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EXPRESS Technology Sabha
An Express Group Initiative

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How smart are our cities?

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Foreword

The Indian Government has truly stepped on the accelerator with respect to smart cities by announcing an initiative to convert 100 cities to smart cities by 2018. This is imperative because cities are already bursting at the seams, and India's growth of population has to be accompanied by a commensurate growth in urban infrastructure. While numerous state governments have announced their smart city plans, the approach to become a 'smart city' has been different. Some cities have been extremely successful and are rated extremely well in many social, economic and urban components, while some have been found wanting.

If India has to truly derive the full potential of the idea of 'smart cities', it is crucial to do a comprehensive assessment to reveal a clear situation of the current state of the identified smart cities with respect to defined parameters. Cities can look at their current state, and benchmark themselves against the best ranked cities.

It is in this context, that Express Computer, one of India's most respected IT publications with a focus on e-governance and enterprise technology, has partnered with PwC, a respected analyst firm with huge domain expertise in smart cities, to launch the second edition of the report, 'Assessment of Indian Cities for Smart City Transformation'.

In this year's report, performance based assessment has been conducted for 20 major Indian cities in terms of the operational effectiveness of the urban services being delivered to its citizens. More importantly, the report assesses the effectiveness of the strategies of 10 cities in a period one year, which gives an indication of the approach for other cities to emulate.

The researchers have employed a combination of analytical and comparative methods of research in this report. The methodology includes desk research, internal assessment and the analysis of the quality of life in the city on the basis of parameters like power, water, transportation, hospitals, disaster management, administration, etc. The information has been obtained mainly from research papers and various public reports and statistics, and through various resources owned by the government and the city administration.

We believe that this assessment will help policymakers and city administrators to understand current and emerging needs of the city and assist in developing strategies to make it more attractive, prosperous and sustainable while advancing towards the wellbeing of its citizens and communities. The city-assessment, compiled in this report, is expected to serve as a benchmark for further driving the conversation on smart cities.

Smart cities are truly an opportunity to transform India, and we believe that this report will help cities accelerate towards their goal of significantly improving the goal of improving the quality of life for the common citizen.

Neel Ratan
Partner and Leader G&PS

Srikanth RP
Editor, Express Computer

1. About the assessment

An overview

Our planet, which is inhabited by over 7 billion people, is in the middle of a colossal change. The pressure of catering to the needs of the ever-increasing population and the constant rise in the demand for basic amenities such as water, energy, infrastructure and a clean environment are having a tremendous impact on the ecosystem. Urbanisation is propelling social and environmental challenges. In India, 31% of the population currently lives in cities, with people migrating to urban areas for better employment opportunities, healthcare and educational facilities as well as improved liveability and a higher standard of living. This trend is expected to continue in the coming years, with city population growth by 2030 projected at almost 50%. Cities are characterised by strained infrastructure which manifests itself as power cuts and water shortages, a high cost of living, and unaffordable real estate, resulting in urban sprawl and slums, and a high volume of traffic that causes pollution and delays.

The motivation to become a smart city is driven by the need to surpass the challenges posed by traditional and conventional cities. Overcoming these critical challenges in a systematic manner is critical for cities to attain sustainable and progressive growth, while meeting the needs of all its stakeholders: citizens, businesses and governments.

Acknowledgment of the fact that the real India resides in large as well as small cities has led to the proposition of developing 100 smart cities. This will serve to ease the pressure of migrant population in existing urban enclaves and ensure that the struggles associated with urban living (slums, smog, sewage and congestion) become a thing of the past.

In our previous report, 'How smart are our cities?' which was released at the 17th edition of the Express Technology Sabha, we had deliberated on the various aspects of the smart city concept and presented a competitive assessment of the existing infrastructure as well as the various social factors of 10 major Indian metros and leading cities to reveal how the city operates and services its citizens and provide a clear picture of its current state to policymakers and city administrators. The report essentially aimed to understand the current and emerging needs of cities and assist in developing strategies to make them more attractive, prosperous and sustainable while advancing towards the well-being of their citizens and communities.

The report also highlighted the importance of developing an effective transformation and implementable strategy dovetailing the efforts of all the city actors to achieve the future development of sustainable and competitive cities that addresses social, environmental and economic issues in a holistic manner and provide opportunities to all their stakeholders and inhabitants.

In this year's report, performance-based assessment has been conducted for 20 major Indian cities in terms of the operational effectiveness of the urban services being delivered to the citizens. The 10 cities analysed in the previous report have also been included in the analysis to assess the effectiveness of their start-to-smart journey over the period of one year. A comprehensive assessment of the current situation of each city is conducted using various social, economic and urban components and metrics. One of the main objectives of this assessment was to reveal the current situation of these cities in terms of the selected parameters. This assessment will help policymakers and city administrators to understand the current and emerging needs of the cities and assist in developing strategies that make the cities more attractive, prosperous and sustainable.

The city assessment compiled in this report is expected to further drive the conversation on smart cities.

From the time the first Tech Sabha previous report was released, considerable progressive development has taken place in terms of addressing city challenges and bringing about the required changes. The new government at the Centre has embarked on an ambitious journey to transform the landscape of India by setting up several smart cities across the country.

The Indian government has undertaken concrete steps to make smart cities a reality with the launch of **'India's 100 Smart Cities Challenge'** in 2015, where 100 aspirant cities competed with each other to come up with holistic plans for becoming model cities.

The first round of the Smart Cities Challenge received a tremendous response across the nation, with city administrators and government officials of participating cities enthusiastically engaging with citizens to shape a clear vision which captures each city's strategic ambition. Workshops, webinars, fairs, walkathons and social media were leveraged across cities to stimulate discussion on the possible avenues for merging the concept of sustainability with the smart city framework to improve the quality of life for city inhabitants. Several lakhs of responses were received from citizens regarding key focus areas, pain areas and prospective solutions to make their city smarter and more liveable.

In Round 1, the 100 participating cities were evaluated on a set of stringent parameters and guidelines. The first list

of 20 smart cities for the Smart Cities Challenge was released in January 2016. These 20 cities would be the first in line to receive funds to achieve the goal of transforming into a smart and sustainable city that can address social, environmental and economic issues in a holistic manner while making the most of future opportunities. These cities are currently improving upon their proposals for necessary compliance on the basis of counsel from the panel of experts who evaluated them. They will be rigorously monitored to ensure adherence to the committed timeline for the implementation of the smart city proposals.

The list of the first 20 cities that were selected:

1. Bhubaneswar, Orissa
2. Pune, Maharashtra
3. Jaipur, Rajasthan
4. Surat, Gujarat
5. Kochi, Kerala
6. Ahmedabad, Gujarat
7. Jabalpur, Madhya Pradesh
8. Vishakhapatnam, Andhra Pradesh
9. Solapur, Maharashtra
10. Davangere, Karnataka
11. Indore, Madhya Pradesh
12. New Delhi Municipal Corporation
13. Coimbatore, Tamil Nadu
14. Kakinada, Andhra Pradesh
15. Belagavi, Karnataka
16. Udaipur, Rajasthan
17. Guwahati, Assam
18. Chennai, Tamil Nadu
19. Ludhiana, Punjab
20. Bhopal, Madhya Pradesh

In a bid to ensure equity in opportunities to all states and union territories, a list of 23 additional cities was prepared. These cities were given an opportunity to participate in a fast-track programme to improve their proposals and resubmit them for evaluation by 30 May 2016. Out of these, 13 cities were selected to compete in the next cycle of the India Smart Cities Challenge.

The list of fast-track cities that were selected:

1. Lucknow, Uttar Pradesh
2. Warangal, Telengana
3. Shimla, Himachal Pradesh
4. Chandigarh, Chandigarh
5. Raipur, Chhattisgarh
6. New Town Kolkata, West Bengal
7. Bhagalpur, Bihar
8. Panaji, Goa
9. Port Blair, Andaman and Nicobar Islands
10. Imphal, Manipur
11. Ranchi, Jharkhand
12. Agartala, Tripura
13. Faridabad, Haryana

The remaining cities were provided the chance to compete in Round 2 of the challenge, where the revised proposals were submitted on 30 June 2016.

The results for Round 2 were released in September 2016 where the names of 27 cities in 12 states were announced. The government has proposed a total investment of Rs. 144 742 crores for 60 cities under Smart City Project.[1]

The third list of cities that were selected:

1. Amritsar
2. Kalyan
3. Ujjain
4. Tirupati
5. Nagpur
6. Ajmer
7. Aurangabad
8. Hubli
9. Gwalior
10. Hubli-Dharwad
11. Jalandhar
12. Kalyan-Dombivali
13. Kohima
14. Kota
15. Madurai
16. Mangalore
17.Namchi
18. Nashik
19. Rourkela
20. Salem
21. Shivamogga
22. Thane
23. Thanjavur
24. Bangalore
25. Vadodara
26. Vellore
27. Kanpur
28. Agra
29. Varanasi

1. http://www.smartcitiesprojects.com/union-ministry-released-third-list-27-cities-12-states/

It is to be kept in mind that the concept of a smart city must be merged with sustainability for the welfare of people and our planet as a whole. The marriage of innovation with technology will go a long way in optimising the management of infrastructure and resources and, at the same time, focussing on inclusiveness and a greener environment. Smart sustainable cities will lay the foundations for a better future—a future where cities care for people, the earth, air, water and the environment.

While our previous report highlighted urbanisation as a national-level concern and focussed on a competitive assessment of 10 Indian cities to empower city governments to take proactive steps to transform for balanced growth, the current report goes a step further in evaluating 10 more cities in addition to the progress of the previous 10 in terms of utilisation of technology, existing and planned infrastructure investments to provide a higher quality of living to residents and a positive investment climate for businesses, and allowing the maximisation of resource utilisation and transparency for governments. We believe this report will provide the right impetus to policymakers and stimulate progressive debate on sustaining rapid urbanisation across India.

City assessment approach

We adopted a structured approach that involved the detailed assessment of fundamental and critical data vectors for smart city transformation and took cognisance of city readiness to achieve the smart city vision. For the 10 cities of the previous report, the smart city proposals available on the Ministry of Urban Development website were studied to understand the progressive initiatives taken/proposed and these were considered in the readiness vector. In order to develop a comprehensive picture of individual cities, every city was assessed on the basis of social, economic and urban characteristics. Further, several data vectors, as defined in subsequent sections of this report, were explored. The research methodology included three core activities to build and validate various parameters and findings as part of the study.

Desk research

Our research team started by identifying the research goals, information areas, boundaries, information reliability and validation procedures. City components that are critical to smart city transformation were identified and emphasis was laid on assessment and investigation around them. These components were then mapped with the city departments and agencies responsible for their operations and management. A mapping exercise was conducted to develop a clear scope boundary and to focus efforts around the right areas only.

The team relied on information and literature from the following sources:

- Various Indian government information portals
- City-specific government websites
- City-specific department websites
- Our previous report 'How smart are our cities'
- Smart city proposals available on the Ministry of Urban Development website
- Research papers available publicly
- Public reports and statistics, surveys done by various analyst organisations

Internal assessment

Smart city transformation entails the integrated development of various sectors that contribute to city operations and the delivery of competent services to city inhabitants. These sectors are also interconnected. Improvement in one enables improvement in others and vice versa. We looked at the journey of the global cities that have embarked on a similar transformation and the sectors that played a vital role in this transformation. We rationalised our findings within the Indian city administration set-up and finalised the following key sectors as part of the social, economic and urban review of each of the cities.

Social	Urban	Economic
Health	Power	Municipal corporation
Education	Water	Sustainability
Safety	Transport	
Disaster management	Sewerage and sanitation	
	Solid waste management	
	Storm water drainage	

Detailed sectoral analysis was conducted and across each identified sector, and metrics were developed for smart city benchmarks and target operating values. A city's current performance level and service delivery mechanism were then given a score on the basis of its compliance to and deviation from these benchmark and target values. We identified 63 benchmarks which have been assessed and rated across three data vectors:

- Current status (includes the smart city proposal interventions as preparedness for the current report)
- Technology intervention
- Contribution to smart city

Out of these 63 benchmarks, 57% depict an urban overview; 25%, a social overview; and the remaining provide an economic overview of the cities. During the assessment, care was taken to use the most recent data available.

- Current status: Defines the current level of city performance and service delivery across each of the benchmark. In the current report, it includes the smart city proposal interventions as preparedness to transform.
- Technology intervention: Defines the use and state of technology solutions for city operations and the delivery of various city services. It includes the interventions proposed in the respective city's smart city proposals.
- Contribution to smart city: Defines the vitality index and the contribution made by individual benchmarks in city operations.

These data vectors are assessed on a scale of one to three, three being the highest rating and one the lowest. Weights have been assigned to these data vectors on the basis of their significance and contribution to help assess the preparedness of the cities.

Data vector/rating	Rating 1	Rating 2	Rating 3
Current status	High service delivery	Medium service delivery	Low service delivery
Technology intervention	High technology involvement (for city monitoring and control points)	Medium technology involvement (limited to city monitoring only)	Low technology involvement
Contribution to smart city	Essential to a smart city, fundamental requirement	Significant to a smart city	Least significant for a smart city

The final score has been derived as per the following formula:

Final score = (Current status*0.3) + (technology intervention*0.3) + (contribution to smart city*0.4)

High weightage is assigned to 'contribution to smart city' to give a clear view of critical components that need immediate attention and efforts. Further, we have provided a list of key parameters that are required to be assessed by policymakers and city administrators before embarking upon the smart city transformation journey.

Rationalisation of assessment results and city rankings

We rationalised our assessment findings by carrying out a micro-level analysis of the initiatives taken by individual departments of the cities in their respective sectors across all identified benchmarks. To substantiate our findings and ratings against the benchmarks, we examined in detail the kind of ground-level initiatives and mechanisms being currently utilised. We have developed a toolkit that has helped us standardise the data vectors across all identified cities and benchmarks. It has consolidated scores on a scale of one to ten for each benchmark. Score of all the benchmarks across the three sector Social, Urban, Economics have been added to arrive at the final city rankings.

2. City Ranking's and Assessments

Our previous report, 'How smart are our cities?' released at the 17th edition of the Express Technology Sabha provided a competitive assessment of the existing infrastructure as well as various social factors of 10 major Indian metros and leading cities – Bangalore, Pune, Jaipur, Chennai, Kolkata, Delhi, Mumbai, Hyderabad, Ahmedabad and Surat. Various aspects of the smart city concept were deliberated upon in the report to reveal how the city operates and services its citizens, while providing a clear picture of its current state to policymakers and city administrators.

