums.
- Goals:
    a. To collect qualitative data on how citizens access services, how they engage with politicians and the state, how communities are organized and how maginalised communities understand their rights
    b. To use responses to adapt and fine tune our survey instrument to actual conditions and practices in these communities.

03 Large, quantitative, representative household surveys

☐ Systematic random sampling that stratified polling parts to generate a representative sample of polling parts across each city taking care to ensure citizens from marginalised communities were included.

☐ Manual counting, listing, and classification, of all residential buildings within the sampled polling parts in each city. Classification into one of five housing type categories: HT-1 (informal shacks), HT-2 (informal slums), HT-3 (lower middle class), HT-4 (middle class) and HT-5 (upper class housing).

☐ Manual counting of number of households within each listed residential building.

☐ Systematic sampling of households across polling parts.
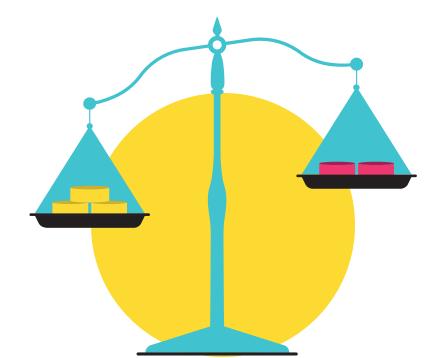
☐ Quantitative household surveys with 1,000-3,000[4] citizens per city.

☐ Top-up sampling to ensure sample match to listings (by housing type) and to account (and increase in the sample) for low numbers of certain housing types to allow for adequate 'within housing type' analysis.

4 Depending on city population size.

04 Weighting

Rake weighting (or iterative proportional fitting) was used to create weights that are unique to each city. For the seven cities, each response was assigned a weight according to housing type of each housing structure, which is unique for each city according to the difference between the sample margins and the population distributions of the five housing types in the city (as determined by the listing data).

For more details on the methodology, please refer to Appendix 1.
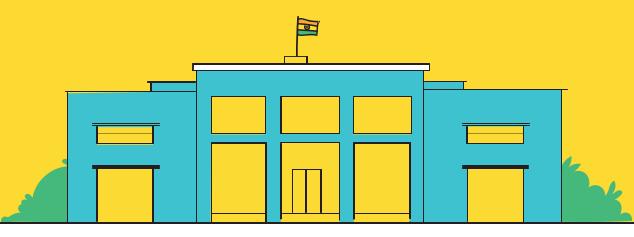
CITY IN FOCUS: BHOPAL

In this report, we provide a comprehensive overview of our quantitative findings from Bhopal. Where appropriate, we compare our findings to six other cities from the most recent phase, for which our data analysis is completed.

About the city

- Current population estimate

2023 - 24,47,000 people,[5] about

52% male   **48% female**

- Area of 463 sq.km, Bhopal is the 15th largest city in India.[6]

Bhopal

- In Swachh Survekshan 2017[7] and 2018[8] Bhopal was ranked the second cleanest city of the country and the cleanest capital city.

- Ranked third among the Million+ cities category in the Municipal Performance Index 2020.[9]

5   Population projection 2021 https://population.un.org/wup/DataQuery/

6   http://www.bhopalmunicipal.com/city-information/about-bhopal.html. Bhopal is a tier-II city and stands at number 15 out of all tier-I and II cities, in terms of total area.

7   https://swachhindia.ndtv.com/swachh-survekshan-2017-rankings-know-indias-cleanest-dirtiest-cities-7253/

8   https://www.ndtv.com/india-news/swachh-survekshan-2018-here-are-indias-top-3-cleanest-cities-1853125

9   https://www.insightsonindia.com/2021/03/05/municipal-performance-index-2020/#:~:text=Ranking%20of%20cities%3A&text=In%20the%20Million%2B%20category%3A%20Indore,followed%20by%20Tirupati%20and%20Gandhinagar.

About Bhopal Municipal Corporation (BMC) and local governance:

- **There are 85 wards and 21 zones in urban Bhopal.[10]**

- **In practice, the Urban Local Body (ULB) in Bhopal exclusively handles four functions out of 18 listed in the 74th Constitutional Amendment Act (CAA),[11] related to**
  - i.   Operation and maintenance of fire services,
  - ii. Operation and maintenance of burials and cremation grounds,
  - iii. Prevention of cruelty to animals, catching strays, sterilization, and ensuring general animal safety, and
  - iv. Regulation of slaughterhouses and tanneries.

- **The ULB has overlaps with other local agencies and state-level bodies for 10 functions.[12]**

- **For three functions (listed below), the urban local bodies are either merely implementing agencies or have limited role to perform.**
  - i.   Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded,
  - ii. Slum improvement and upgradation, and
  - iii. Urban poverty alleviation.

- **For planning for economic and social development, there is no role for urban local bodies to perform**

10   https://timesofindia.indiatimes.com/city/bhopal/bhopal-municipal-corporation-council-clears-proposal-for-2-more-zones-total-21-now/articleshow/94038096.cms

11   https://cag.gov.in/ag2/madhya-pradesh/en/audit-report/details/117203, pp,10, Table 3.1

12   Overlapping functions: i) Urban planning including town planning, ii) Provision of urban amenities and facilities such as parks, gardens, playgrounds, iii) installation and maintenance of public amenities including street lighting, parking lots, bus stops and public conveniences, iv) construction and maintenance of roads and bridges, v) water supply for domestic, industrial and commercial purposed, vi) related to public health, sanitation conservancy and solid waste management, vii) urban forestry, protection of the environment and promotion of ecological aspects, viii) Promotion of cultural, educational and aesthetic aspects, ix) vital statistics including birth and death registration, and x) regulation of land-use and construction of buildings.

- The BMC[13] looks after basic services to citizens, implementation, and monitoring of various development projects (social and physical infrastructure), increasing municipal revenue income, etc.

- There is a directly elected mayor as the head of the city, and a Municipal Commissioner as the head of the corporation.

- The Mayor, Mayor in Council and Municipal Commissioner have a key role in coordination between all line departments and agencies involved in development. They have full power over staffing and finances.

- Under the M.P. Nagar Palika Mohalla Committee (Constitution, Functions, Powers and Procedure for Conduct of Business) Rules, 2001[14] Bhopal has notified Mohalla committees at the ward level, and ward committees at the zonal level.[15]

- The departments that come under the Bhopal Municipal Corporation are revenue and tax, public works, fire services, health and sanitation, water supply, and e-governance.[16]

- List of agencies providing basic services to citizens:

1. Water and Sewerage:
City local government i.e., Bhopal Municipal Corporation (BMC).

2. Garbage and Waste Disposal Service:
City local government i.e., Bhopal Municipal Corporation (BMC). [17]

3. Electricity:
State government i.e., Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Limited (MPMKVVCL).[18]

4. Public transport:
City local government i.e., Bhopal Municipal Corporation's (BMC) wholly-owned subsidiary Bhopal City Link Limited (BCLL).[19]
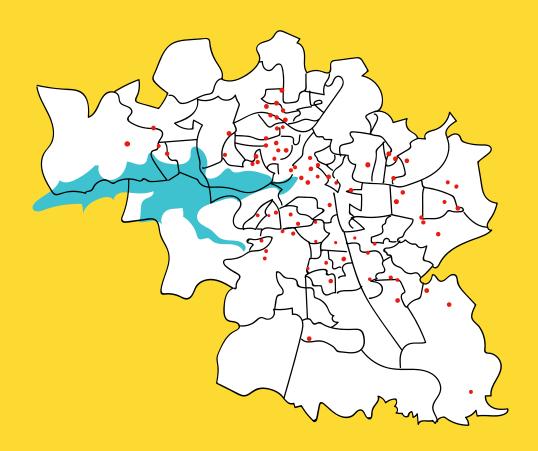
5. Road Repairs/Maintenance:
City local government i.e., under Bhopal Municipal Corporation, Public Works Department, and Bhopal Development Authority.[20]

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13 http://www.bhopalmunicipal.com/city-information/about-bhopal.html#:~:text=Bhopal%20Municipal%20Corporation%2C%20Bhopal%20has,to%20Increase%20the%20Municipal%20Revenue

14 http://www.bareactslive.com/MP/MP475.HTM

15 As per the Comptroller and Auditor General Report, 2022, Ward Committees were constituted only in Gwalior and Jabalpur, and Mohalla Committees only in Jabalpur Nagar Nigam (pp 27, Chapter III, https://cag.gov.in/ag2/madhya-pradesh/en/audit-report/details/117203)

16 https://www.bhopalonline.in/city-guide/utility-services-in-bhopal

17 http://www.bhopalmunicipal.com/city-information/about-bhopal.html

18 https://portal.mpcz.in/web/about-us/company-profile/

19 https://www.bhopalonline.in/city-guide/transportation-in-bhopal and https://timesofindia.indiatimes.com/city/bhopal/green-red-buses-pose-traffic-headache-on-bhopal-roads/articleshow/95367155.cms

20 https://timesofindia.indiatimes.com/city/bhopal/only-40-of-city-roads-repaired-lack-of-funds-biggest-hurdle/articleshow/96358074.cms

Achieved sample for Bhopal survey

Dates of survey - July to October 2022

Total achieved sample for Bhopal - 2129 citizens across 78 polling parts as shown in Figure 2.