*Ranking and Summary of cities in the **previous report***

Cities	Total Score	Rank
Bangalore	6.697	4
Pune	6.581	8
Jaipur	6.581	8
Chennai	6.916	2
Kolkata	6.618	7
Delhi	6.775	3
Mumbai	6.626	5
Hyderabad	6.202	9
Ahmedabad	6.625	6
Surat	6.994	1

City/utilities	Bhopal	Gurgaon	Bhubaneshwar	Indore	Kochi	Noida	Lucknow	Chandigarh	Ludhiana	Dehradun
Power	7.87	6.97	8.17	8.07	8.47	6.97	8.07	8.07	7.67	7.67
Water	6.50	6.67	8.00	7.50	7.33	6.94	7.00	7.00	7.00	6.67
Safety	6.83	7.58	6.58	7.33	8.08	7.08	6.83	6.83	7.08	6.83
Disaster management	6.60	6.40	7.00	6.80	7.20	6.40	6.60	6.60	6.60	6.60
Transport	6.15	5.59	7.04	7.15	6.59	5.81	6.93	6.93	5.70	5.70
Sewerage and sanitation	5.67	5.67	6.33	6.67	6.33	6.00	6.67	6.67	5.67	5.33
Solid waste management	5.60	5.80	5.80	6.60	5.80	5.60	6.40	6.40	5.00	5.00
Storm water drainage	5.22	4.89	6.22	5.56	5.89	5.89	6.22	6.22	4.22	4.56
Health	6.67	8.33	8.00	8.00	8.00	8.00	8.00	8.00	6.67	8.00
Education	6.00	6.75	6.75	6.50	6.00	6.75	7.50	7.50	6.25	7.25
Municipal corporation	6.05	6.33	7.76	7.67	7.81	5.62	6.33	6.33	6.90	5.19
Sustainability	5.00	5.25	6.00	6.58	7.08	5.50	5.75	5.75	5.50	5.50
Total	6.179	6.353	6.971	7.035	7.049	6.381	6.858	6.858	6.741	6.880

In this year's report, we have conducted performance-based assessment for additional 10 Indian cities in terms of the operational effectiveness of urban services being delivered to the citizens.

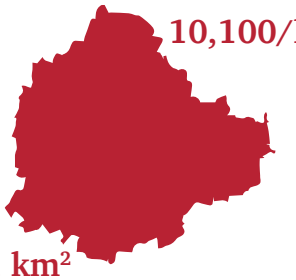
Ranking and Summary of cities in ***Current Report***

Cities	Total Score	Rank
Bhopal	6.179	9
Gurgaon	6.353	8
Bhubaneshwar	6.971	3
Indore	7.035	2
Kochi	7.049	1
Noida	6.381	7
Lucknow	6.858	5
Chandigarh	6.858	5
Ludhiana	6.741	6
Dehradun	6.880	4

Bangalore

Bangalore | City snapshot

Total area and population density



10,100/km²

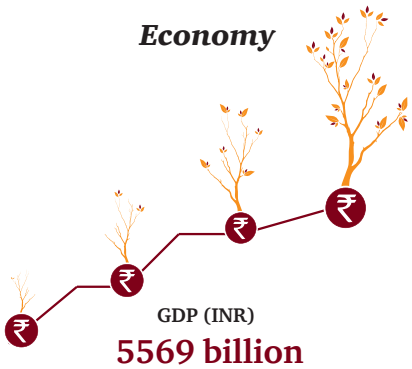
741 km²

Total population and gender ratio

52%

84.43 Lakh

Economy



GDP (INR)

5569 billion

City demographics

Population growth rate
47.18%

Per capita:
2,71,387 INR (Urban)
1,27,264 INR (Rural)

Literacy rate:
88.71%

Crime index:
50.00

Urban transport

Bangalore Metro: Phase 1
Buses: 6400
Taxi
Autorickshaw
Local railway

City theme

Silicon Valley city

Cost of living

Grocery index 26.36

Local purchasing power 26.13

Rent index 8.6

Restaurants index 16.39

Pollution index

Air PI	Water PI	Noise PI
75.6	77.3	64.79

Next-gen infrastructure

- Namma Metro
- Traffic signal camera
- Intelligent transport system

Urban transport

- Bangalore Electricity Supply Company
- Bangalore Water Supply and Sewerage Board
- Bruhat Bangalore Mahanagara Palike
- Karnataka State Natural Disaster Monitoring Centre
- Karnataka Fire and Emergency Services
- Bangalore Police
- Revenue Department Office
- Karnataka Education Department
- Department of Health and Family Welfare
- Bangalore Metropolitan Transport Corporation
- RTO
- Bangalore Development Authority

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.7
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.4
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2
	Billing efficiency				2
	Revenue realisation				2.3
Water	24x7 water supply				2.1
	Metering of water connections				1.7
	Billing efficiency				2
	Online payment facility				2.7
	Water losses				1.8
	Revenue realisation				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				2.1
	Verification, validation or clearance				2
	Complaint response time				2
Disaster management	Disaster prediction system: Flood, earthquake, etc.: Early warning system				1.8
	Disaster alarms and response system				2.1
	Efficient firefighting systems				2.4
	Fire stations basis population density				2.1
	Availability of fire stations with special devices and materials for firefighting				2.1
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detection				2.6
	Challan management				2
	Traffic management system				2.4
	City parking management				1.7
	Access to para-transit				1.7
	Availability and frequency of public transport				2
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m wide on either side of all street				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water, sewerage network				3
	Treatment of waste water				2
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				1.7
	Recycling of solid waste				2
	City solid waste that is disposed of in a sanitary landfill, open dump, burnt				1.3
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				1.7
	Rainwater harvesting				1.3
	Evacuation of water				1.7
Health	Number of hospitals based on population density requirement				2.4
	Healthcare facilities				2.1
	Emergency response facilities: Ambulance, emergency ward, etc.				2.1

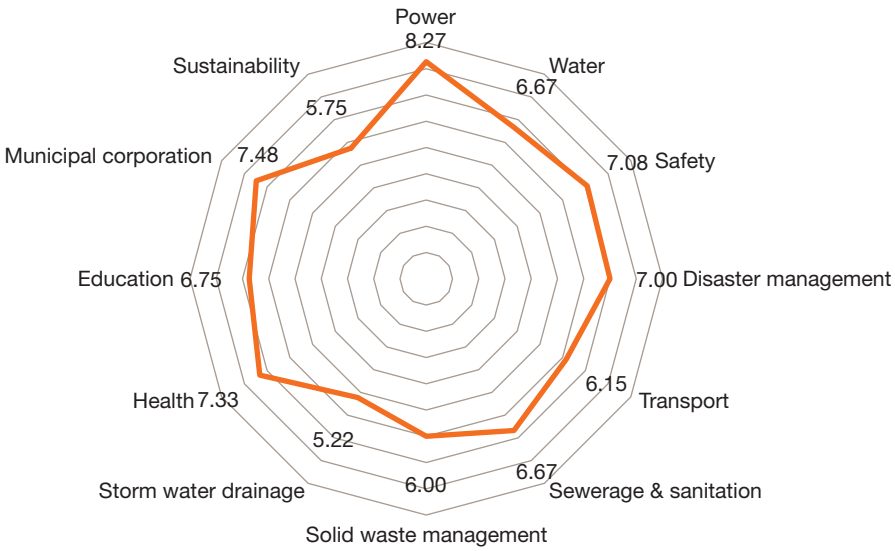
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	No. of schools				2.4
	School for specially abled				1.7
	College based on population density requirement				2
	Professional colleges based on population density requirement				2
Municipal corporation	Property tax payments				2.6
	Online license issues				2.3
	Complaint registrations				2
	Licenses issuance TAT				2.3
	RTI TAT				1.6
	Registration of birth and death				2.6
	Online building plan sanctions				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Bangalore



Bangalore, the Silicon Valley city, has a consolidated score of 8.27 on power. BESCOM has taken number of initiatives for distribution of power, although there are frequent cases of outage in summers. In transport, the city has a consolidated score of 6.15, although there is a major shortage of means of public transport. BMTC buses form a major part of public transport as the metro has very limited coverage. In the areas of safety, disaster management, and sewerage and sanitation, the city has scores of 6.83, 6.60 and 6.67, which are slightly above average scores. Bangalore is required to considerably improve its technology intervention in solid waste management and storm water drainage. In overall sustainability, the city has a score of 5.75.

Pune

Pune | City snapshot

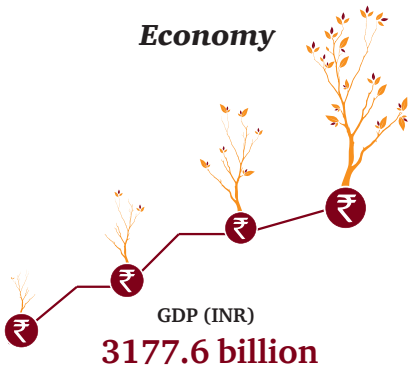
Total area and population density

Total population and gender ratio

51.3%

31.24 Lakh

Economy



GDP (INR)

3177.6 billion

City demographics

Population growth rate
30.37%

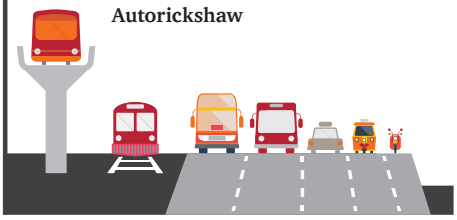
Per capita:
1,27,000 INR

Literacy rate:
89.56%

Crime index:
42.61

Urban transport

Buses
Local Railway: Pune suburban rail
Taxi
Autorickshaw



City theme

Oxford of the East

Cost of living

Grocery Index 27.72
Cost of living Index 26.36
Rent Index 7.52
Restaurants Index 17.66

Pollution index

Air PI	Water PI	Noise PI
71.12	74	68.3

Next-gen infrastructure

- Pune surveillance
- Bicycle tracks
- Bus rapid transit
- Intelligent transport system

Urban transport

- Mahadiscom
- Pune Municipal Corporation
- Disaster Management Cell of Pune Municipal Corporation
- Maharashtra Industrial Development Corporation
- Revenue Department, Pune
- Directorate of Technical Education, Maharashtra
- Health Department, PMC
- Pune Mahanagar Parivahan Mahamandal Limited
- Pune Metropolitan Region Development Authority
- Pune Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				3
	Quality				2.3
	Distribution losses				3
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.1
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				1.7
	Billing efficiency				2.3
	Revenue realisation				2
Water	24x7 water supply				2.4
	Metering of water connections				2
	Billing efficiency				1.4
	Online payment facility				2.1
	Water losses				2.1
	Revenue realisation				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				3
	Online FIR and complaint, etc., registration				2.1
	Verification, validations and clearance				1.7
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				1.8
	Efficient firefighting systems				2.4
	Fire station basis population density				1.8
	Availability of fire stations with special devices and materials for firefighting				2.4
Transport	Transport surveillance: Traffic, violation detection/speed violation detection/red light violation detection				2.6
	Challan management				1.7
	Traffic management system				2.4
	City parking management				1.4
	Access to para-transit				1.7
	Availability and frequency of public transport				2
	Availability of bicycle tracks				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				1.7
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				2.3
	Recycling of solid waste				2
	Solid waste disposal				2
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots				1.4
	Rainwater harvesting				1
	Evacuation of water				1.4
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.4

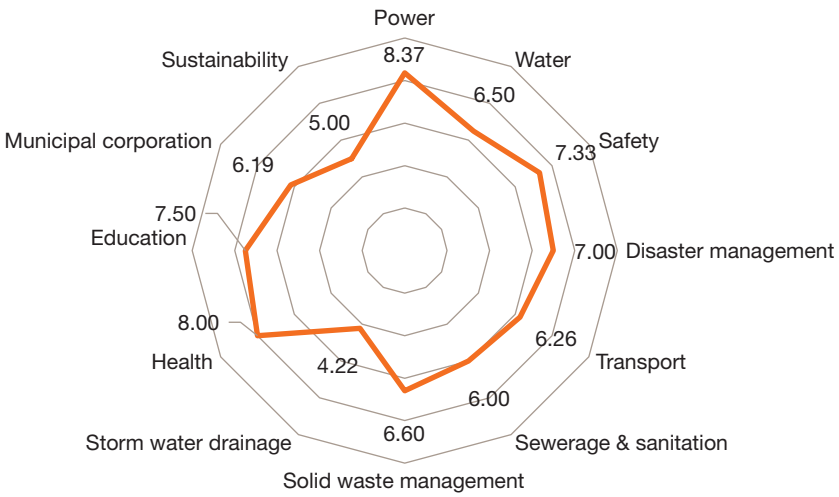
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards, etc.)				2.4
Education	Total number of schools				2.7
	School for the specially abled				1.7
	Colleges based on population density requirement				2.3
	Professional colleges based on population density requirement				2.3
Municipal corporation	Property tax payment				2.6
	Online license issues				1.4
	Complaint registrations				2.3
	Licenses issuance TAT				1.7
	RTI TAT				1.3
	Birth and death registration				1.7
	Online building plan sanction				2
Sustainability	Noise pollution				1.4
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Pune



Pune, with a population of 31.24 lakh, spans an area of approximately 710 km2. The city has a consolidated score of 8.27 in power. In the areas of water, safety and disaster management, Pune has consolidated scores of 6.17, 6.58 and 7.00, respectively. The city has limited public transport facilities, and citizens have to rely on autos and cabs. The city is required to improve its technology intervention in these areas in order to further improve its service delivery to citizens. Pune has a consolidated score of 6 in the areas of solid waste management as well as sewerage and sanitation. With a score of 5 in sustainability, the city needs to considerably improve in the sustainability domains of air and noise pollution.

Jaipur

Jaipur | City snapshot

Total area and population density

598 /km²

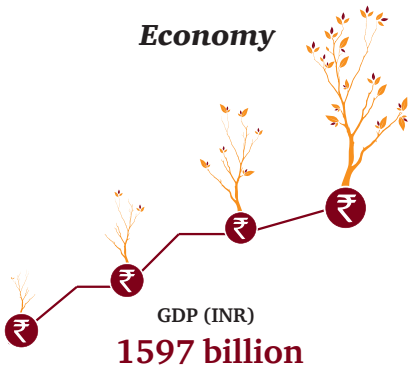
111.8 km²

Total population and gender ratio

52.6%

30.46 lakh

Economy



GDP (INR)

1597 billion

City demographics

Population growth rate

26.91%

Per capita:

72,156 INR

Literacy rate:

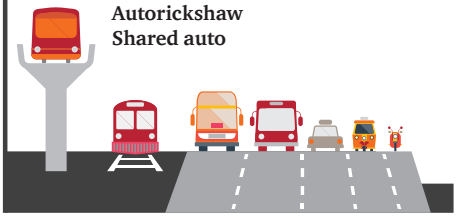
75.5%

Crime index:

33.61

Urban transport

Jaipur Metro: **Phase 1**
Buses:
Taxi
Autorickshaw
Shared auto



City theme

Pink City

Cost of living

Grocery Index 5.11

Cost of Living Index 25.48

Rent Index 4.62

Restaurants Index 15.61

Pollution index

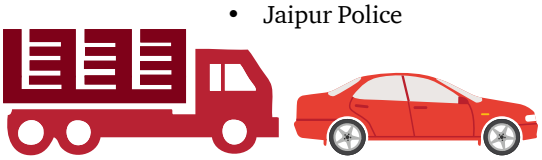
Air PI	Water PI	Noise PI
59.52	57.3	46.88

Next-gen infrastructure

- BRT
- CCTV cameras
- Metro

Urban transport

- Jaipur Vidyut Vitran Nigam
- Water Resources Department, Rajasthan
- Jaipur Municipal Corporation
- Disaster Management and Relief Department
- Jaipur Fire Brigade Department
- Revenue Department, Jaipur
- Department of College Education
- Department of Medical, Health and Family Welfare
- Rajasthan State Road Transport Corporation (RSRTC)
- Jaipur Development Authority
- Jaipur Police



Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2.3
	Distribution losses				2.4
	Energy consumption details				2.4
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.1
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2
	Billing efficiency				2.6
	Revenue realisation				2
Water	24x7 water supply				2.1
	Metering of water connections				2
	Billing efficiency				2
	Online payment facility				2.1
	Water losses				2.1
	Revenue realisation				1.7

High score = 3

Moderate Score = 2

Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				2.4
	Verification, validation or clearance				2
	Complaint response time				1.7
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarms and response system				2.1
	Efficient firefighting systems				2.1
	Fire stations based on population density requirement				2.1
	Availability of fire stations with special devices and materials for fire fighting				2.1
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2
	Challan management				1.7
	Traffic management system				2.4
	City parking management				2
	Access to para-transit				1.4
	Availability and frequency of public transport				2
	Availability of bicycle tracks				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2-m width on either side of all streets				1.7
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.1
	Treatment of waste water				1.7
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				1.7
	Collection of municipal solid waste				1.7
	Recycling of solid waste				1.7
	Solid waste disposal				1.3
	Hazardous waste recycling				1.7
Storm water drainage	Availability of required drainage systems at identified hotspots				1.7
	Rainwater harvesting				1.3
	Evacuation of water				1.7
Health	No. of hospitals against population density				2.4
	Healthcare facilities				2.4
	Emergency response facilities (ambulance, emergency wards)				2.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	No. of schools				2.1
	School for specially abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				1.7
	Online trade license issuance TAT				1.4
	Complaint registrations				2.6
	Online health licenses issuance TAT				1.4
	RTI TAT				1.3
	Birth and death registrations				2.4
	Online building plan sanctions				1.4
Sustainability	Noise pollution				2
	Air pollution				2.4
	Adherence to the green building norms				2.1
	Water pollution				2.4

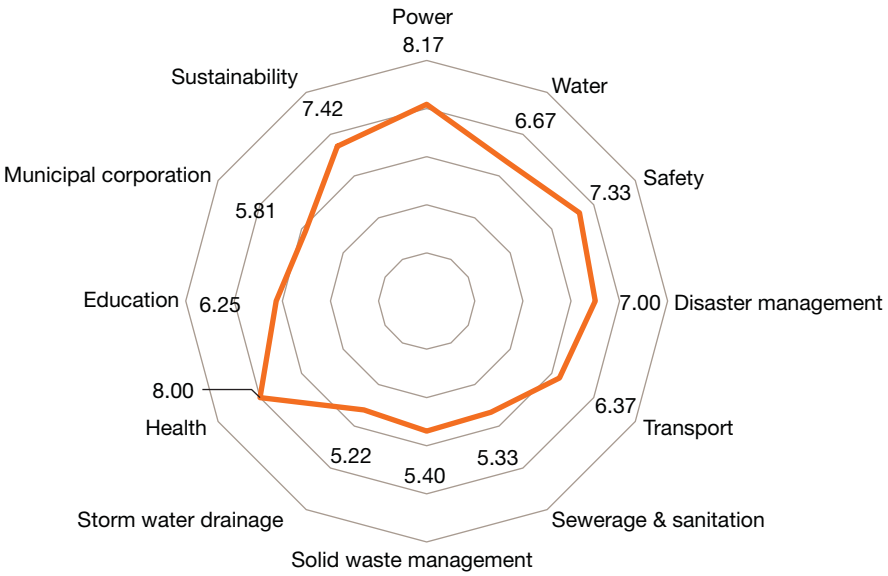
High score = 3

Moderate Score = 2

Limitedscore = 1

Overall assessment

Services - Jaipur



Jaipur, popularly known as the Pink City, spans an area of 111 km2 and has a population of 30.46 lakh. In the power domain, Jaipur has a consolidated score of 8.17. The city needs to improve its consumer metering, billing and collection efficiency, and also take up progressive steps in the utilisation of renewable energy sources. In the areas of water, safety and disaster management, the city has consolidated scores of 6.67, 7.33 and 7 respectively. Jaipur is required to considerably improve its technology intervention in water and disaster.

Chennai

Chennai | City snapshot

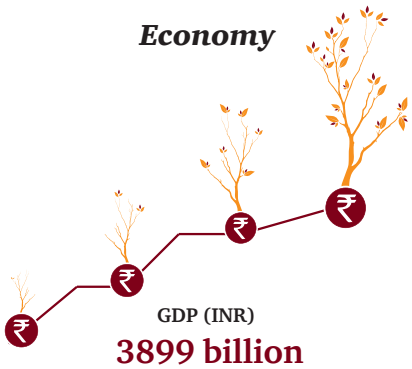
Total area and population density

Total population and gender ratio

50.26%

46.81 lakh

Economy



GDP (INR)

3899 billion

City demographics

Population growth rate

7.8%

Per capita:

57,706 INR

Literacy rate:

90.8%

Crime index:

46.3

Urban transport

Chennai Metro
Buses:
Taxi
Autorickshaw
Local train

City theme

Detroit of South Asia

Cost of living

Grocery Index 26.54

Cost of Living Index 25.26

Rent Index: 7.08

Restaurants Index: 15.47

Pollution index

Air PI	Water PI	Noise PI
66.47	66.03	54.6

Next-gen infrastructure

- BRT
- CCTV cameras
- Metro

Urban transport

- Tamil Nadu Electricity Board
- Tamil Nadu Generation and Distribution Corporation Limited
- Chennai Metro Water
- Corporation of Chennai
- Revenue Administration, Disaster Management and Mitigation Department
- Tamil Nadu Fire and Rescue Services
- Tamil Nadu Police
- Corporation of Chennai Zone Revenue Department
- Tamil Nadu School Education Department
- Public Health Department, Chennai
- State Transport Authority - Tamil Nadu
- Tamil Nadu State Transport Corporation
- Chennai Metropolitan Development Authority

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2.3
	Distribution losses				2.4
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2.6
	Revenue realisation				2
Water	24x7 water supply				2.1
	Metering of water connections				2
	Billing efficiency				2
	Online payment facility				2.4
	Water losses				2.1
	Revenue realisation				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				3
	Verification, validation or clearance				2
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.4
	Disaster alarm and response system				2.4
	Efficient firefighting systems				2.1
	Fire station basis population density				2.4
	Availability of fire stations with special devices and materials for firefighting				2.4
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				1.7
	Challan management				2.6
	Traffic management system				2.4
	City parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of public transport				2.3
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				1.4
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				1.7
	Use of treated water				1.6
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				2
	Recycling of solid waste				2
	Solid waste disposal				1.6
	Hazardous waste recycling				2
Storm water drainage	Availability of requisite drainage systems at identified hotspots				2
	Rainwater harvesting				1.3
	Evacuation of water				2
Health	No of hospitals against population density				2.7
	Healthcare facilities				2.4

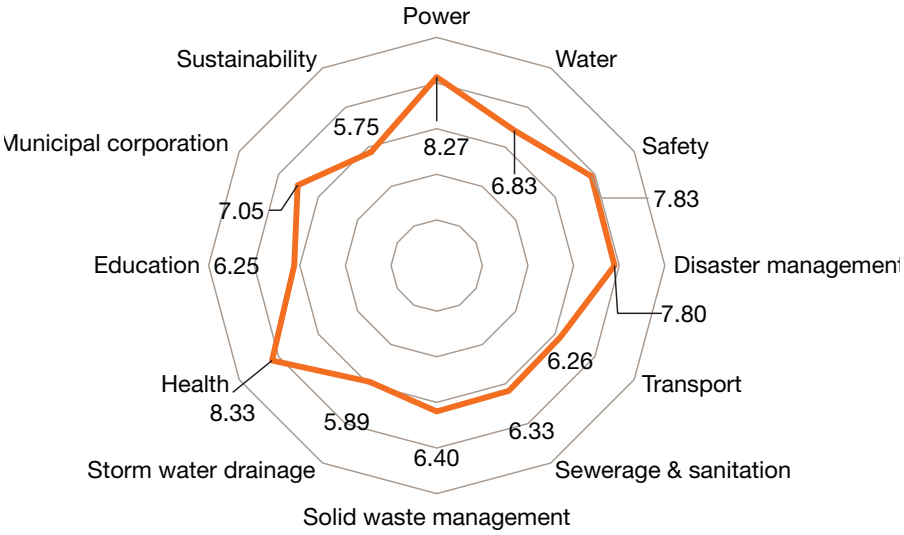
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards, etc.)				2.7
Education	Total number of schools				2.1
	School for the differently abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				2.6
	Online license issues				1.7
	Complaint registrations				2.6
	Licenses issuance TAT				1.7
	RTI TAT				1.3
	Birth and death registration				3
	Online building plan sanctions				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.7
	Adherence to the green building norms				1.8
	Water pollution				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Chennai



Chennai, the Detroit of South Asia, spans an area of 426 km2 and has a population cover of 46.46 lakh. In power, the city has a consolidated score of 8.27, which is good in comparison to other states. Chennai needs to implement appropriate mechanisms in order to ensure round-the-clock power supply. In the areas of water, disaster management and municipal corporation, the cumulative score of the city is 6.83, 7.8 and 7.05 respectively.

Kolkata

Kolkata | City snapshot

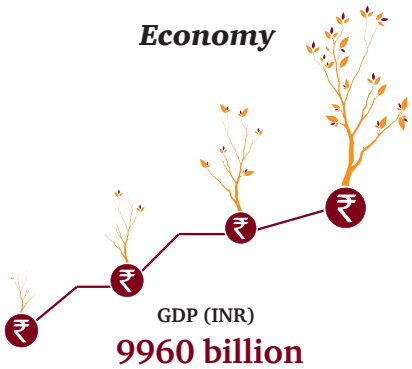
Total area and population density

Total population and gender ratio

52.41%

46.46 Lakh

Economy



GDP (INR)

9960 billion

City demographics

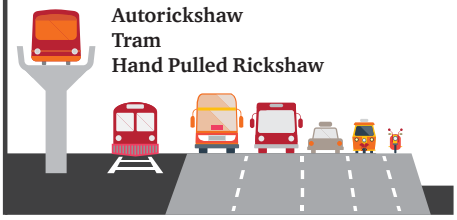
Population growth rate
1.67%

Literacy rate:
87.14%

Crime index:
57.29

Urban transport

Kolkata Metro
Buses:
Taxi
Autorickshaw
Tram
Hand Pulled Rickshaw



City theme

Salt Lake City

Cost of living

Grocery Index 26.14

Cost of Living Index 25.37

Rent Index 6.10

Restaurants Index 17.19

Pollution index

Air PI	Water PI	Noise PI
75.52	64.29	53.75

Next-gen infrastructure

- Tram
- CCTV cameras
- Metro

Urban transport

- Calcutta Electric Supply Corporation
- Kolkata Metropolitan Water and Sanitary Authority
- Kolkata Municipal Corporation
- Kolkata Metropolitan Development Authority
- Kolkata Police

- Department of Disaster Management, Government of West Bengal
- West Bengal Fire Services
- Land and Land Revenue Department
- Department of School Education
- Department of Health and Family Welfare, West Bengal
- Calcutta State Transport Corporation

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2.3
	Distribution losses				2.7
	Energy consumption details				2.4
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				1.8
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				1.7
	Billing efficiency				2.3
	Revenue realisation				2.3
Water	24x7 water supply of water				1.8
	Metering of water connections				1.7
	Billing efficiency				1.4
	Online payment facility				3
	Water losses				1.8
	Revenue realisation				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				3
	Verification, validation or clearance				1.7
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarms and response system				2.1
	Efficient firefighting systems				2.4
	Fire stations based on population density requirement				2.4
	Fire stations with special devices and materials for fire fighting				2.7
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2
	Challan management				1.7
	Traffic management system				2.1
	Parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of mass transport				1.7
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				1.7
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				1.4
	Collection of municipal solid waste				1.7
	Recycling of solid waste				1.7
	City solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				1.7
	Rainwater harvesting				1
	Evacuation of water				1.7
Health	No. of hospitals against population density				2.1
	Healthcare facilities (HMIS, health records, mobile health tracking, etc.)				3
	Emergency response facilities (ambulance, emergency wards)				2.4

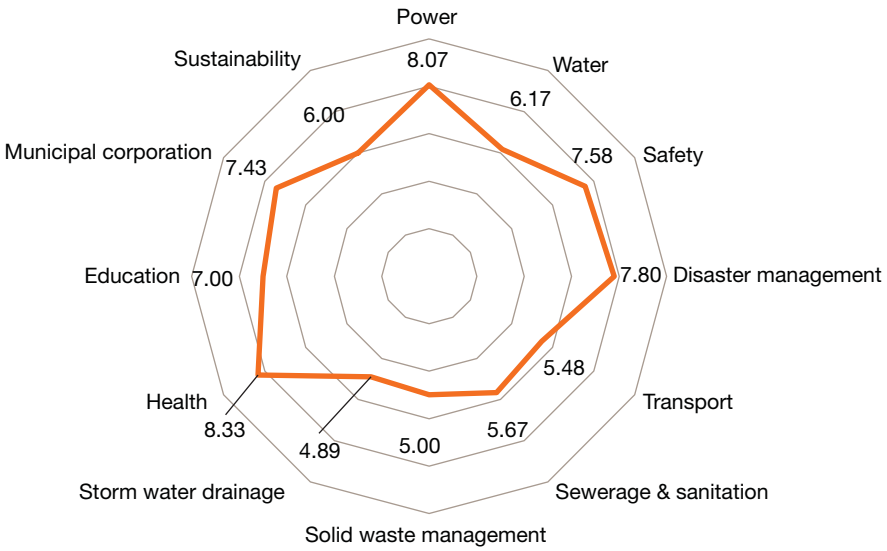
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	No. of school against population				2.1
	School for specially abled				2
	Colleges against population density				2.3
	Professional colleges based on population density requirement				2
Municipal corporation	Property tax payments				2
	Online license issuance				2.6
	Complaint registrations				2.3
	License issuance TAT				2.3
	RTI TAT				1
	Registration of birth and death				3
	Online building plan sanction				2.4
Sustainability	Noise pollution				2
	Air pollution				1.4
	Adherence to the green building norms				1.7
	Water pollution				2.1

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Kolkata



Kolkata, nicknamed the 'eastern gateway of India', is the capital of the state of West Bengal. It is located on the east of the River Hooghly. Kolkata has a rich history and has India's oldest port and the sole major riverine port. Kolkata has a population of 46.46 lacs. Kolkata has fared well in the health sector with a score of 8.33. The state of power is also good with a score of 8.07. The area where Kolkata lags is storm water drainage systems and solid waste management systems, with scores of 4.89 and 5.00 respectively. The water network in Kolkata also needs improvement. It scored a total of 6.17 in the water sector.