The achieved raw sample is a close reflection of population data, particularly by religion and caste (see Table 1). The Housing Type (HT) distribution of the achieved sample broadly reflects the HT distribution of the listing data in Bhopal. There is, however, some deliberate over-representation of HT1s and HT5s in the sample (at the detriment of fewer HT2s). This was done deliberately through top-up sampling throughout the survey period to ensure adequate coverage of these HTs for 'within HT comparisons' since the absolute number (as per the listing) of HT1s and HT5s was low (see Table 2). To adjust for this, weighted data (using housing type listing proportions 1-5) is used throughout the report when not doing within HT type analysis. Nonetheless, it is important to note that the listing data proportion of HT1 and HT2 (which in combination represents all slum-type housing in our work), at 30.6% is a good reflection of the slum proportions from Census 2011 which stands at 26.68%. [21]

21 https://www.census2011.co.in/census/city/302-bhopal.html

Table 1: Census data and JBCI sample compared for Bhopal

	Total population			Literacy %	Religion %			Caste %	
	Total (n)	Male %	Female %		Hindu	Muslim	Others	SC	ST
Census[22]	17,98,218	52	48	73.4	74	22	4	13	3
Raw Sample	2129	55	45	86	73	24	3	13	3
Weighted data	2129	52	48	88	70	28	2	11	3

Table 2: Housing type structure listing and achieved sample data for Bhopal

Data	HT1	HT2	HT3	HT4	HT5	Total no.
Housing type listing (structures)	5.4	25.2	55.1	13.4	1,0	11051
Achieved (raw) sample (%)	11.2	16.3	48.9	20.2	3.3	2129

22 Actual population 2011: https://censusindia.gov.in/nada/index.php/catalog/687, pp 26. For religion: https://www.censusindia2011.com/madhya-pradesh/bhopal-population.html

GOVERNANCE

Key findings

- In Bhopal, citizens believe the local government's top priority should be the provision of education.

- Most Bhopal citizens believe the corporator is most important in ensuring that the neighbourhood receives public services from the provider (not the provider themselves).
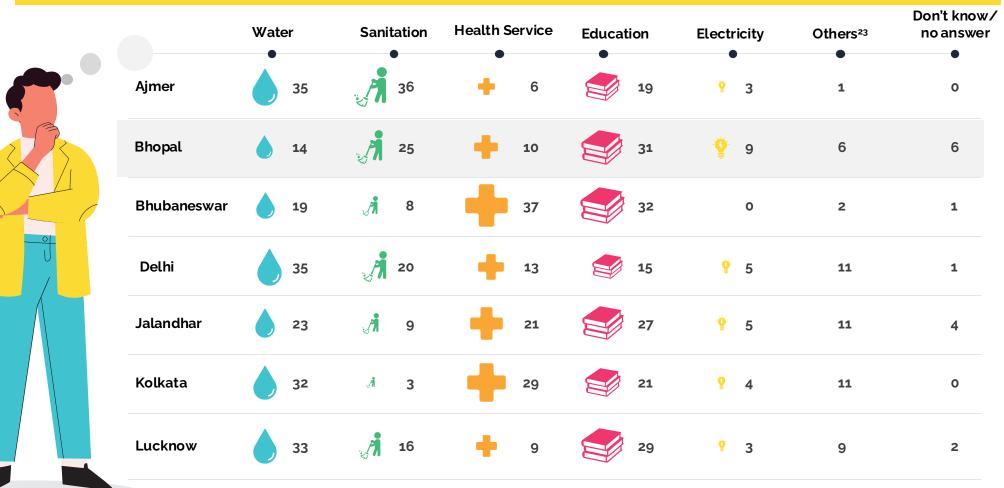
- Since COVID-19, citizens of Bhopal indicate their opinion of their corporator is considerably more positive than before the pandemic.

Citizens' opinions about delivery of basic services

The awareness, involvement, and opinions of citizens on what the municipal governments should be doing and how are they doing it is integral to understanding urban governance.

Table 3: Urban citizens' opinion about the most important service that the local government should provide (data in percentage)

	Water	Sanitation	Health Service	Education	Electricity	Others[23]	Don't know/ no answer
Ajmer	35	36	6	19	3	1	0
Bhopal	14	25	10	31	9	6	6
Bhubaneswar	19	8	37	32	0	2	1
Delhi	35	20	13	15	5	11	1
Jalandhar	23	9	21	27	5	11	4
Kolkata	32	3	29	21	4	11	0
Lucknow	33	16	9	29	3	9	2
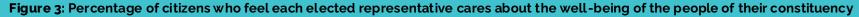
- Citizens of Bhopal feel education is the most important service that the local government should provide.

- While the provision of water is considered the most important service by almost one-third of citizens in the other six cities, this is considerably lower in Bhopal.

- In Bhopal, the provision of electricity is considered important by a greater proportion of citizens than in other cities.

23 Others include safety and personal security, clean air, public transportation, and housing.

Citizens' perceptions of key stakeholders in society

- Corporators, and elected representatives in general enjoy very high regard in all cities including Bhopal, as most of the citizens feel that the elected representatives care for their constituents.

- This sentiment is most prevalent in HT5s, where over 90 percent of the respondents feel that their elected representatives care for the constituents. With each subsequent housing type, from HT1 onwards, the level of confidence that the respondents have in their representatives, increases. There is over a 30 percentage point difference between HT1s and HT5s, regardless of the level of elected representative (corporator, MLA, MP).

- The effect of the COVID-19 pandemic is especially relevant here since almost 40 percent of citizens have had a positive shift in opinion regarding local corporators since the pandemic.

Figure 3: Percentage of citizens who feel each elected representative cares about the well-being of the people of their constituency

Legend: ■ Local Corporator ■ MLA ■ MP

City	Local Corporator	MLA	MP
Ajmer	96	98	98
Bhopal	77	77	76
Bhubaneshwar	92	89	88
Delhi	38	39	35
Jalandhar	65	66	56
Kolkata	72	59	56
Lucknow	55	50	48
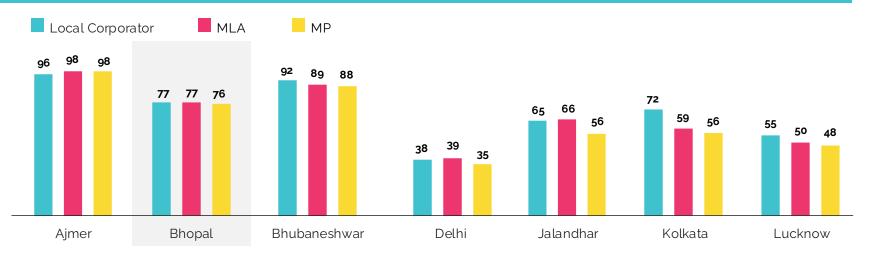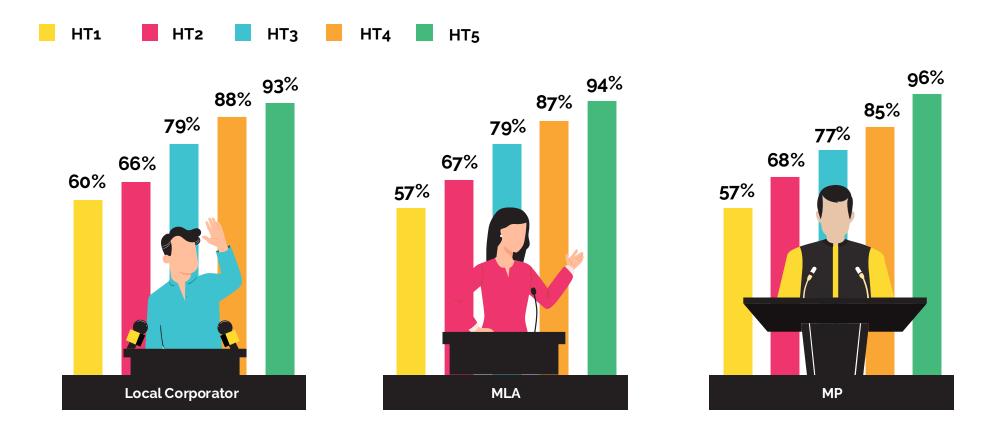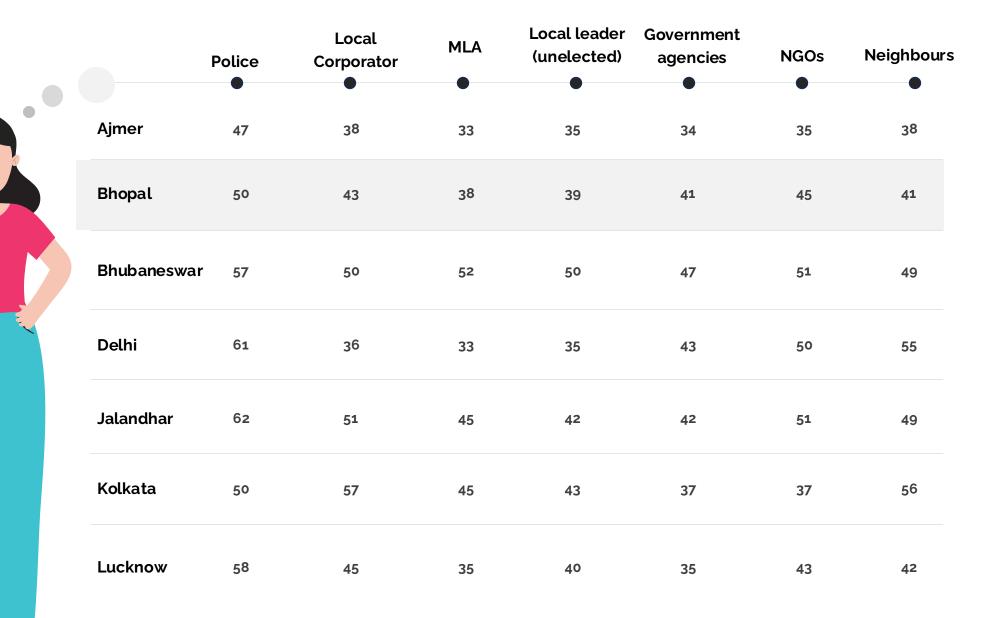
Figure 4: Percentage of Bhopal citizens who feel each elected representative cares about the well-being of all the people of their constituency