Delhi

Delhi | City snapshot

Total area and population density

11,297/km²

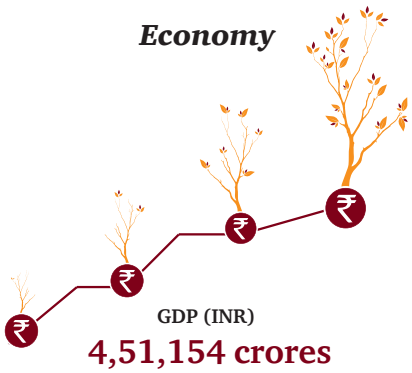
11,297/km²

Total population and gender ratio

53%

1.103 Crore

Economy



GDP (INR)

4,51,154 crores

City demographics

Population growth rate

21.21%

Per capita:

INR 1.92 Lacs/annum

Literacy rate:

86.34%

Crime index:

60.27

Urban transport

Delhi Metro: Phase 3
Buses: 6274
Taxi
Autorickshaw
Local railway

City theme

National capital city

Cost of living

Groceries Index 26.35

Local Purchasing Power 83.56

Rent Index 9.57

Restaurants Index 21.48

Pollution index

Air PI	Water PI	Noise PI
83.7	72.5	65.1

Next-gen infrastructure

- Delhi Metro
- Traffic signal camera
- Intelligent transport system
- Wi-Fi enabled public areas

Urban transport

- Delhi Fire Services
- Revenue Department, Delhi
- Directorate of Education
- Department of Health and Family Welfare
- DTC
- NDPL
- NDMC
- BSES - Rajdhani
- BSES - Yamuna
- Delhi Jal Board
- NDMC
- New Delhi Municipal Corporation
- Delhi Disaster Management Authority
- Delhi Development Authority
- Delhi Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2.3
	Distribution losses				2.7
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.7
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2.3
	Revenue realisation				2.3
Water	24x7 water supply				2.4
	Metering of water connections				2
	Billing efficiency				1.7
	Online payment facility				3
	Water losses				2.1
	Revenue realisation				2.3

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.7
	Online FIR, complaints registration				2.4
	Verification, validation or clearance				2
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				1.8
	Efficient firefighting systems				2.4
	Fire station basis population density				1.8
	Fire stations with special devices and materials for fire fighting				2.4
Transport	Transport surveillance: Traffic violation detection, speed violation				1.7
	Challan management				2
	Traffic management system				2.4
	City parking management				2
	Access to para-transit				1.7
	Availability and frequency of public transport				2
	Bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpaths of minimum 2m width on either side of all streets				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.7
	Treatment of waste water				2
	Use of treated water				1.6
Solid waste management	City population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				2
	Recycling of solid waste				2
	Solid waste disposal				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of requisite drainage systems at identified hotspots				1.7
	Rainwater harvesting				1
	Evacuation of water				1.7
Health	No. of hospitals against population density requirement				2.1
	Healthcare facilities				2.4

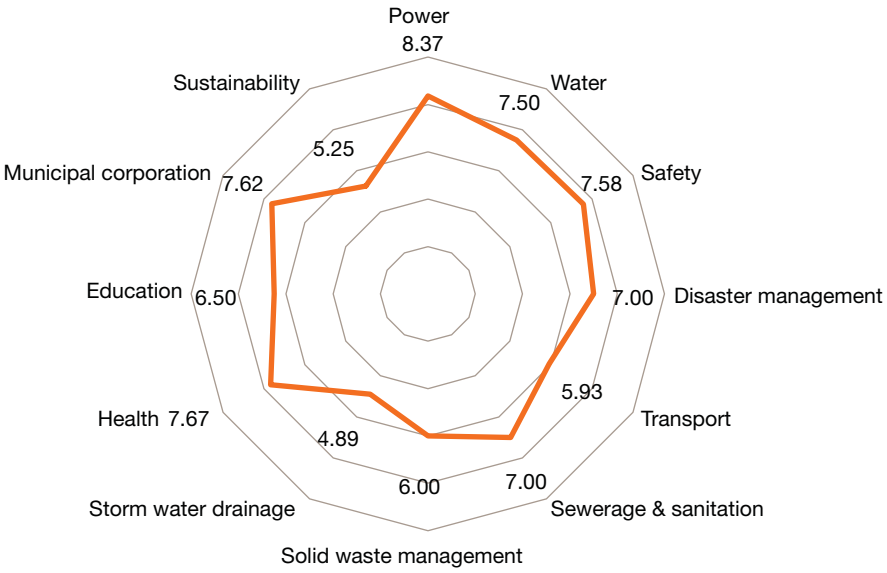
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards, etc.)				2.4
Education	Total number of schools				2.4
	School for the differently abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				2.6
	Online license issues				2.6
	Complaint registrations				2
	Licenses issuance TAT				2.3
	RTI TAT				1.9
	Birth and death registration				2.3
	Online building plan sanction				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Delhi



New Delhi is the capital of India and has all the central government offices and courts. Delhi has a high percentage of green cover and is full of ancient monuments and is rich in Indian cultural history. It is a microcosm of the entire country. Delhi fares well in the power domain with a score of 8.37. The Municipal Corporation of Delhi had a healthy score of 7.62; healthcare also had a positive score of 7.67. The city lacks a robust storm water drainage system, resulting in a low score of 4.89 for the domain. Solid waste management also needs improvement as it scored a low 6.00 in the domain. Delhi's overall sustainability is very low at a score of 5.25.

Mumbai

Mumbai | City snapshot

Total area and population density

21,000/km²

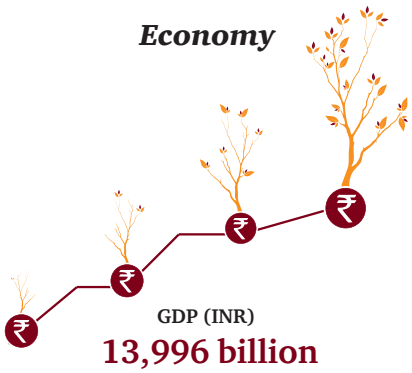
603 km²

Total population and gender ratio

47% 53%

1.244 Crore

Economy



GDP (INR)

13,996 billion

City demographics

Population growth rate

4.7%

Per capita:

1.89 lakh INR/annum

Literacy rate:

89.73%

Crime index:

50.53

Urban transport

Mumbai Metro: Phase 2
Buses: 6274
Taxi
Autorickshaw
Local railway

City theme

Financial capital of India

Cost of living

Groceries index 30.33

Local purchasing power 77.55

Rent index 19.86

Restaurants index 20.62

Pollution index

Air PI	Water PI	Noise PI
81.56	77.14	72.86

Next-gen infrastructure

- Mumbai Metro
- Traffic signal camera
- Intelligent transport system

Departments

- Mahadiscom; BEST
- BMC
- MCGM
- NMMC
- BMC
- MCGM
- NMMC
- BMC
- MCGM
- NMMC
- Mumbai Fire Brigade Department
- Revenue Department, Mumbai
- Directorate of Technical Education, Maharashtra
- Maharashtra Public Health Department
- Directorate of Health Services
- MSRTC; BEST
- MMRDA
- Mumbai Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				3
	Quality				2.3
	Distribution losses				3
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.1
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				1.7
	Billing efficiency				2
	Revenue realisation				2
Water	24x7 water supply of water				2.4
	Metering of water connections				1.7
	Billing efficiency				1.7
	Online payment facility				2.7
	Water losses				2.1
	Revenue realisation				2.3

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				2.7
	Verification, validation or clearance				1.4
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarms and response system				1.8
	Efficient firefighting systems				2.4
	Fire stations basis population density				2.4
	Fire stations with special devices and materials for firefighting				2.4
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				1.7
	Challan management				2
	Traffic management system				2.4
	Parking management				1.4
	Access to para-transit				2
	Availability and frequency of mass transport				2.3
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2-m width on either side of all streets				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.7
	Waste water treatment				2
	Treated water usage				1.6
Solid waste management	Population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				2.3
	Recycling of solid waste				1.4
	Solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of required drainage in identified hotspots				1.7
	Rainwater harvesting				1
	Evacuation of water				1.7
Health	No. of hospitals against population density				1.8
	Healthcare facilities				2.4
	Emergency response facilities (ambulances, emergency wards, etc.)				2.1

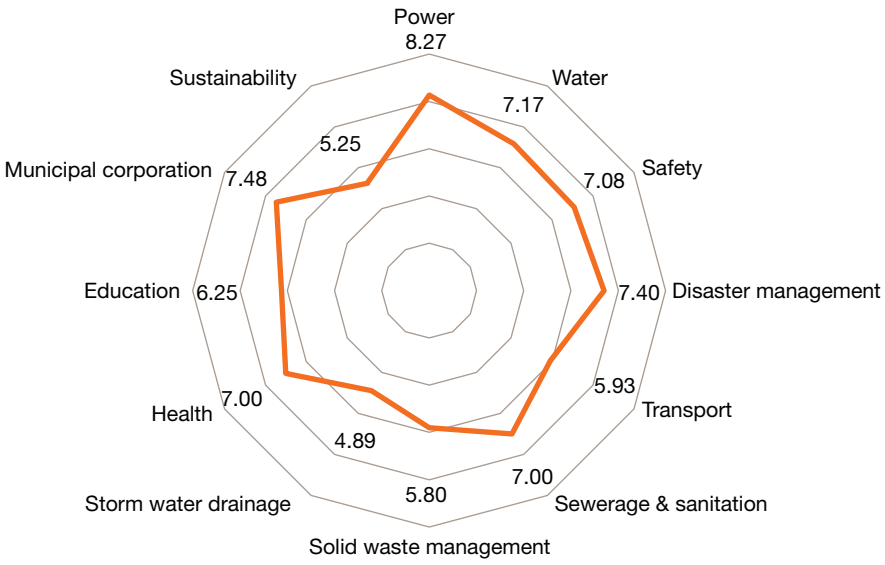
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	Total number of schools				2.1
	School for specially abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				2.6
	Online license issuance				2.6
	Complaint registrations				2.6
	License issuance TAT				2.3
	RTI TAT				2.3
	Birth and death registration				1.9
	Online building plan sanction				2.3
Sustainability	Noise pollution				1.4
	Air pollution				1.4
	Adherence to the green building norms				2.1
	Water pollution				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Mumbai



Mumbai, the financial capital of India, is also the capital of the state of Maharashtra. With a staggering 18.4 million people, it is the most populous city in India. It is called an alpha world city and has the highest GDP among cities in Central, South or West Asia. Mumbai has scored the highest in the power domain with a score of 8.27. The city's municipal corporation has a healthy score of 7.48 out of 10. Healthcare is also good with a score of 7. The city is plagued by bad traffic conditions, which worsen during the monsoons owing to the extremely poor storm water drainage system throughout the city. This is the reason transportation and storm water drainage have scores of 5.93 and 4.89 respectively.

Hyderabad

Hyderabad | City snapshot

Total area and population density

18,480/km²

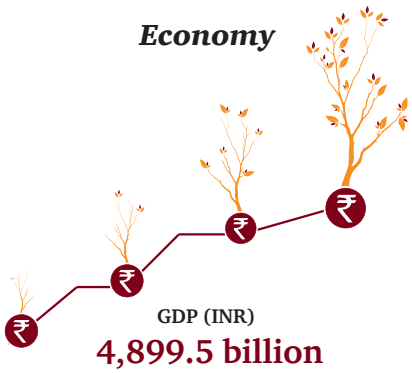
650 km²

Total population and gender ratio

48% 52%

68.09 Lacs

Economy



GDP (INR)

4,899.5 billion

City demographics

Population growth rate
2.97%

Per capita:
INR 44,300/ annum

Literacy rate:
82.96%

Crime index:
40.35

Urban transport

Mana Metro: Phase 1
Buses: 6274
Taxi
Autorickshaw
Local railway

City theme

City of pearls

Cost of living

Groceries Index 26.10

Local Purchasing Power 86.85

Rent Index 5.92

Restaurants Index 14.35

Pollution index

Air PI	Water PI	Noise PI
78.26	71.13	54.57

Next-gen infrastructure

- Hyderabad Metro Rail
- Traffic signal camera
- Intelligent transport system

Departments

- Andhra Pradesh Southern Power Distribution Company Limited
- Hyderabad Metropolitan Water Supply and Sewerage Board
- Greater Hyderabad Municipal Corporation
- Revenue Disaster Management Department
- Hyderabad Metropolitan Development Authority
- A.P. Fire Service Department
- Revenue Department, Hyderabad
- Department of Technical Education, Government of Andhra Pradesh
- Directorate of Public Health and Family Welfare
- GoAP Transport Department
- Telangana Transport Department
- Hyderabad Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				3
	Energy consumption details				2.4
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.7
	Metering				2.7
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2.3
	Revenue realisation				2
Water	24x7 water supply				1.8
	Metering of water connections				1.4
	Billing efficiency				1.7
	Online payment facility				2.7
	Water losses				2.4
	Revenue realisation				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				3
	Verification, validation or clearance				2.3
	Complaint response time				1.7
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				2.1
	Efficient firefighting systems				2.1
	Fire station basis population density				1.8
	Fire stations with special devices and materials for fire fighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation				2
	Challan management				1.7
	Traffic management system				2.4
	Parking management				1.4
	Access to para-transit				1.4
	Availability and frequency of public transport				1.4
	Bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2-m width on either side of all streets				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				1.8
	Treatment of waste water				1.4
	Use of treated water				1
Solid waste management	Population with regular solid waste collection (residential)				1.7
	Collection of municipal solid waste				1.7
	Recycling of solid waste				1.7
	Solid waste disposal				1.3
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots				1.4
	Rainwater harvesting				1
	Evacuation of water				1.4
Health	No of hospitals against population density				1.4
	Healthcare facilities				2.1

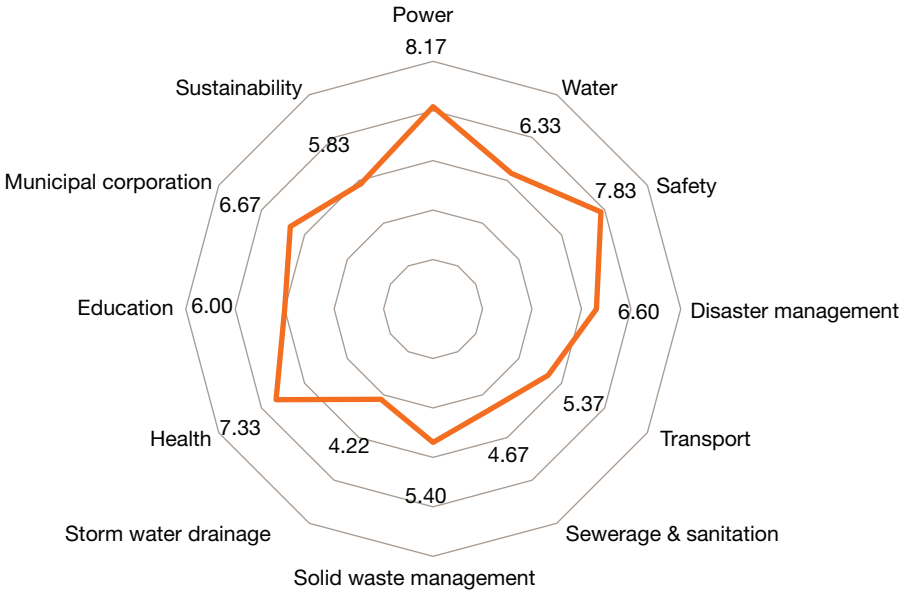
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards, etc.)				2.4
Education	Total number of schools				1.8
	School for the differently abled				1.7
	Colleges against population density				1.7
	Professional colleges against population density				2
Municipal corporation	Property tax payments				2.3
	Online license issues				2
	Complaint registrations				2.6
	Licenses issuance TAT				1.4
	RTI TAT				1.3
	Birth and death registration				2.4
	Online building plan sanction				2
Sustainability	Noise pollution				1.4
	Air pollution				1.7
	Adherence to the green building norms				2.1
	Water pollution				1.8