Legend: HT1 | HT2 | HT3 | HT4 | HT5

Local Corporator
- 60%
- 66%
- 79%
- 88%
- 93%

MLA
- 57%
- 67%
- 79%
- 87%
- 94%

MP
- 57%
- 68%
- 77%
- 85%
- 96%

Table 4: Percentage of citizens who feel more positive about specific stakeholders since the COVID-19 pandemic (data in percentage)

	Police	Local Corporator	MLA	Local leader (unelected)	Government agencies	NGOs	Neighbours
Ajmer	47	38	33	35	34	35	38
Bhopal	50	43	38	39	41	45	41
Bhubaneswar	57	50	52	50	47	51	49
Delhi	61	36	33	35	43	50	55
Jalandhar	62	51	45	42	42	51	49
Kolkata	50	57	45	43	37	37	56
Lucknow	58	45	35	40	35	43	42

Citizens' opinions about the role of key governance stakeholders in service delivery
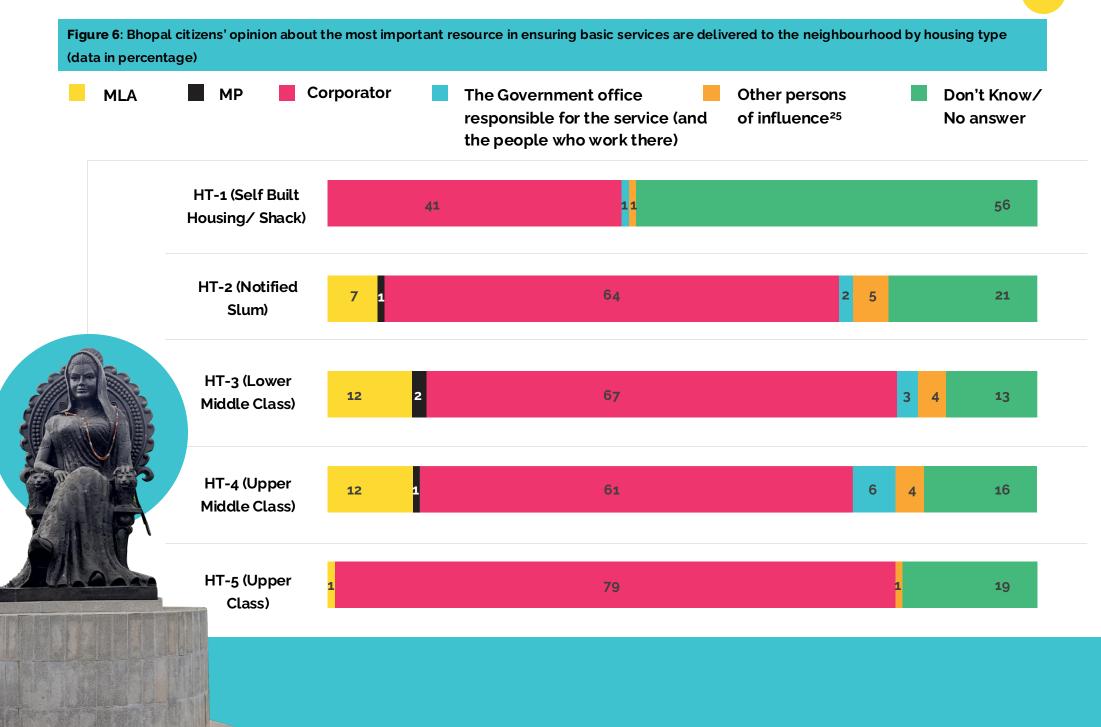
Urban Bhopal citizens' opinions about local and elected representatives

- Across all cities, the local corporator is felt to be the most important person to ensure basic services for the citizens and not the actual service provider.

- Those in upper-class housing (HT5) are most likely to say that the corporator is most important to ensure the delivery of basic services. Those in the informal settlements are more likely to not know who they think is most important in this regard. However, if you remove those who do not know, almost all those who do know, indicate it is the corporator (see Table 7).

Figure 5: Urban citizens' opinion about the most important resource in ensuring basic services are delivered to the neighbourhood (data in percentage)

Legend:
- MLA (yellow)
- MP (black)
- Corporator (pink)
- The Government office responsible for the service (teal)
- Other persons of influence[25] (orange)
- Don't Know/ No answer (green)

City	MLA	MP	Corporator	The Government office responsible for the service	Other persons of influence	Don't Know/No answer
Ajmer	4	2	91	1	1	2
Bhopal	10	1	65	3	4	16
Bhubaneswar	5	<1	77	2	3	12
Delhi	16	1	25	3	14	41
Jalandhar	23	7	31	5	18	17
Kolkata	16	1	73	1	6	2
Lucknow	5	2	57	12	10	15

24   Due to rounding, the total sums to more than 100.

25   Other persons of influence include local political leader (unelected), middlemen/ intermediary, and other persons of influence

Figure 6: Bhopal citizens' opinion about the most important resource in ensuring basic services are delivered to the neighbourhood by housing type (data in percentage)

Legend:
- MLA (yellow)
- MP (black)
- Corporator (pink)
- The Government office responsible for the service (and the people who work there) (blue)
- Other persons of influence[25] (orange)
- Don't Know/ No answer (green)

Housing Type	MLA	MP	Corporator	Govt office	Other persons	Don't Know/No answer
HT-1 (Self Built Housing/ Shack)			41	1	1	56
HT-2 (Notified Slum)	7	1	64	2	5	21
HT-3 (Lower Middle Class)	12	2	67	3	4	13
HT-4 (Upper Middle Class)	12	1	61	6	4	16
HT-5 (Upper Class)	1		79		1	19

CITIZENSHIP

Key findings

Bhopal citizens consider voting as their top responsibility in a democracy.

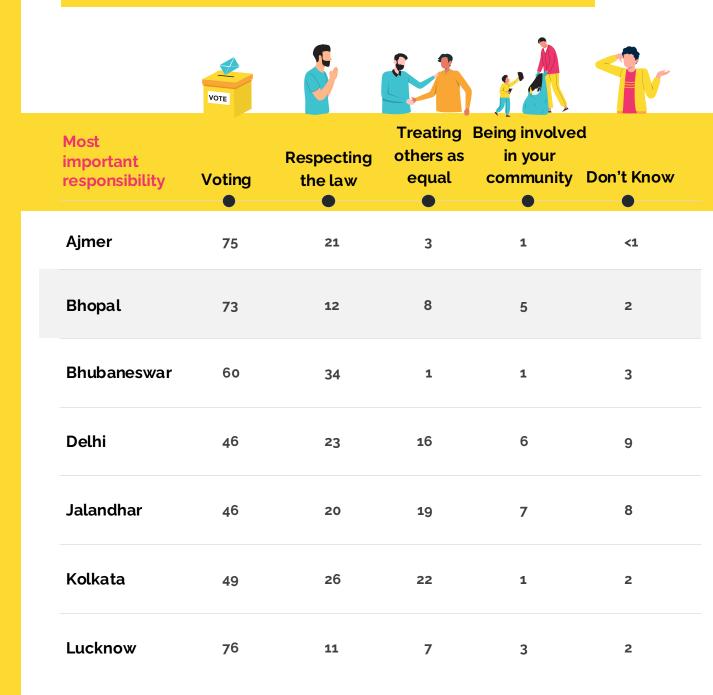**70%** of citizens in Bhopal report they are registered to vote for all layers of government.

We observe a variation among housing types, where the most self-reported registrations are from HT5s and HT1s respectively.

VOTE

Citizens' opinions about their responsibilities in a democracy

- All urban residents in our sample have more vertical citizenship than horizontal. By vertical citizenship, we mean how citizens view their rights and obligations vis-a-vis the state, and by horizontal citizenship, we mean how citizens view their obligations and rights vis-a-vis fellow citizens.

- Bhopal is no exception, where citizens consider voting as their most important responsibility and self-reported voter registration stands at 70 percent. This responsibility is followed by respecting the law while treating others as rights-bearing and engaging in civic activities is less embedded in their consciousness.

- In Bhopal, the highest response rate for voting as an important responsibility comes from those residing in upper-class housing (HT5), followed closely by those residing in informal shacks (HT1).

Table 5: Urban citizens' opinions about the most important responsibility of citizens in a democracy (data in percentages)