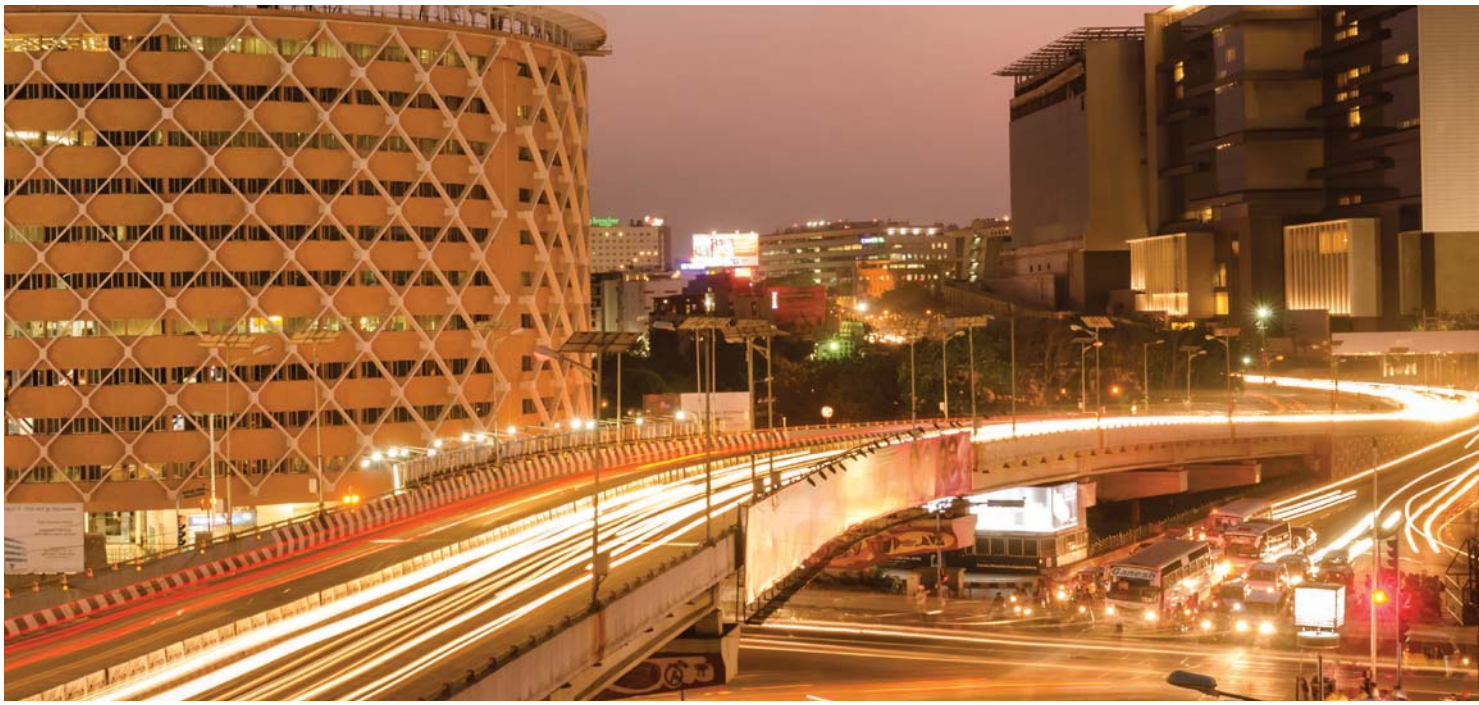
High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Hyderabad



Hyderabad is the capital city of the state of Telengana. It is known for its biryani and the fabulous wealth of the nawabs. In the last few years, it has become a rapidly growing IT hub. With a score of 8.17, Hyderabad scored the highest in the power domain. The city fared decently in the sectors of health, municipal corporation and safety, with scores of 7.33, 6.67 and 7.83 respectively. The areas of concern for the city include storm water drainage, which had a meagre score of 4.22. To race ahead in the future, the city needs to improve its transportation facilities, sewerage and sanitation and solid waste management.

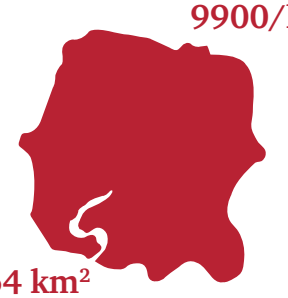


Ahmedabad

Ahmedabad | City snapshot

Total area and population density

9900/km²



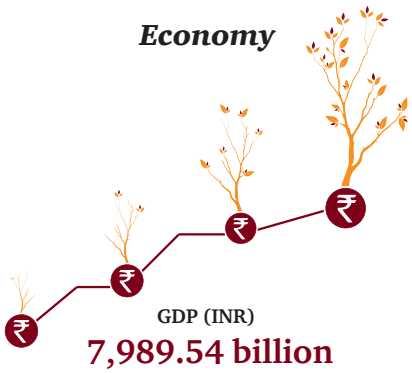
464 km²

Total population and gender ratio

47% 53%

55.77 lakh

Economy



GDP (INR)

7,989.54 billion

City demographics

Population growth rate
19.17%

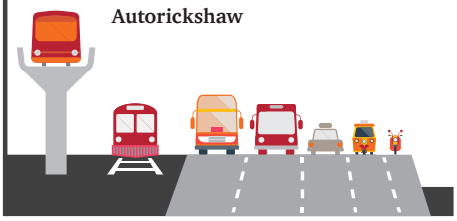
Per capita:
INR 1.07 lacs/annum

Literacy rate:
88.29%

Crime index:
27.94

Urban transport

BRTS: 220
Buses: 750
Taxi
Autorickshaw



City theme

Boston of the East

Cost of living

Groceries Index 23.83

Local Purchasing Power 68.74

Rent Index 5.20

Restaurants Index 15.70

Pollution index

Air PI	Water PI	Noise PI
66.91	68.33	65.83

Next-gen infrastructure

- Mega Metro Rail
- Traffic signal camera
- Intelligent transport system

Departments

- Torrent Power
- Ahmedabad City Police
- Central Ground Water Board
- Gujarat Water Supply and Sewerage Board
- Education Department Government of Gujarat
- Amdavad Municipal Corporation
- Transport Department Gujarat
- Health & Family Welfare Department
- Food And Drug Control Department
- Roads And Building Department
- GIDC – Gujarat Industrial Development Corporation Ahmedabad

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2.3
	Distribution losses				2.4
	Energy consumption details				2.1
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.7
	Metering				2.4
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2
	Billing efficiency				2.3
	Revenue realisation				2
Water	24x7 water supply of water				2.4
	Metering of water connections				1.7
	Billing efficiency				2
	Online payment facility				2.4
	Water losses				2.7
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.7
	Online FIR, complaints registration				2.7
	Verification, validation or clearance				2
	Complaint response time				1.7
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarms and response system				2.1
	Efficient firefighting systems				2.4
	Fire stations basis population density				2.4
	Fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2
	Challan management				2
	Traffic management system				2.4
	Parking management				1.7
	Access to para-transit				1.7
	Availability and frequency of mass transport				1.7
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				1.7
	Recycling of solid waste				2
	Solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.6
	Hazardous waste recycling				2
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				1.7
	Rainwater harvesting				1.3
	Evacuation of water				1.7
Health	No. of hospitals against population density				2.1
	Healthcare facilities				2.1
	Emergency response facilities (ambulances, emergency wards, etc.)				2.1

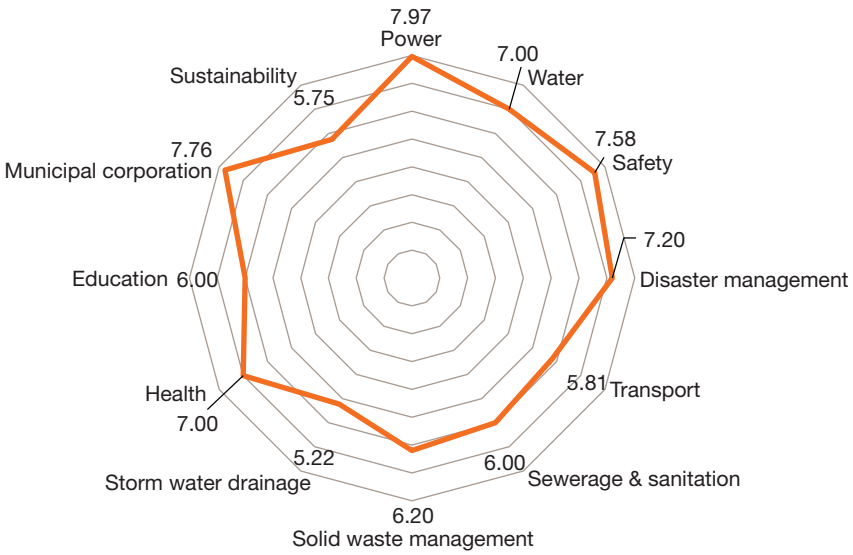
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	Total number of schools				2.1
	School for specially abled				1.7
	Colleges against population density				1.7
	Professional colleges against population density				1.7
Municipal corporation	Property tax payments				2.6
	Online license issuance				2.3
	Complaint registrations				2.3
	License issuance TAT				2.3
	RTI TAT				1.9
	Registration of birth and death				2.6
	Online building plan sanction				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.7
	Adherence to the green building norms				1.8
	Water pollution				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Ahmedabad



Ahmedabad (the erstwhile capital of Gujarat) is the largest city of the state of Gujarat. With a population of more than 6.3 million it is the sixth largest city in India. It is the home city of our current Prime Minister, Hon'ble Shri Narendra Modi. The city boasts of the best management institute of the country and the best institute for design. It is used to be the Manchester of India owing to the existence of a large number of textile mills. However, the city is now known as the commercial capital of the state of Gujarat and is thriving in the service, IT and food processing sectors. It has scored the highest in the power domain, with a score of 7.97. The city has fared decently well in most of the other sectors, including municipal corporation, safety, disaster management, water and healthcare, with scores of 7.76, 7.58, 7.20, 7.00 and 7.00 respectively. The city needs to improve sustainability and solid waste management.

Surat

Surat | City snapshot

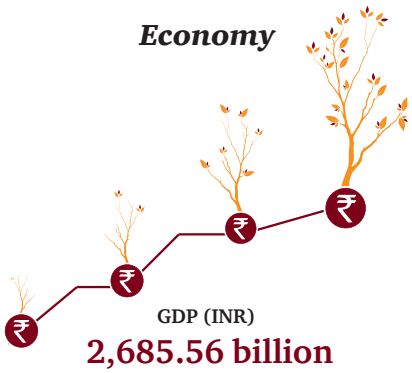
Total area and population density

Total population and gender ratio

43% 57%

44.67 lakhs

Economy



GDP (INR)

2,685.56 billion

City demographics

Population growth rate
65%

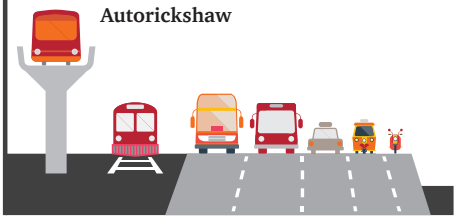
Per capita:
4.57 lakhs INR/annum

Literacy rate:
87.89%

Crime index:
27.20

Urban transport

Surat BRTS: 114 km, 148 stations
Buses: 125
Taxi
Autorickshaw



City theme

Diamond City

Cost of living

Groceries Index – 24.33

Local Purchasing Power – 62.46

Rent Index: 4.73

Restaurants Index: 20.17

Pollution index

Air PI	Water PI	Noise PI
61.67	56.0	51.92

Next-gen infrastructure

- Traffic signal camera
- Intelligent transport system

Departments

- Dakshin Gujarat Vij Electricity Board
- Surat City Police
- Central Ground Water Board
- Gujarat Water Supply and Sewerage Board
- Education Department Government of Gujarat
- Surat Municipal Corporation
- Transport Department Gujarat
- Health & Family Welfare Department
- Food And Drug Control Department
- Roads And Building Department
- SUDA – Surat Urban Development Authority

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				3
	Quality				2.3
	Distribution losses				3
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2.3
	Revenue realisation				2.3
Water	24x7 water supply				2.7
	Metering of water connections				2
	Billing efficiency				2
	Online payment facility				2.4
	Water losses				2.7
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.7
	Online FIR, complaints registration				2.4
	Verification, validation or clearance				1.7
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2
	Disaster alarm and response system				2.1
	Efficient firefighting systems				2.4
	Fire station basis population density				2.4
	Availability of fire stations with special devices and materials for firefighting				2.1
Transport	Transport surveillance: Traffic violation detection, speed violation detection and red light violation detection				2
	Challan management				1.7
	Traffic management system				2.4
	Parking management				2
	Access to para-transit				1.7
	Availability and frequency of mass transport				2
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				1.4
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1.6
Solid waste management	City population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				2.3
	Recycling of solid waste				2
	City solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.6
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				2
	Rainwater harvesting				1.3
	Evacuation of water				2
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.1

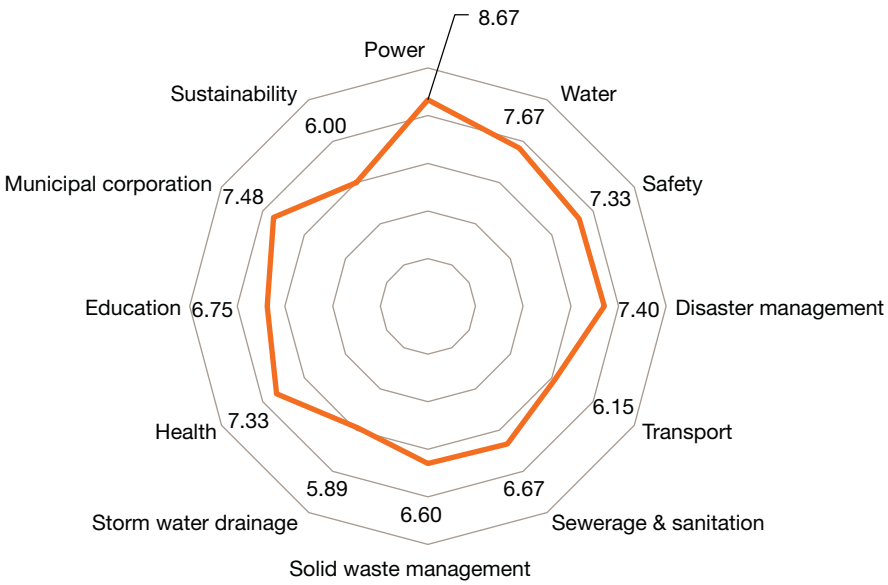
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards, etc.)				2.1
Education	Total number of schools				2.1
	School for the differently abled				2
	Colleges against population density requirement				2
	Professional colleges based on population density requirement				2
Municipal corporation	Property tax payments				2.6
	Online license issues				1.7
	Complaint registrations				2.6
	Licenses issuance TAT				2.3
	RTI TAT				1.9
	Registration of birth and death				2.3
	Online building plan sanction				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.7
	Adherence to the green building norms				1.8
	Water pollution				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Surat



Surat, also known as the 'Diamond City', is one of the oldest diamond-cutting centres in the world. Further, 90% of the world's rough diamonds are cut and polished in Surat. It also produces about 40% of India's total man-made fabric. Moreover, its IT sector is also slowly picking up. Surat has scored exceptionally in the power sector, with a score of 8.67. Surat fared averagely in the domains of disaster management, municipal corporation, water and safety, with scores of 7.40, 7.48, 7.67 and 7.33. Surat lags behind in its storm water drainage systems, solid waste management systems, sewerage and sanitation. Transportation within the city is poor, which is reflected in the city's score of 6.45. The overall sustainability score of Surat is 6.

Bhopal

3. Detailed city assessments

Bhopal | City snapshot

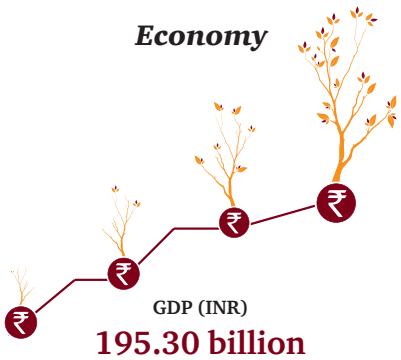
Total area and population density

Total population and gender ratio

52.06%

17.98 lakh

Economy



GDP (INR)

195.30 billion

(2011–12)

City demographics

Population growth rate

28.46%

Per capita:

47,214 INR

Literacy rate:

83.47%

Crime index:

37.5

Urban transport

Buses
Taxi
Autorickshaw
Bus
Local trains

City theme

Lake city

Cost of living

Grocery index 21.59

Cost of living index 25.89

Rent index 4.15

Restaurants index: 14.48

Pollution index

Air PI	Water PI	Noise PI
71.43	73.44	75

Next-gen infrastructure

- Bus Rapid Transport System (BRTS)
- Public bike sharing
- Smart city

Urban transport

- MP Madhya Kshetra Vidyut Vitran Co
- MP Adyogik Kendra Vikas Nigam
- Bhopal Municipal Corporation
- MP State Natural Disaster Management Authority
- MP fire services
- MP police
- MP Revenue Department
- School Education Department, MP
- Department of Health and Family Welfare, MP
- MP Transport Department
- RTO
- Bhopal Development Authority

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.1
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or customer relationship management (CRM) for citizens				3
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				1.7
	Billing efficiency				2
	Revenue realisation				2.3
Water	24x7 water supply of water				2.1
	Metering of water connections				1.7
	Billing efficiency				1.7
	Online payment facility				2.7
	Water losses				2.1
	Revenue realisation				1.4

High score = 3

Moderate Score = 2

Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online First Information Report (FIR) and complaint registration				2.4
	Verification, validations or clearance				1.7
	Complaint response time				1.7
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				2.1
	Efficient firefighting systems				1.8
	Fire stations against population density				2.1
	Fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection and red light violation detection				2.3
	Challan management				1.7
	Traffic management system				2.4
	Parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of mass transport				2
	Availability of bicycle tracks				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				1.7
	Adherence to building and parking standards				1.7
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.1
	Treatment of waste water				2
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				2
	Recycling of solid waste				1.7
	City solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				1.7
	Rainwater harvesting				1.3
	Evacuation of water				1.7
Health	No. of hospitals against population density				1.8
	Healthcare facilities (hospital management information system [HMIS], health records, mobile health tracking, etc.)				2.1

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulances, emergency wards, etc.)				2.1
Education	No. of schools against population				1.8
	Schools for the specially abled				1.4
	Colleges against population density				2
	Professional colleges based on population density requirement				2
Municipal corporation	Property tax payment				2.3
	Online license issuance				1.4
	Complaint registration				2.3
	License issuance turnaround time (TAT)				1.4
	RTI TAT				1
	Registration of birth and death				2.6
	Online building plan sanction				1.7
Sustainability	Noise pollution				1.4
	Air pollution				1.4
	Adherence to green building norms				1.8
	Water pollution				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2
	Distribution losses				2.1
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or customer relationship management (CRM) for citizens				3
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				1.7
	Billing efficiency				2
	Revenue realisation				2.3
Water	24x7 water supply				2.1
	Metering of water connections				1.7
	Billing efficiency				1.7
	Online payment facility				2.7
	Water losses				2.1
	Revenue realisation				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online First Information Report (FIR) and complaint registration				2.4
	Verification, validations or clearance				1.7
	Complaint response time				1.7
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				2.1
	Efficient firefighting systems				2.1
	Fire stations against population density				2.1
	Availability of fire stations with special devices and materials for firefighting				2.1
Transport	Transport surveillance: Traffic violation detection, speed violation detection and red light violation detection				2.6
	Challan management				1.7
	Traffic management system				2.4
	City parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of mass transport				2
	Availability of bicycle tracks				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2-m width on either side of all streets				1.7
	Adherence to building and parking standards				1.7
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				2
	Recycling of solid waste				1.7
	Solid waste disposal				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of required drainage systems at identified hotspots				1.7
	Rainwater harvesting				1.3
	Evacuation of water				1.7
Health	No. of hospitals against population density				1.8
	Healthcare facilities				2.1

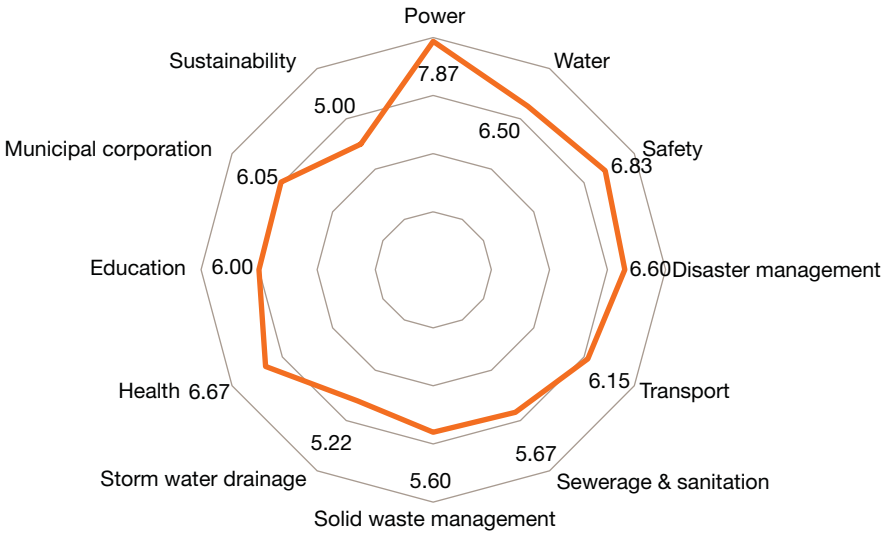
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards)				2.1
Education	Total number of schools				1.8
	School for the differently abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				2.3
	Online license issues				1.4
	Complaint registrations				2.3
	Licenses issuance TAT				1.4
	RTI TAT				1
	Birth and death registrations				2.6
	Online building plan sanctions				1.7
Sustainability	Noise pollution				1.4
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				1.4

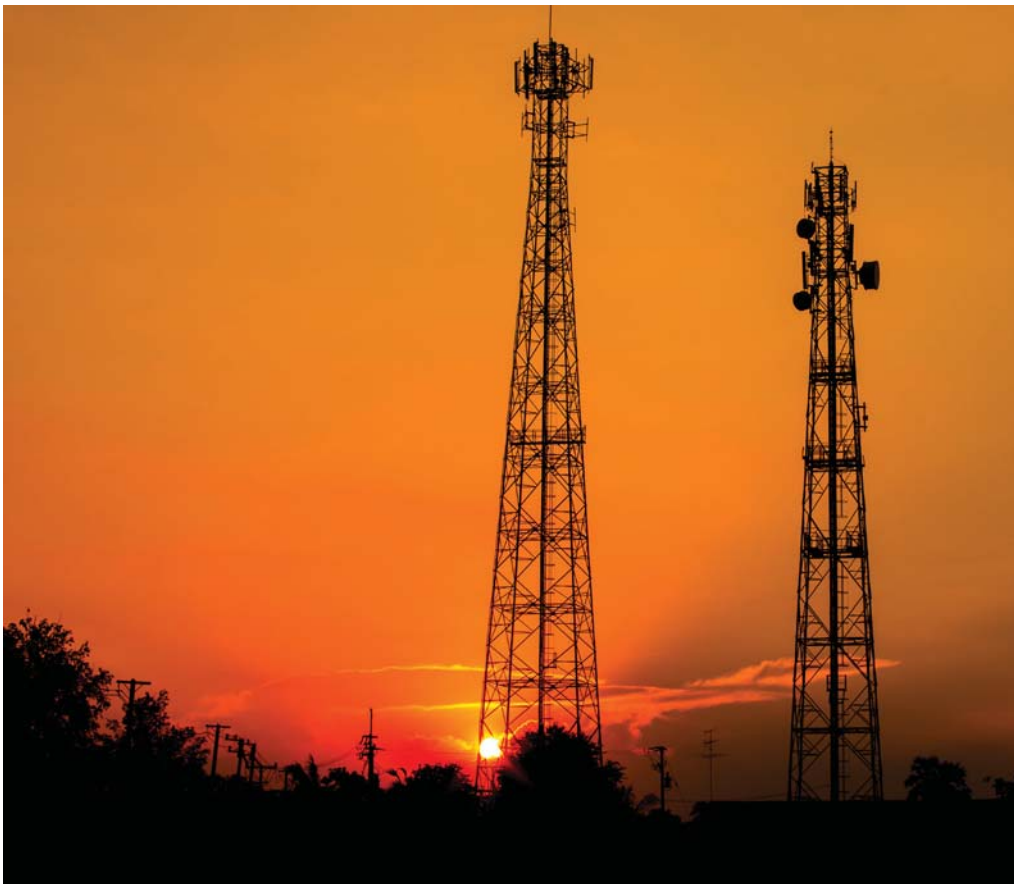
High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Bhopal



Bhopal is rich in history and, at the same time, is also a flourishing modern city. It serves as the state capital of Madhya Pradesh. Bhopal scores maximum on the 'Power' parameter under the services it offers. Bhopal's Madhya Kshetra Vitaran is paramount in shaping this for the city. Power outages are frequent in old Bhopal, but the newer locales in Bhopal see relatively less frequent power cuts. The city performs at an average standing when it comes to disaster management, where it sees a consolidated score of 6.6. The city's performance is at the same level as that of most of the cities in this study. Although the score is not low, but bearing in mind the infamous Bhopal gas tragedy, the score could have been better. This score becomes a little more worrisome since the sustainability element of Bhopal is scored at a meagre 5. Most other services like municipal corporation, education, transport, sewage and sanitation for Bhopal stand in the 6+ range. Safety and water are the only services that score above the 6.5 mark. The city's scores average at 6.17.



Gurgaon

Gurgaon | City snapshot

Total area and population density

1241/km²

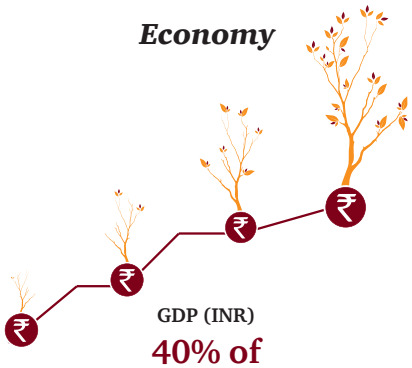
732 km²

Total population and gender ratio

54.14%

8.86 lakh

Economy



GDP (INR)

40% of Haryana economy

City demographics

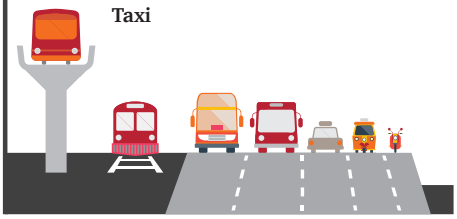
Population growth rate
73.96%

Literacy rate:
87.52%

Crime index:
78.23

Urban transport

Delhi Metro and Rapid Metro
Bus
Rickshaw
Taxi



City theme

3rd highest revenue-generating industrial town

Cost of living

Grocery index 30.69

Cost of living index 31.04

Rent index 9.97

Restaurants index: 24.53

Pollution index

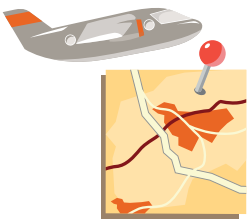
Air PI	Water PI	Noise PI
77.13	66	71.43

Next-gen infrastructure

- Metro
- Public bike sharing
- Pod taxi (announced)
- Green buildings
- Women safety and highway management system

Urban transport

- DHBVN
- Haryana Urban Development Authority
- Municipal Corporation of Gurgaon
- Haryana Disaster Management Authority
- Directorate of School Education, District Education Center
- Health Department Gurgaon
- Department of Health and Family Welfare, Haryana
- Haryana Transport Department
- RTO
- Gurgaon Police (Haryana Police)



Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.1
	Quality				2
	Distribution losses				2.1
	Energy consumption details				2.4
	Online payment facility				2.4
	Grievance redressal or CRM for citizens				2.1
	Metering				2.4
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				1.7
	Billing efficiency				2
	Revenue realisation				1.7
Water	24x7 water supply of water				2.4
	Metering of water connections				1.7
	Billing efficiency				1.4
	Online payment facility				2.7
	Water losses				2.1
	Revenue realisation				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				2.1
	Verification, validation or clearance				2.6
	Complaint response time				2
Disaster management	Disaster prediction, early warning system				1.8
	Disaster alarms and response system				1.8
	Efficient firefighting systems				2.1
	Fire stations basis population density				2.1
	Availability of fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				1.7
	Challan management				1.7
	Traffic management system				2.1
	City parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of public transport				1.7
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2-m width on either side of all streets				1.7
	Adherence to building and parking standards				1.7
Sewerage and sanitation	Households connected to the waste water, sewerage network				2.4
	Treatment of waste water				1.7
	Use of treated water				1
Solid waste management	City population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				2
	Recycling of solid waste				1.7
	Solid waste disposal				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of required drainage systems at identified hotspots				1.7
	Rainwater harvesting				1
	Evacuation of water				1.7
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.4

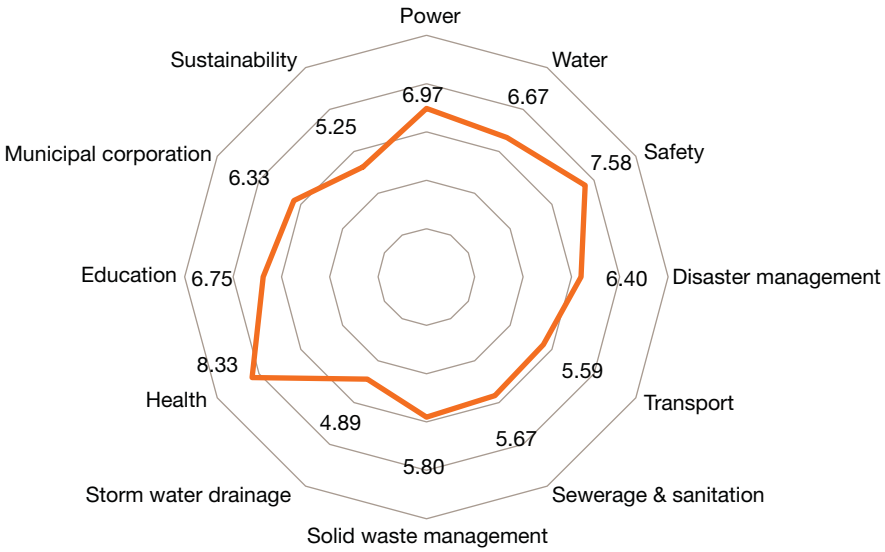
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulance, emergency wards)				2.7
Education	Total number of schools				2.4
	School for the differently abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2.3
Municipal corporation	Property tax payments				2.6
	Online license issues				2.3
	Complaint registrations				1.7
	Licenses issuance TAT				2
	RTI TAT				1
	Birth and death registrations				2.3
	Online building plan sanctions				1.4
Sustainability	Noise pollution				1.4
	Air pollution				1.4
	Adherence to the green building norms				2.1
	Water pollution				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Gurgaon



Gurgaon (formerly Gurgaon) is a rapidly developing city on the outskirts of the national capital. The city is seeing a massive inflow of multifaceted companies both from abroad and India. In sync with its posh image, Gurgaon scored highest on the health index of this study. The high rating of 8.33 is a direct consequence of the rising urban class in Gurgaon, which has led to big and small names in healthcare flocking to the city. The city scores above average in the power and safety sector; these have been the focus areas of the government owing to its bad past record in both sectors. The city's score on storm water drainage is below average, which is self-explanatory given the conditions during the monsoons. With scores of 6.4 in disaster management and 6.75 in the education sector, Gurgaon is an average performer in this category. Overall, the city scores 6.35 in this study.