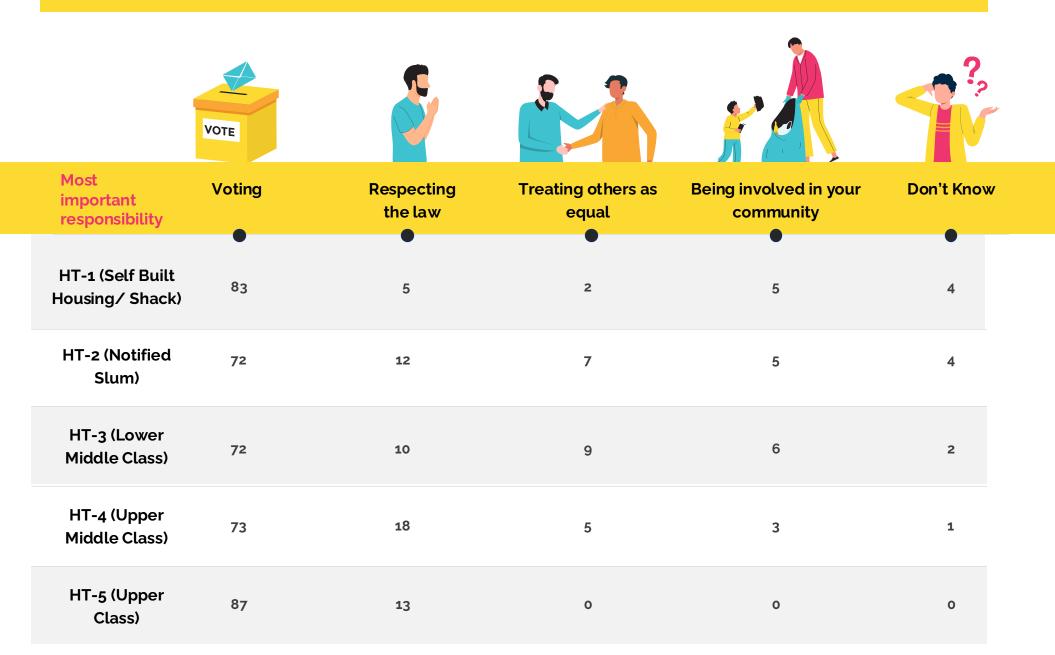| Most important responsibility	Voting	Respecting the law	Treating others as equal	Being involved in your community	Don't Know
Ajmer	75	21	3	1	<1
Bhopal	73	12	8	5	2
Bhubaneswar	60	34	1	1	3
Delhi	46	23	16	6	9
Jalandhar	46	20	19	7	8
Kolkata	49	26	22	1	2
Lucknow	76	11	7	3	2
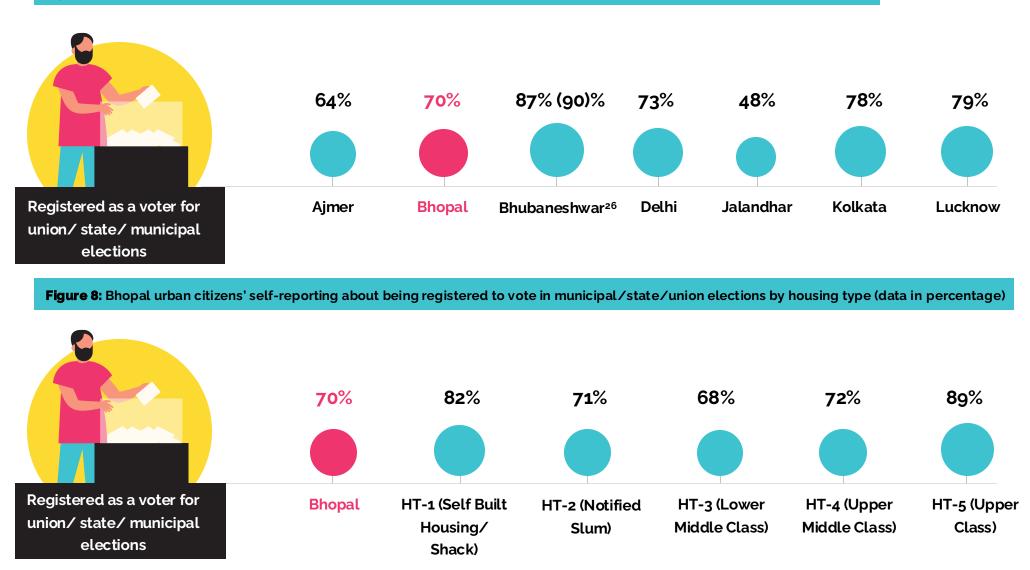
Table 6: Urban Bhopal citizens' opinions about the most important responsibility of citizens in a democracy by housing type (data in percentages)

Most important responsibility	Voting	Respecting the law	Treating others as equal	Being involved in your community	Don't Know
HT-1 (Self Built Housing/ Shack)	83	5	2	5	4
HT-2 (Notified Slum)	72	12	7	5	4
HT-3 (Lower Middle Class)	72	10	9	6	2
HT-4 (Upper Middle Class)	73	18	5	3	1
HT-5 (Upper Class)	87	13	0	0	0

Citizens' self-reporting about being registered to vote

Figure 7: Urban citizens' self-reporting about being registered to vote in municipal/state/union elections (data in percentage)

Registered as a voter for union/ state/ municipal elections

64%	70%	87% (90)%	73%	48%	78%	79%
Ajmer	Bhopal	Bhubaneshwar[26]	Delhi	Jalandhar	Kolkata	Lucknow

Figure 8: Bhopal urban citizens' self-reporting about being registered to vote in municipal/state/union elections by housing type (data in percentage)

Registered as a voter for union/ state/ municipal elections

70%	82%	71%	68%	72%	89%
Bhopal	HT-1 (Self Built Housing/ Shack)	HT-2 (Notified Slum)	HT-3 (Lower Middle Class)	HT-4 (Upper Middle Class)	HT-5 (Upper Class)

26 In an unstarred question (no.1516) asked in Lok Sabha on 10th February 2021, the Minister of Law and Justice clarified that all states and union territories are sharing the voter list. Hence, the same electoral rolls are used for national, state, municipal, and panchayat elections. However, in Bhubaneswar local knowledge suggested the separate electoral lists may still be in use, so separate questions were asked about municipal elections. Self-reported voter registration for municipal elections is given in brackets.

- In Bhopal, 70 percent of citizens report they are registered to vote for all layers of government. We observe a variation among housing types, where the most self-reported registrations are from HT5s and HT1s respectively. Though seemingly unusual to have such high voter registration among those residing in shack-type housing, there is lower migration and the State Election Commission has made considered efforts to get citizens enrolled.[27]

- At 68 percent, HT3s are the lowest at self-reporting of being registered as voters, in Bhopal. HT2 and HT4, report very similar numbers of voter registrations, though 10-18% lower than those in HT1s and 5s.

27 https://www.tandfonline.com/doi/abs/10.1080/09584935.2020.1775179

CITIZEN PARTICIPATION

Key findings

The citizen participation index scores for Bhopal residents are about average, compared to other cities.
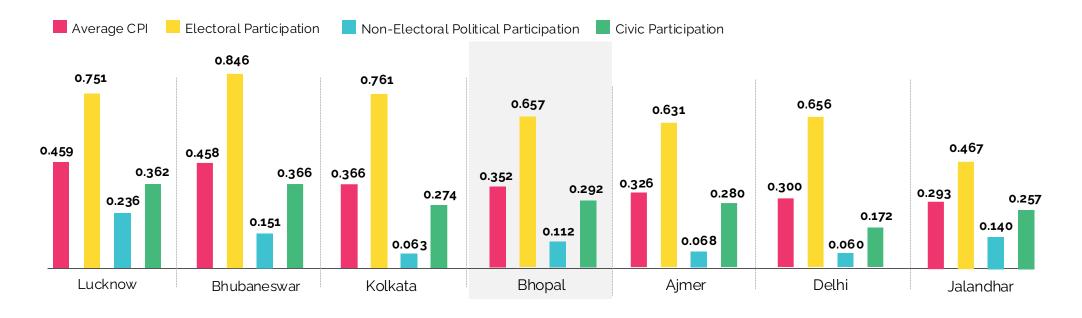
The participation scores for Bhopal urban citizens in HT5s i.e., upper-class housing, are the highest among all other housing types in the city. The same is true for HT1s' participation, which is highest among all HT1s of other surveyed cities.

Citizen participation

To create a holistic picture of citizen participation, we created a citizen participation index (CPI). The index comprises three components including political participation (electoral), non-electoral political participation, and civic participation. The index is created from the responses to multiple questions. The index calculates a score between 0 and 1, which means that a score closer to zero would signify low participation, and a score of one would mean that the citizen participated in all activities[28]. Though it should be noted that the forms of participation considered vary and it is, for example, arguably much easier/less time intensive to vote than join an association or engage in non-electoral activities.

Figure 9: Average citizen participation index and components' score by city

Legend: Average CPI | Electoral Participation | Non-Electoral Political Participation | Civic Participation

Lucknow: 0.459, 0.751, 0.236, 0.362
Bhubaneswar: 0.458, 0.846, 0.151, 0.366
Kolkata: 0.366, 0.761, 0.063, 0.274
Bhopal: 0.352, 0.657, 0.112, 0.292
Ajmer: 0.326, 0.631, 0.068, 0.280
Delhi: 0.300, 0.656, 0.060, 0.172
Jalandhar: 0.293, 0.467, 0.140, 0.257

Key Findings

01 The average CPI scores of all sampled cities is below 0.5. Bhopal has an average CPI score as among the sampled cities.

02 As for most urban citizens, Bhopal citizens participate most by voting, in an average of 2 out of the last 3 elections of different tiers of government.

03 Urban citizens of Bhopal tend to participate more in civic or community activities and attend local or ward committees, than in non-electoral activities

28 For more information on the CPI, please refer to Appendix 2.

Table 7: CPI scores by Housing Type

	HT-1 (Self Built Housing/ Shack)	HT-2 (Notified Slum)	HT-3 (Lower Middle Class)	HT-4 (Upper Middle Class)	HT-5 (Upper Class)
Ajmer	0.195	0.323	0.325	0.325	0.369
Bhopal	0.362	0.368	0.347	0.343	0.425
Bhubaneswar	0.267	0.443	0.476	0.461	0.438
Delhi	0.198	0.280	0.299	0.327	0.311
Jalandhar	0.102	0.187	0.309	0.238	0.260
Kolkata	0.353	0.387	0.363	0.343	0.326
Lucknow	0.245	0.403	0.460	0.483	0.448

Key findings

- In Bhopal, the citizens residing in HT5s, participate the most in civic and political activities, among all other housing types. There is very little difference in all the other citizens' participation.
- The only other city where we see HT5s participating most is Ajmer.
- Overall, participation by HT1s is lowest across all cities and considerably lower even than HT2s in most cities. However, in Bhopal, HT1s' participation is the highest among all other HT1s in other cities.