Bhubaneshwar

Bhubaneshwar | City snapshot

Total area and population density

422 km²

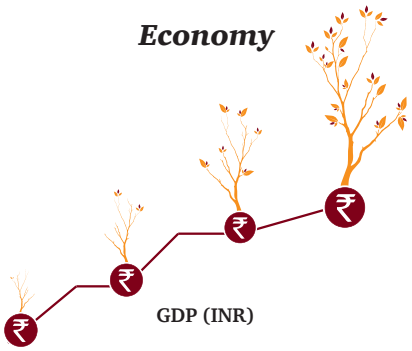
2,131.37/km²

Total population and gender ratio

52.9%

8.43 lakh

Economy



City demographics

Population growth rate
73.45%

Per capita:
26,537 INR

Literacy rate:
91.72%

Crime index:
25.73

Urban transport

Bus
Taxi: Share and on-hire
Autorickshaw: Share and on-hire
Local railway: Five railway stations within its city limits

City theme

Temple city of India

Cost of living

Grocery index 23.15

Cost of living index 21.85

Rent index 21.85

Restaurants index: 12.58

Pollution index

Air PI	Water PI	Noise PI
53.85	47.92	50.00

Next-gen infrastructure

- Traffic signal camera
- New Bhubaneswar railway station

Urban transport

- CESU
- Bhubaneswar BRTS
- Bhubaneshwar Municipal Corporation
- Public Health Engineering Organisation
- Orissa State Disaster Management Authority
- Bhubaneswar-Puri Transport Service Limited (BPTSL)
- Dream Team Sahara (DTS)
- Odisha State Road Transport Corporation
- Biju Patnaik International Airport

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.4
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.7
	Metering				2.7
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2
	Billing efficiency				2.3
	Revenue realisation				2.3
Water	24x7 water supply				2.7
	Metering of water connections				2.3
	Billing efficiency				2.3
	Online payment facility				2.3
	Water losses				2.4
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR, complaints registration				2.1
	Verification, validation or clearance				1.7
	Complaint response time				1.7
Disaster management	Disaster prediction, early warning system				2.1
	Disaster alarms and response system				2.1
	Efficient firefighting systems				2.1
	Fire stations basis population density				2.1
	Availability of fire stations with special devices and materials for firefighting				2.1
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2.3
	Challan management				2
	Traffic management system				2.4
	City parking management				1.7
	Access to para-transit				1.7
	Availability and frequency of public transport				2.3
	Availability of bicycle tracks				2.3

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				2.3
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water, sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1.3
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				2
	Recycling of solid waste				1.7
	Solid waste disposal				1.3
	Hazardous waste recycling				1.7
Storm water drainage	Availability of required drainage systems at identified hotspots				2
	Rainwater harvesting				1.6
	Evacuation of water				2
Health	No. of hospitals against population density				2.4
	Healthcare facilities				2.4
	Emergency response facilities (ambulance, emergency wards)				2.4

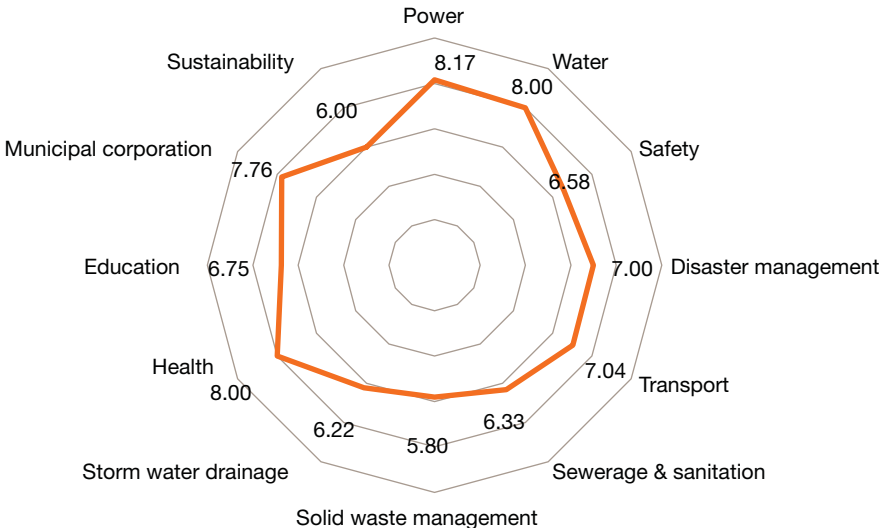
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	Total number of schools				2.4
	School for the differently abled				1.7
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				2.6
	Online license issues				2.3
	Complaint registrations				2.3
	Licenses issuance TAT				2.3
	RTI TAT				1.9
	Birth and death registrations				2.6
	Online building plan sanctions				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.7
	Adherence to the green building norms				2.1
	Water pollution				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Bhubaneshwar



Bhubaneswar is the capital of the Indian state of Odisha. It is the largest city in Odisha and is an economic and religious centre in eastern India. The city, however, has an average score on most parameters of this study, with the highest score obtained by power and the municipal corporation of the city at 7.77 and 7.76 respectively. Most other parameters of the city are within the range of 6 to 7 points. The city scores low on hygiene parameters like storm water drainage and solid waste management. Overall, the city scores 6.97 and manages to secure a place in the average overall range of the study.

Indore

Indore

City snapshot

Total area and population density

389.9 km²

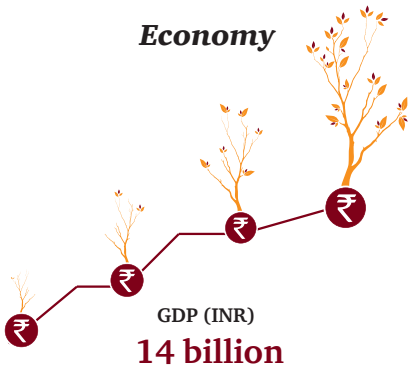
5116/km²

Total population and gender ratio

51.9%

19.94Lakh

Economy



GDP (INR)

14 billion

City demographics

Population growth rate

32.9%

Per capita:

52,501 INR

Literacy rate:

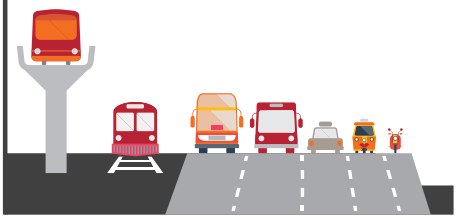
85.87%

Crime index:

63.93

Urban transport

Buses
Taxi
Rickshaw



City theme

Financial capital

Cost of living

Grocery index 23.15

Cost of living index 21.85

Rent index 4.16

Restaurants index: 12.58

Pollution index

Air PI	Water PI	Noise PI
76.47	68.75	61.54

Next-gen infrastructure

- Indore Metro (proposed)
- BRT (iBus)
- GPS enabled PCR vehicles
- Security surveillance cameras

Urban transport

- Poorv Kshetra Vidyut Vitaran Company Ltd.
- MP Jal Nigam
- Indore Municipal Corporation
- Indore Fire Service, MP police
- Madhya Pradesh State Disaster Management Authority
- Indore Police
- Divisional Office, MP health
- Atal Indore City Transport Services Limited
- Indore Development Authority
- MP revenue

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2.3
	Distribution losses				2.1
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.7
	Metering				2.7
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2
	Revenue realisation				2
Water	24x7 water supply of water				2.4
	Metering of water connections				2
	Billing efficiency				2
	Online payment facility				3
	Water losses				2.1
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR and complaint, etc., registration				2.4
	Verification, validations and clearance				2
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				2.1
	Efficient firefighting systems				2.1
	Fire station basis population density				2.1
	Availability of fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2.3
	Challan management				2.3
	Traffic management system				2.4
	Parking Management				2
	Access to para-transit				2
	Availability and frequency of mass transport				2.3
	Availability of bicycle tracks				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				2
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1.6
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				2.3
	Recycling of solid waste				2
	City solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.6
	Hazardous waste recycling				2
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				1.7
	Rainwater harvesting				1.3
	Evacuation of water				2
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.4

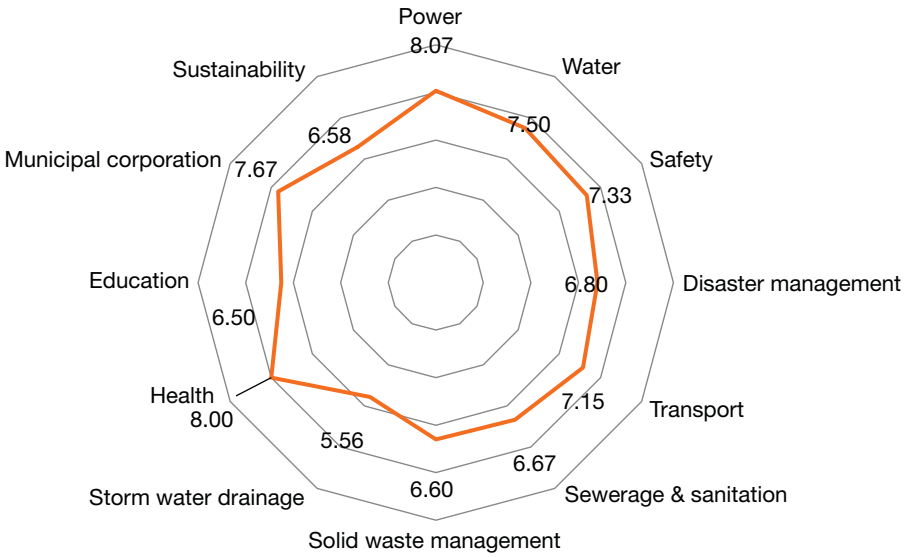
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulances, emergency wards, etc.)				2.4
Education	Total number of schools				2.4
	Schools for the specially abled				1.4
	Colleges against population density requirement				2
	Professional colleges based on population density requirement				2
Municipal corporation	Property tax payments				2.6
	Online license issues				2.3
	Complaint registrations				2.3
	Licenses issuance TAT				2
	RTI TAT				1.6
	Registration of birth and death				2.7
	Online building plan sanction				2.6
Sustainability	Noise pollution				1.7
	Air pollution				1.7
	Adherence to the green building norms				2.4
	Water pollution				2.1

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Indore



Indore is rich in history and is the most populous city in the state of Madhya Pradesh. It is often referred to as the commercial capital of Madhya Pradesh. Indore's proximity to Mumbai has ensured its position as a business hub for generations. Indore scores the highest in the power sector with 8.07, followed closely by healthcare with a score of 8.00. Disaster management in the city is reasonably good at a healthy score of 7.8o. Water, safety and transport fared decently with scores of 7.50, 7.33 and 7.15 respectively. The city scored the worst on storm water drainage with a meagre 5.56. Indore needs to improve its education facilities and the solid waste management and sewerage and sanitation conditions in order to compete with the cities of the future. The overall score of the city is 7.03.

Kochi

Kochi | City snapshot

Total area and population density

94.88 km²

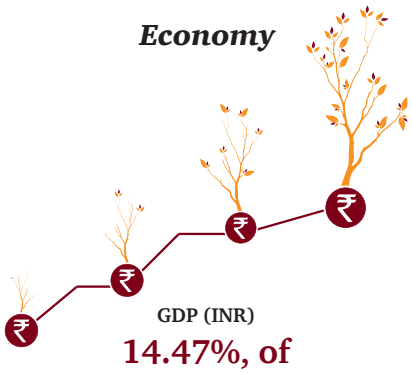
6340/km²

Total population and gender ratio

49.3%

6.33 lakh

Economy



GDP (INR)

14.47%, of Kerala's GDP

City demographics

Population growth rate

6%

Per capita:

85,070 INR

Literacy rate:

97.3%

Crime index:

31.25

Urban transport

Buses
Taxi
Rickshaw
Ferry
Metro

City theme

Connected and accessible city

Cost of living

Grocery index 22.37

Cost of living index 21.86

Rent index 5.42

Restaurants index: 12.06

Pollution index

Air PI	Water PI	Noise PI
63.64	68.06	55

Next-gen infrastructure

- Metro
- Transport multi-modal integration
- Solar-powered airport

Urban transport

- Kerala State Electricity Board
- Kerala Water Authority
- Kochi Municipal Corporation
- Kerala State Disaster Management Authority
- Kochi Fire Services
- Kochi City Police
- Revenue Department Office
- Collegiate Education Department
- Department of Health and Family Welfare
- Kerala Urban Road Transport Corporation
- Greater Cochin Development Authority

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.7
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.7
	Metering				2.7
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2.3
	Billing efficiency				2.6
	Revenue realisation				2.3
Water	24x7 water supply				2.1
	Metering of water connections				2
	Billing efficiency				2
	Online payment facility				3
	Water losses				2.1
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.7
	Online FIR and complaint, etc., registration				3
	Verification, validation or clearance				2
	Complaint response time				2
Disaster management	Disaster prediction, early warning system				2.1
	Disaster alarms and response system				2.1
	Efficient firefighting systems				2.1
	Fire stations basis population density				2.4
	Availability of fire stations with special devices and materials for firefighting				2.1
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2
	Challan management				2.3
	Traffic management system				2.1
	Parking management				1.7
	Access to para-transit				1.7
	Availability and frequency of mass transport				2.3
	Availability of bicycle tracks				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				1.7
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water, sewerage network				2.4
	Treatment of waste water				2
	Use of treated water				1.3
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				1.7
	Recycling of solid waste				1.7
	City solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.6
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				1.7
	Rainwater harvesting				1.6
	Evacuation of water				2
Health	No. of hospitals against population density				2.4
	Healthcare facilities				2.4
	Emergency response facilities (ambulances, emergency wards, etc.)				2.4