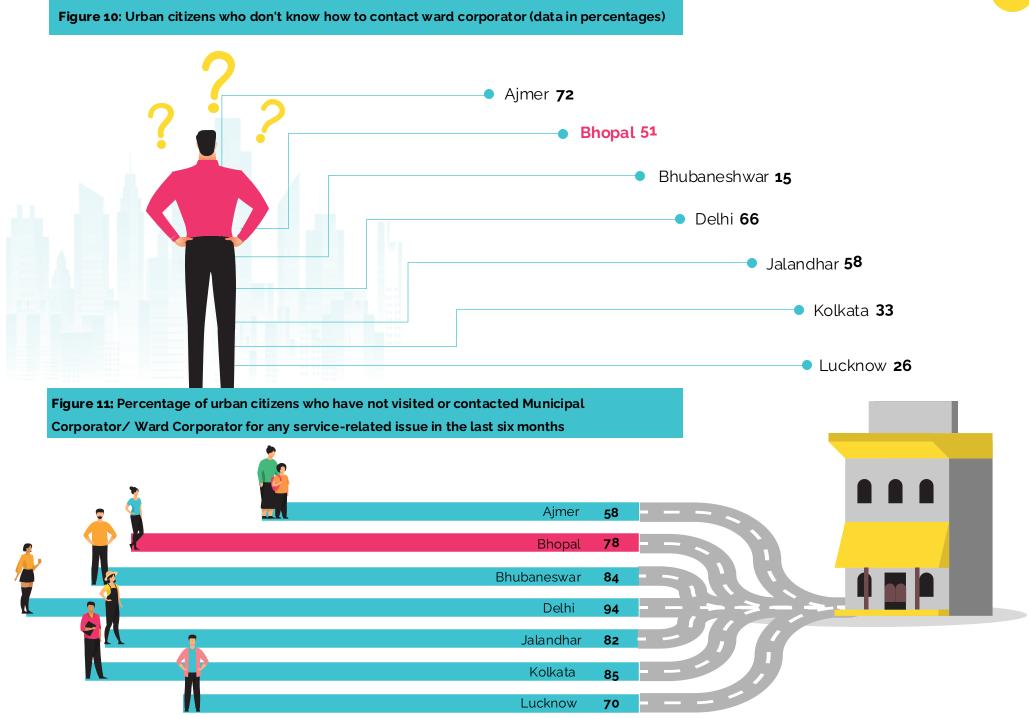# Citizens' awareness of ward committees and engagement with corporators

Table 8: Urban citizen's awareness and attendance in ward committee meetings (data in percentages)

	Aware about ward committees (yes)	If yes, attended ward committee meetings in the last year
Ajmer	4	67
Bhopal	10	68
Bhubaneswar[29]	42	62
Delhi	6	41
Jalandhar	14	53
Kolkata	37	11
Lucknow	25	83

- Urban Bhopal though has notified the formation of ward and Mohalla committees for increased local participation, the committees are not very active.[30] As per the CAG report of 2022, Mohalla committees are only constituted in Jabalpur in the whole state of Madhya Pradesh. Very few Bhopal citizens are aware of their functioning or activity, and hence it is not surprising that overall, citizen participation in these committees is low.

- Among all other sampled cities, Bhubaneswar and Kolkata report a much higher percentage of citizen awareness about ward committees.[31]

- Half of the citizens in Bhopal do not know how to contact their local ward corporator, and the majority have not visited the municipal corporator/ward corporator even once in the last six months. This is especially interesting since over 60 percent of Bhopal residents suggest that the corporator is the most important resource in ensuring basic services to the neighbourhood. With a range of mechanisms for engagement on grievance redressal (such as calling or text messaging), these may be considered as more expedient ways to communicate issues without direct visitation and engagement.

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[30] https://cag.gov.in/ag2/madhya-pradesh/en/audit-report/details/117203, pp 18, section 3.3.3. A journalist based out of Bhopal also informed our team that ward committees are only on paper, and Mohalla samitis are active only in few slums such as in Shanti Nagar

[31] In Bhubaneswar, though the ward committees (in the strictest sense of what ward committees are) are not that active, it is the slum development associations (SDAs), that are very active, and have been constituted through government intervention. In Kolkata as well, while the area sabhas or ward committees are not very active (in each ward), there are borough committees (constituted for a few wards together) that are much more active.

[29] In Bhubaneswar, though the ward committees (in the strictest sense of what ward committees are) are not that active, it is the slum development associations (SDAs), that are very active, and have been constituted through government intervention. In Kolkata as well, while the area sabhas or ward committees are not very active (in each ward), there are borough committees (constituted for a few wards together) that are much more active.

Figure 10: Urban citizens who don't know how to contact ward corporator (data in percentages)

Ajmer **72**

Bhopal 51

Bhubaneshwar **15**

Delhi **66**

Jalandhar **58**

Kolkata **33**

Lucknow **26**

Figure 11: Percentage of urban citizens who have not visited or contacted Municipal Corporator/ Ward Corporator for any service-related issue in the last six months

City	Value
Ajmer	**58**
Bhopal	**78**
Bhubaneswar	**84**
Delhi	**94**
Jalandhar	**82**
Kolkata	**85**
Lucknow	**70**

BASIC SERVICE DELIVERY

Key findings

Urban Bhopal residents have the second lowest score in basic service delivery, as compared to all other sampled cities.

All three tier-II cities of Lucknow, Bhopal, and Bhubaneswar, report the lowest scores in service delivery respectively.

In urban Bhopal, the service delivery score for HT1s is the lowest, and this has a marked improvement for HT2s. The scores increase slightly for HT3 and HT4 but dip a little for HT5s.

Piped water connections are present for almost all the population, irrespective of housing types, and socio-economic class. However, the main challenge faced by the households is the duration of daily water supply. Most of the households report some water coming in on all days of the week, however, less than half of HT1s report having more than 2 hours of water, and less than one-fourth of HT2s and HT3s report having 2 hours of water daily.

As we go beyond HT2s, the dependence on borewells for water supply, increases.

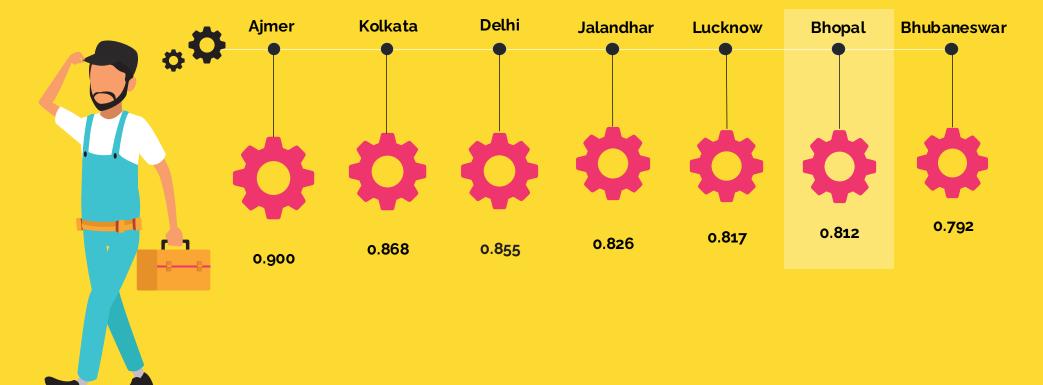Only about one-third of HT1s have metered electricity connections.

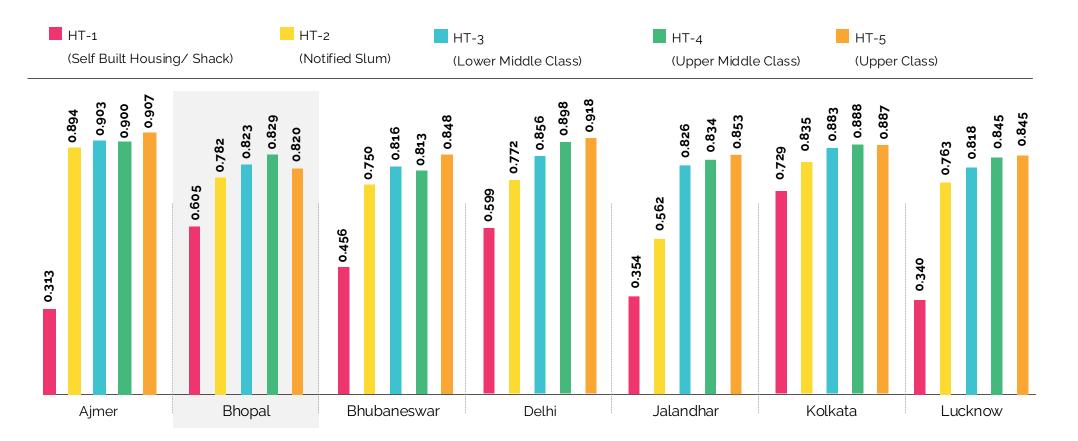# Basic Service Delivery Index (BSDII)

To provide a composite picture of the quality of basic services, we created an index which was a comprehensive measure of access to services including drinking water, sanitation, electricity, condition of roads in front of the house, and the likelihood of the house getting flooded The index goes from 0 to 1, with :

0- meaning that a household gets no services and is often subject to flooding,

1- meaning continuous 24/7 delivery of water and electricity, a flush toilet that is connected to a sewer line (or septic tank) and does not get clogged, and good roads, and no flooding in the house or neighbourhood (see Appendix 3 for more details).

Figure 12: Basic service delivery index scores for sampled cities

Ajmer	Kolkata	Delhi	Jalandhar	Lucknow	Bhopal	Bhubaneswar
0.900	0.868	0.855	0.826	0.817	0.812	0.792

Figure 13: BSDII score by city and household types

■ **HT-1**
(Self Built Housing/ Shack)

■ **HT-2**
(Notified Slum)

■ **HT-3**
(Lower Middle Class)

■ **HT-4**
(Upper Middle Class)

■ **HT-5**
(Upper Class)

City	HT-1	HT-2	HT-3	HT-4	HT-5
Ajmer	0.313	0.894	0.903	0.900	0.907
Bhopal	0.605	0.782	0.823	0.829	0.820
Bhubaneswar	0.456	0.750	0.816	0.813	0.848
Delhi	0.599	0.772	0.856	0.898	0.918
Jalandhar	0.354	0.562	0.826	0.834	0.853
Kolkata	0.729	0.835	0.883	0.888	0.887
Lucknow	0.340	0.763	0.818	0.845	0.845

Key Findings

01 Most cities overall report a relatively high BSDII score but these scores are highly differentiated by socio-economic class.

02 Service delivery drops off markedly from HT2 to HT1 settlement households and it is the latter who receive the lowest quality of basic services.

03 In most cities, including Bhopal, there is little difference in basic service delivery between those in HT3s, 4s, and 5s.
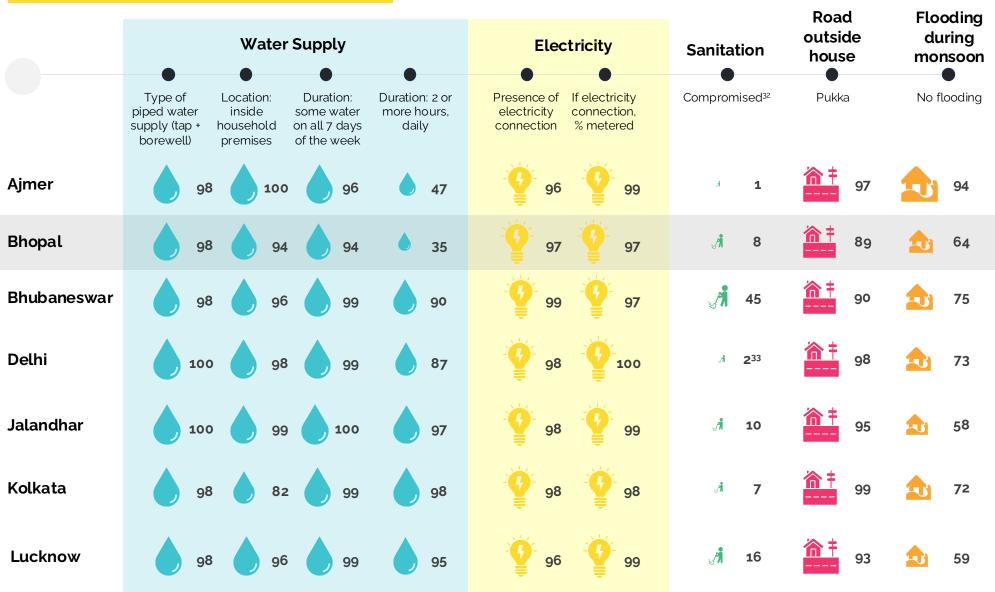
04 Bhopal comes third from last for the overall BSDII score. A lack of metered electricity connections as well as almost 40% of respondents reporting compromised sanitation in HT1s, pull down the overall score.

Breakdown of basic service provision

Table 9: Availability of basic services (data in percentage)

	Water Supply				Electricity		Sanitation	Road outside house	Flooding during monsoon
	Type of piped water supply (tap + borewell)	Location: inside household premises	Duration: some water on all 7 days of the week	Duration: 2 or more hours, daily	Presence of electricity connection	If electricity connection, % metered	Compromised[32]	Pukka	No flooding
Ajmer	98	100	96	47	96	99	1	97	94
Bhopal	98	94	94	35	97	97	8	89	64
Bhubaneswar	98	96	99	90	99	97	45	90	75
Delhi	100	98	99	87	98	100	2[33]	98	73
Jalandhar	100	99	100	97	98	99	10	95	58
Kolkata	98	82	99	98	98	98	7	99	72
Lucknow	98	96	99	95	96	99	16	93	59

32 Compromised Sanitation: (1) No Latrine within Premises: (1) Open Defecation (2) Public Latrine (3) Pit Latrine (Open) (4) not connected to any Other System (not connected to a sewer line): Open drainage into the ground or into water body through a covered drain or uncovered drain.
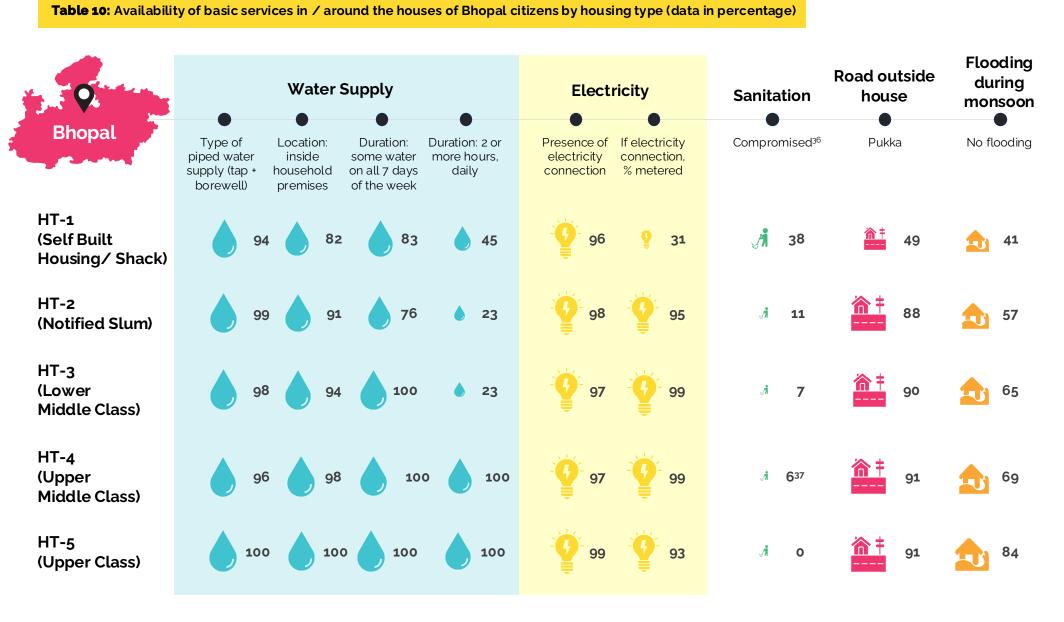
33 This figure is counter-intuitive from our understanding of the ground realities. There may have been some mis-interpretation of the question when translated into Hindi and this is being explored.

- A high percentage of Bhopal residents report availability of piped water in the household. A little more than 10 percent of HT3, 4, and 5 report piped water received from borewells[34] as well.

- Over 90 percent of respondents from HT2-5s report that the location of the water tap is inside the household premises. It is those in HT1s who are most likely to report the tap as outside of their household premises.

- Despite this seemingly more positive picture of access to water, the actual supply is very poor in Bhopal for many households. Only just over one-third of Bhopal residents report having water supply for over 2 hours every day, the lowest across our sampled cities. It is those in HT1-HT3s who are least likely to get water for more than two hours per day. All those in HT4s and HT5s report having water for almost 24 hours every day. All respondents from HT3s, 4s and 5s said that they get some water supply on all days of the week. However, HT2s and 1s respectively are less likely to receive some water supply for all seven days.

- There is also a clear class division when it comes to electricity access in Bhopal. Citizens in HT1s face severe issues of availability of metered electricity connections,[35] and there is a marked increase (almost triple) in the number of respondents reporting metered electricity connections from HT1 to HT2.

- Almost 40% of HT1 residents report using compromised sanitation facilities. This number comes down drastically to just over 10% in HT2s.

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34 The city Municipal Corporation also operates borewells, and it is not clear from the residents' responses whether the reported piped water is actually from a municipal water pipeline, or a borewell (household-wise response for borewell: HT1: <1%, HT2: 2%, HT3: 11%, HT4: 23%, HT5: 20%). In Bhopal, local knowledge suggests that most of the HT3,4,5 households who report a borewell connection, have a private connection within their household premises.

35 During FGDs, it was reported that most people use jumper connections (illegal connections). They also narrated that they pay Rs. 200-300/ month to the person who got them those illegal connections, and there are frequent power outage issues.
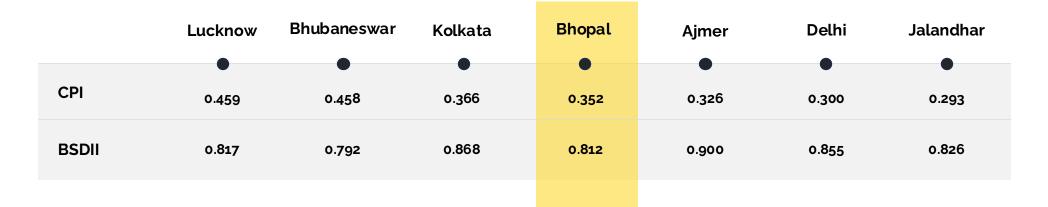
Table 10: Availability of basic services in / around the houses of Bhopal citizens by housing type (data in percentage)

Bhopal

	Water Supply				Electricity		Sanitation	Road outside house	Flooding during monsoon
	Type of piped water supply (tap + borewell)	Location: inside household premises	Duration: some water on all 7 days of the week	Duration: 2 or more hours, daily	Presence of electricity connection	If electricity connection, % metered	Compromised[36]	Pukka	No flooding
HT-1 (Self Built Housing/ Shack)	94	82	83	45	96	31	38	49	41
HT-2 (Notified Slum)	99	91	76	23	98	95	11	88	57
HT-3 (Lower Middle Class)	98	94	100	23	97	99	7	90	65
HT-4 (Upper Middle Class)	96	98	100	100	97	99	6[37]	91	69
HT-5 (Upper Class)	100	100	100	100	99	93	0	91	84

36 Compromised Sanitation: (1) No Latrine within Premises: (1) Open Defecation (2) Public Latrine (3) Pit Latrine (Open) (4) not connected to any Other System (not connected to a sewer line): Open drainage into the ground or into water body through a covered drain or uncovered drain.

37 Use of compromised sanitation is counter-intuitive for these housing type groupings. There may have been some mis-interpretation of the question when translated into Hindi and this is being explored.

Relationship between citizen participation and service delivery

For assessing the potential impact of participation on service delivery we begin by comparing the citizen participation index scores with the basic service delivery and infrastructure index scores for all cities.

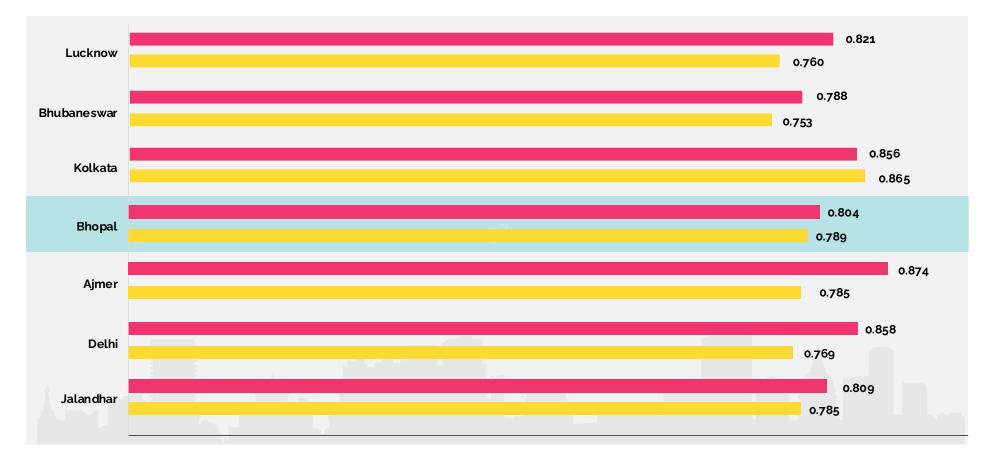**Table 11:** Comparison of CPI and BSDII scores by city

	Lucknow	Bhubaneswar	Kolkata	Bhopal	Ajmer	Delhi	Jalandhar
CPI	0.459	0.458	0.366	0.352	0.326	0.300	0.293
BSDII	0.817	0.792	0.868	0.812	0.900	0.855	0.826

Bhopal manages an average CPI score in comparison to other sampled cities. However, if we observe the BSDII scores, Bhopal is in third place from the bottom of the list, just above Lucknow, and Bhubaneswar. We also notice that Lucknow tops the list for CPI scores but is third from last for the BSDII score. However, when we look specifically within cities, we see a much more nuanced and clearer picture emerge. As can be seen in Figure 14, in all cities, except Kolkata, those citizens who have above-average participation scores, also have higher BSDII scores.

Figure 14: Above and Below average CPI scores, and corresponding BSDII scores

■ BSDII for above average CPI   ■ BSDII for below average CPI

City	BSDII for above average CPI	BSDII for below average CPI
Lucknow	0.821	0.760
Bhubaneswar	0.788	0.753
Kolkata	0.856	0.865
Bhopal	0.804	0.789
Ajmer	0.874	0.785
Delhi	0.858	0.769
Jalandhar	0.809	0.785

0   1.0

Additionally, when we look at the same distinction of high/low participation within different housing types in Bhopal, we see some particular differentiation of service and infrastructure delivery, notably by those residing in HT2-4s inclusive. Those with above-average participation in HT2-4 households have a higher BSDII score than those with below-average participation.

Generally speaking, across cities, as we have seen, the BSDII scores improve as we go up the housing ladder. In all cities, the largest jump in improved services is from HT1 to HT2. What is particularly interesting, however, is that in HT1s in all cities, except Bhopal, those who participate more, have better services. This differentiation that participation makes is seen most strongly in HT1s as compared with other HTs, regardless of city. It is important to note that the findings in this section describe the overall relationships found within the data. These need further exploration and context on a city-by-city basis.
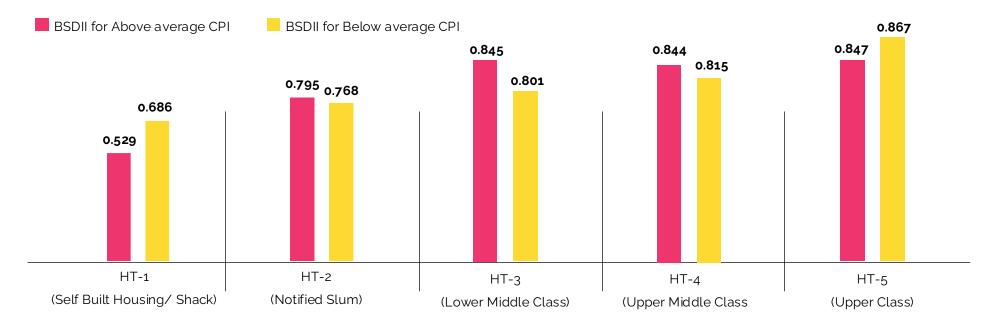
Figure 15: BSDII scores split by high/low participation and housing type in Bhopal

| | BSDII for Above average CPI | BSDII for Below average CPI |

| HT-1 (Self Built Housing/ Shack) | HT-2 (Notified Slum) | HT-3 (Lower Middle Class) | HT-4 (Upper Middle Class) | HT-5 (Upper Class) |

0.529 | 0.686 | 0.795 | 0.768 | 0.845 | 0.801 | 0.844 | 0.815 | 0.847 | 0.867

WAY FORWARD

Urban Bhopal residents have the second lowest score in basic service delivery, as compared to all other sampled cities. Service delivery is lowest for those residing in shacks (HT1s), as is the case across cities, with a marked improvement even as you move to those residing in slums (HT2s). At the same time, citizen participation is average in Bhopal compared with other cities and characterized mostly by voting and civic and community activities, rather than non-electoral political activities. Whereas participation is greatest in Bhopal among those in HT5s, those in HT1s in the city participate considerably more than citizens in HT1s in other cities However, thie relationship between participation and service delivery needs further exploration.

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Improve transparency, accountability and participation

While citizen participation is average in Bhopal, to enhance it further there are a series of innovations that can be brought in from the policy perspective as well as implementation of already existing regulations. These include:

- Activate ward committees and Mohalla samitis functional across wards and slum areas respectively.

- Mandate ward offices to **display ward budgets and current projects underway** for public viewing and scrutiny.

- Amend Madhya Pradesh Municipal Corporation Act, 1956 to mandate:

  i.   **Participatory budgeting/public consultation** as part of municipal budgeting, and notify corresponding rules to institutionalize the same and ensure continuity.

  ii. Bhopal Municipal Corporation (BMC) to have a **digital governance policy/roadmap**, and a **citizen charter**, as powerful tools of accountability and grievance redressal.

  iii. BMC to conduct an **annual internal audit** of processes and internal controls and mandate the **publication of the internal report in public domain.**

  iv. BMC to **adopt open data standards, and publish key financial and operational data in open data format on the city government websites at regular intervals**.

- Amend Madhya Pradesh Municipal Corporation Act, 1956 to provide for a **Municipal Ombudsman**, to redress citizen grievances related to service delivery and failure of civic agencies and empower the Ombudsman **to investigate corruption suo motu and resolve inter-agency disputes.**

Fix other City-Systems

As described in the introduction of this report, the ability of a city to delivery good quality of life depends on the laws, policies, institutions and institutional processes that underpin urban governance. To conceptualize these factors, diagnose urban problems and - more importantly - solve them, we need to view them in a systems framework. The "City-Systems" framework is a framework created by Janaagraha that helps us identify the root causes of our urban challenges and its components are regularly reviewed through the Annual Survey of India's City Systems.[38] 'Transparency, Accountability, and Participation' is a key component of the City-Systems framework. However, there are three other key areas under which reforms and amends need to be considered which would help to strengthen the governance system to deliver good quality of life to citizens in Bhopal. These include urban planning and design, urban capacities and resources – finance and human resources and empowered and legitimate political representation.

38 Janaagraha Centre for Citizenship and Democracy (2017): Shaping India's Urban Agenda. Available: https://www.janaagraha.org/asics/report/ASICS-report-2017-fin.pdf [accessed 15-05-2023].

Urban planning and design

As mentioned in ASICS (2017, p. 8),[39] 'well-made and well-executed Spatial Development Plans (SDP) lie at the heart of economically vibrant, equitable, environmentally sustainable and democratically engaged cities. India's cities suffer from acute lack of planning.'

Relevant to Bhopal therefore, the Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973 can be amended to mandate decentralized planning at all levels. In addition, it can be amended to include the participation of parastatals, civic agencies, and the public in the process through formal platforms like ward committees and area sabhas. In addition, to ensure plan enforcement, the act can be amended to prevent approval of plans not in conformity with the spatial plan, ensure effective monitoring systems for ongoing projects and strengthen penalization provisions for plan violations.

39 Janaagraha Centre for Citizenship and Democracy (2017): Annual Survey of India's City-Systems – Shaping India's Urban Agenda. Available: https://www.janaagraha.org/asics/report/ASICS-report-2017-fin.pdf [accessed 15-05-2023].

EMERGENCY

Urban capacities and resources – finance and human resources

ASICS (2017) also highlights the need for large amounts of capital to be available for cities to invest. These investments need to be in bridging the gaps in current infrastructure as well as new developments. Additionally, it's needed for revenue expenditure such as operations and maintenance (including HR) and hiring of talent to deliver the same.

Pertinent to Bhopal, amendments can be made to the Madhya Pradesh Municipal Corporation Act, 1956 to empower BMC to levy and collect profession and advertisement tax, raise borrowings without prior approval, and mandate the creation of medium-term fiscal plans. In addition, ensuring the timely constitution of the State Finance Commission is imperative to positively impact the financial position of Urban Local Bodies.[40] Madhya Pradesh is yet to constitute the 6th State Finance Commission.

Furthermore, the Madhya Pradesh Municipal Corporation Act should mandate medium-term and annual workforce plans that align to these fiscal plans and are underpinned by a Performance Management System (PMS) with quantitative performance metrics at the staff and department level.

Empowered and Legitimate Political Representation

Mayors and Councilors in Indian cities don't have full decision-making authority over critical functions and services such as planning, housing, water, environment, fire and emergency services, etc.'(ASICS, 2017, p. 14).[41] As per Comptroller and Auditor General's performance audit report[42] , city governments in Madhya Pradesh are solely responsible for only four functions, have overlapping jurisdiction with other civic agencies/state departments over 10 functions, and are mere implementing agencies of three functions. The Madhya Pradesh Municipal Corporation Act, 1956 should be amended to devolve all 18 functions as obligatory/mandatory functions as per the 12th schedule.

While Bhopal has a directly elected mayor with a five-year term, amendments can also be made to the Madhya Pradesh Municipal Corporation Act, 1956 to empower city governments to assess their own staff requirement and in particular empower the Mayor/Council with the authority to appoint the Municipal Commissioner.

40   Audit Reports | Accountant General (Audit-ll) Madhya Pradesh, Bhopal. (n.d.). https://saiindia.gov.in/ag2/madhya-pradesh/en/audit-report/details/117203

41   Janaagraha Centre for Citizenship and Democracy (2017): Annual Survey of India's City-Systems – Shaping India's Urban Agenda. Available: https://www.janaagraha.org/asics/report/ASICS-report-2017-fin.pdf [accessed 15-05-2023].

42   Audit Reports | Accountant General (Audit-ll) Madhya Pradesh, Bhopal. (n.d.). https://saiindia.gov.in/ag2/madhya-pradesh/en/audit-report/details/117203

APPENDIX 1

Methodology

Key respondent interviews

Key respondents were interviewed in each city, before the start of the formal quantitative survey, to understand the local context on service provision, municipal and urban issues faced by the city, and also to get specific information on wards and neighbourhoods for sampling purposes.

For Bhopal, the key respondents' interviews were conducted in January 2020. As mentioned earlier, we spoke to Municipal Commissioners, Mayors of the city, and in some instances local and state level elected representatives as well.

Focus group discussions

In Bhopal, the focus group discussions took place on 4th and 5th January 2020. The two discussions were held in neighbourhoods with marginalised communities. As part of the discussions, the respondents were asked questions on basic services such as water, electricity, sanitation, health and education etc., in their neighbourhood. A few points on their local corporator, as well as the access to BPL cards, Aadhaar cards etc. were also noted during the discussions. These FGDs took place before the first wave of the COVID-19 pandemic, hence, no questions related to COVID-19 were asked. However, questions related to the pandemic were included in the quantitative survey later on.

Large, quantitative, representative household surveys

Sampling: We employed a multi-stage stratified systematic random sampling strategy that stratified polling parts to generate a representative sample of polling parts across each city taking care to ensure citizens from marginalised communities were included. After identifying the wards and assembly constituencies falling within the city municipal corporation area, and all polling parts within each of these political-administrative units, the polling parts were stratified.

Household listing and classification: Listing and categorization of all houses within a sampled polling part was done by a field team which literally walked through the entire area identified in the base maps and drew the buildings onto the base maps and assigned the housing type. The listed data thus provided a full inventory of all the households located in our geographically delineated sections of our randomly selected polling parts giving us a complete distribution of residential structures by housing type classification and formed the sampling frame from which we ultimately selected households.

Each sampled polling part in the city was mapped in a spatial manner, and each building was allocated a Housing Type (HT Category - HT1 are un-notified slums/ shacks, HT2 are informal settlements or slums, HT3 are the lower middle-class housing, apartments, mostly single floor, made of only concrete, HT4 include middle-class housing of independent houses or apartment buildings, and HT5 are upper class Housing, including apartment complexes/gated communities with amenities.)

Survey: The quantitative survey in Bhopal was conducted after the second phase of the COVID-19 pandemic. Face-to-face interviews were conducted in Hindi, and through CAPI method (computer-assisted personal interviews). Since Bhopal was a mid-tier city (tier-II city), the targeted sample was 2000 respondents. However, we achieved a total sample of 2129 respondents at the end of the survey.

Weighting and Index creation:

Rake weighting (or iterative proportional fitting) was used to create weights that are unique to each city. We have chosen to reweight the sample data according to the respondents' housing type (at the structure level from our household listings). From our previous work, we know that our housing type measure is the biggest predictor among all our socio-economic variables for levels of service delivery and citizenship. As a principle, weighting necessitates that there are reliable population margins for all categories of a variable upon which one seeks to adjust one's data.[43] Since we lack reliable population counts for OBCs and General/Forward Castes (the census only reports SC/ST), we cannot adjust our data using Census data. Given the relatively poor economic conditions of many individuals belonging to SC/ST groups, we expect that weighting along the housing type will reduce bias and make our sample more representative. Note that our household listing data, collected between 2021-2022 in 7 project cities, provides a comprehensive, census-like account of the distribution of dwelling types in each city at the structure and unit/household level.

We did not weight by gender because the focus of the survey is on the household, rather than the individual level, and so should not greatly affect results. Empirically, religion and gender weights were shown not to significantly affect the reported results for a representative subset of the questionnaire. We have reason to believe that reweighting along housing type mitigates the effect of higher proportions of Dalits and Adivasis. From a theoretical perspective, housing type serves as a reasonable proxy for socioeconomic status. Given the relatively poor economic condition of many individuals belonging to SC/ST groups, we expect that weighting along housing type will reduce bias introduced through larger proportions of this subpopulation.[44]

43 Solon, Gary; Steven J. Haider, and Jeffrey M. Wooldridge. 2015. "What Are We Weighting For?," Journal of Human Resources, 50(2): 301-316.

44 There is evidence emerging in the literature on segregation and housing type. For more, read Bharathi, Naveen, Deepak Malghan and Andaleeb Rahman (2019), "Neighbourhood-scale Residential Segregation in Indian Metros", Economic and Political Weekly, 54(30):64-70. Thorat, Sukhadeo, Anuradha Banerjee, Vinod K Mishra and Firdaus Rizvi (2015), "Urban Rental Housing Market", Economic and Political Weekly, 27:47-53. and Vithayathil, Trina and Gayatri Singh (2012), "Spaces of Discrimination", Economic and Political Weekly, 47(37):60-66

APPENDIX 2

09

Construction of the Citizen Participation Index (CPI)

The CPI has three components:
(1) Electoral participation,
(2) Non-electoral participation, and
(3) Civic participation.

(1) Electoral participation – Voting in national, state, and municipal elections is coded 1 if a respondent voted in an election and 0 otherwise.

(2) Non-voting participation includes whether a respondent is a party member, contributes time during election campaigns, attends political rallies and meetings between elections, and discusses specific candidates among family, friends, and others within the community. Each of these elements takes the form of a dummy variable and is coded 1 for "yes" and 0 if "no".

(3) Civic participation includes whether a respondent attends ward committee meetings, holds membership in non-political, non-government organizations and associations, and perceptions of community participation in preventing harassment of women in the neighbourhood. Each of these is coded 1 if "yes" and 0 if "no".

While the end-points of the index mark the two extremes of citizen participation - no participation to full participation, and are clear to understand, the values in-between represent different combinations of the three components of participation.

APPENDIX 3

Construction of Basic Service Delivery and Infrastructure Index (BSDII)

1. Water   **2. Sanitation**   **3. Electricity**   **4. Flooding /water-logging**   **5. Type of Road**

The BSDII is based on 5 dimensions of household infrastructure:

1. *Water* Infrastructure component of BSDII comprises of:

i.   Access to water,

ii.   Convenience in accessing water,

iii.   The usability of the water a household receives,

iv.   The ability (and methods) of households to store water, and

v.   The frequency of water supply for a household.

2. The electricity infrastructure dimension is based on three elements of electricity supply.

i.   Does a household have power?

ii.   How often are there power outages in a week?, and

iii.   How many hours does a household go without power during such outages?

3. In order to measure sanitation infrastructure in a household we consider the following elements,

i.   The type of toilet a household has and (among those with a modern sanitation system connected to a main sewer line), and

ii.   Whether, and how often, the line connecting the household to the main sewer gets blocked.

4. In order to measure the vulnerability of households to flooding and water logging during monsoon we asked:

i.   Does the ground floor of the building you live in get flooded during monsoon?

5. We measure the type of road by classifying it into: paved (pucca) or unpaved (kuccha).

BSDII assigns equal weights to the three components that are directly connected to household infrastructure - water, power, and sanitation, and half-weights to flooding and roads. Implicit is the notion that the first three components "count" more for a household than the latter two. Our index equation is therefore:

BSDII = [(Water) + (Power) + (Sanitation) + 0.5*(Flooding) + 0.5*(Road)]/4

About Janaagraha Centre for Citizenship and Democracy

Janaagraha is a non-profit trust working towards the mission of transforming the quality of life in India's cities and towns. It works with citizens to catalyze active citizenship in city neighbourhoods and with governments to institute reforms to city governance (what we call "City-Systems"). Civic Participation, City Finance, and Urban Policy & Research are Janaagraha's three major strands of work to accomplish its mission.

The interpretation of the survey and results as presented are entirely those of Janaagraha Centre for Citizenship and Democracy.

Bhopal