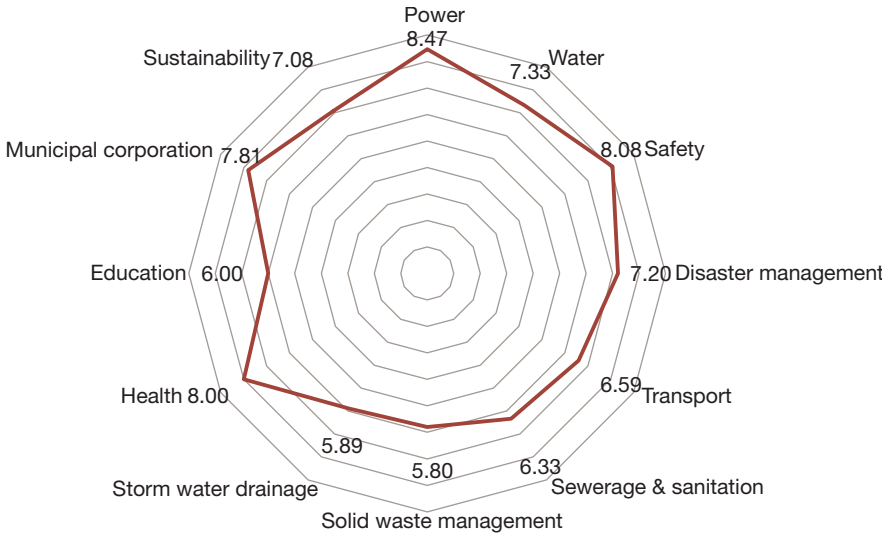
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	Total number of schools				2.1
	School for the differently abled				1.7
	Colleges against population density requirement				1.7
	Professional colleges based on population density requirement				1.7
Municipal corporation	Property tax payments				2.3
	Online license issues				2.3
	Complaint registrations				2.3
	Licenses issuance TAT				2.3
	RTI TAT				1.9
	Registration of birth and death				3
	Online building plan sanction				2.3
Sustainability	Noise pollution				2
	Air pollution				2
	Adherence to the green building norms				2.1
	Water pollution				2.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Kochi



Kochi is known as Queen of the Arabian Sea and has been an important spice trading centre for India from as early as the fourteenth century. From the pre-Islamic era, Kochi has maintained a trade network with Arab merchants. Kochi is also one of the major tourist destinations in India, and was ranked 6 by Outlook Traveller Magazine. It ranks the highest in the power sector, despite unexpected power outages in summer this year. It obtained a score of 8 in the domains of healthcare and disaster management. Kochi citizens feel safe in their city, which is why the city got a high score of 8.08 on safety. The city's storm water drainage continues to be a problem and it scored only 5.89 on the same. Solid waste management is also in a shambles as the city scored a meagre 5.80 in this domain. Kochi needs more educational institutions and needs to improve its transport facilities in order to compete in the smart city race. The overall rank of the city is 7.04.

Noida

Noida

City snapshot

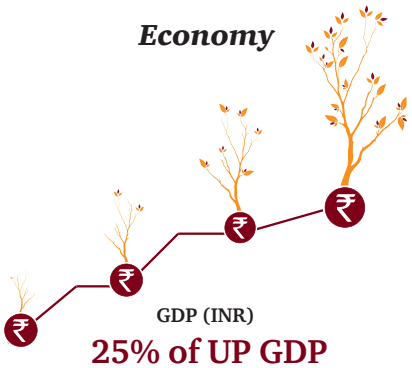
Total area and population density

Total population and gender ratio

55%

6.42 Lacs

Economy



GDP (INR)

25% of UP GDP

City demographics

Population growth rate
52%

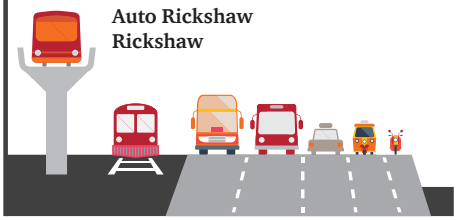
Per capita:
0.28 lakh INR/annum

Literacy rate:
86.53%

Crime index:
62.83

Urban transport

Metro: DMRC, NMRC
Buses: DTC and local
Taxi
Auto Rickshaw
Rickshaw



City theme

IT capital of NCR

Cost of living

Groceries Index 26.43
Local Purchasing Power 89.54
Rent Index 6.99
Restaurants index 20.43

Pollution index

Air PI	Water PI	Noise PI
90.0	83.93	47.41

Next-gen infrastructure

- Delhi and Noida Metro
- Traffic signal Camera
- Intelligent transport system

Urban transport

- Noida Power Company Limited (NPCL)
- Noida Jal Nigam
- Noida Municipal Corporation
- Uttar Pradesh State Disaster Management Authority
- UP Fire Service
- DTC, Delhi Metro
- NOIDA
- Uttar Pradesh Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.1
	Quality				1.7
	Distribution losses				2.1
	Energy consumption details				2.4
	Online payment facility				2.4
	Grievance redressal or CRM for citizens				2.4
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				1.7
	Billing efficiency				2
	Revenue realisation				1.7
Water	24x7 water supply of water				2.4
	Metering of water connections				1.7
	Billing efficiency				2
	Online payment facility				2.7
	Water losses				1.7
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.4
	Online FIR and complaint, etc., registration				2.4
	Verification, validations and clearance				1.7
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				1.8
	Disaster alarm and response system				2.1
	Efficient firefighting systems				1.8
	Fire station basis population density				2.1
	Availability of fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2
	Challan management				1.7
	Traffic management system				2.1
	Parking Management				1.4
	Access to para-transit				1.4
	Availability and frequency of mass transport				2
	Availability of bicycle tracks				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Continuous unobstructed footpath of minimum 2-m width on either side of all streets				1.7
	Adherence to building and parking standards				1.7
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.1
	Treatment of waste water				2
	Use of treated water				1.3
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				1.7
	Recycling of solid waste				1.7
	City solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				2
	Rainwater harvesting				1.6
	Evacuation of water				1.7
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.4

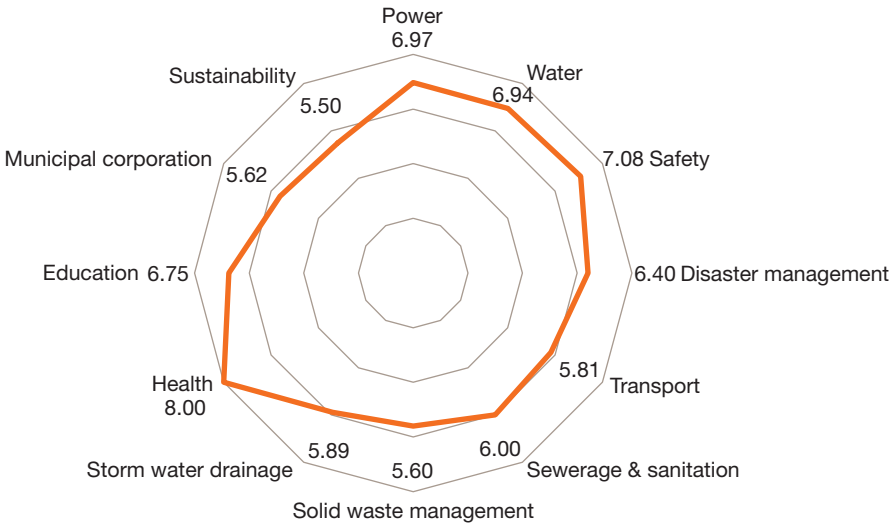
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulances, emergency wards, etc.)				2.4
Education	Total number of schools				2.7
	Schools for the specially abled				1.7
	Colleges against population density requirement				2
	Professional colleges based on population density requirement				1.7
Municipal corporation	Property tax payment				1.7
	Online license issuance				1.7
	Complaint registration				2
	Licenses issuance TAT				1.7
	RTI TAT				1.3
	Registration of birth and death				1.7
	Online building plan sanction				1.7
Sustainability	Noise pollution				2
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services- Noida



Like Gurgaon, Noida, a satellite city on the other side of the capital, has also seen rapid development and urbanisation in the last decade. It scores the highest score on health. In fact, at 8.00, it has the highest score on the health parameter among all cities covered in this study. It fares much higher than average on parameters like power (6.97), water (6.94) and safety (7.08). On parameters like sewage and sanitation, disaster management, education, and municipal corporation, it fares slightly higher than average, with scores of 6.00, 6.40, 6.75, 5.62 respectively. The overall score for this city is below average at 6.3.

Lucknow

Lucknow | City snapshot

Total area and population density

1,815/km²

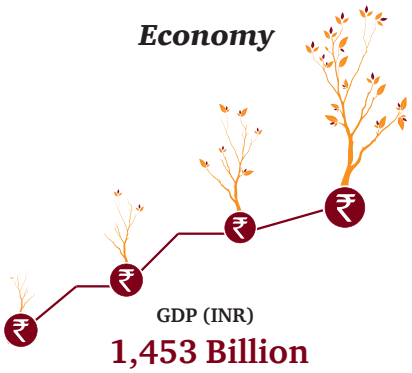
2,528 km²

Total population and gender ratio

51.8%

28.18 Lacs

Economy



GDP (INR)

1,453 Billion

City demographics

Population growth rate

25.79%

Literacy rate:

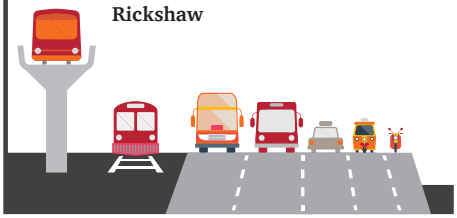
82.5%

Crime index:

58.82

Urban transport

Lucknow City Bus: 300
Taxi
Autorickshaw
Rickshaw



City theme

The City of Nawabs

Cost of living

Grocery index 25.62

Local Purchasing Power 65.89

Rent index 4.82

Restaurants index: 15.40

Pollution index

Air PI	Water PI	Noise PI
79.81	70.24	55.95

Next-gen infrastructure

- CCTV at traffic signals
- Lucknow Metro (Dec '16)

Urban transport

- Uttar Pradesh Police
- Lucknow Development Authority Corporation
- Lucknow Municipal Corporation
- Lucknow Jal Sansthan
- Uttar Pradesh Power Corporation Ltd.
- Uttar Pradesh State Disaster Management Authority
- U.P Pollution Control Board, Lucknow
- Uttar Pradesh Housing and Development Board
- UP Education Department, Lucknow
- Lucknow Mahanagar Parivahan Sewa

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.7
	Quality				2.4
	Distribution losses				2
	Energy consumption details				2.4
	Online payment facility				3
	Grievance redressal or CRM for citizens				2.4
	Metering				2.1
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2
	Billing efficiency				2.4
	Revenue realisation				1.7
Water	24x7 water supply				2.1
	Metering of water connections				2.1
	Billing efficiency				2.1
	Online payment facility				2.4
	Water losses				1.7
	Revenue realisation				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.1
	Online FIR, complaints registration				2.4
	Verification, validation or clearance				2.4
	Complaint response time				2
Disaster management	Disaster prediction, early warning system				1.8
	Disaster alarms and response system				2.1
	Efficient firefighting systems				1.8
	Fire stations basis population density				2.1
	Availability of fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2.7
	Challan management				1.7
	Traffic management system				2.1
	City parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of public transport				2.4
	Availability of bicycle tracks				2.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				2.4
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water, sewerage network				2
	Treatment of waste water				1.6
	Use of treated water				1.3
Solid waste management	City population with regular solid waste collection (residential)				2
	Collection of municipal solid waste				2
	Recycling of solid waste				2
	Solid waste disposal				1.6
	Hazardous waste recycling				2
Storm water drainage	Availability of required drainage systems at identified hotspots				2
	Rainwater harvesting				1.3
	Evacuation of water				1.7
Health	No. of hospitals against population density				2.4
	Healthcare facilities				2.4
	Emergency response facilities (ambulances, emergency wards, etc.)				2.4

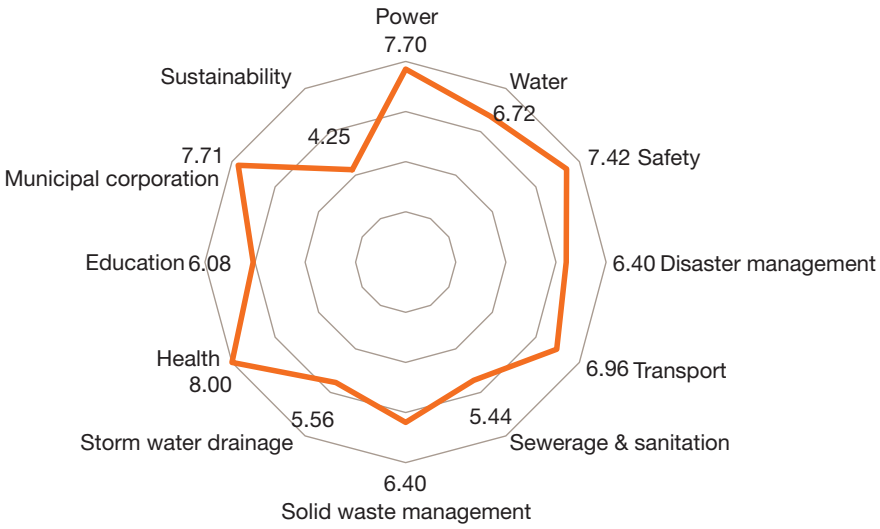
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	Total number of schools				2
	School for the differently abled				1.3
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payments				3
	Online license issues				1.7
	Complaint registrations				2.6
	Licenses issuance TAT				2.1
	RTI TAT				2.4
	Birth and death registrations				2.7
	Online building plan sanctions				1.7
Sustainability	Noise pollution				1.7
	Air pollution				1
	Adherence to the green building norms				1.4
	Water pollution				1

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Lucknow



Lucknow, also known as the City of Nawabs, is the capital of the most populous state of India, Uttar Pradesh. It is famous for its multicultural lifestyle and is very well known for its cultural and artistic history. It has been the seat of power for the Nawabs of Oudh/Avadh. Lucknow has the highest score in the healthcare sector. It has done reasonably well in the power sector. The efforts to have better surveillance in the city have assisted in improving the safety score of the city to 7.42. The city needs to improve its transportation and education facilities as they scored an average 6.96 and 6.08 respectively. Sewerage and sanitation and storm water drainage need immediate attention as they scored a meagre 5.44 and 5.56 respectively. The overall city rank is 6.85.

Chandigarh

Chandigarh | City snapshot

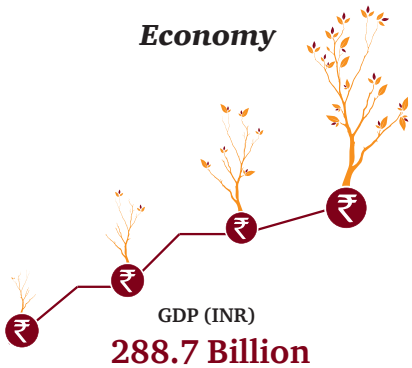
Total area and population density

Total population and gender ratio

55%

10.55 Lacs

Economy



GDP (INR)

288.7 Billion

City demographics

Population growth rate
40.3%

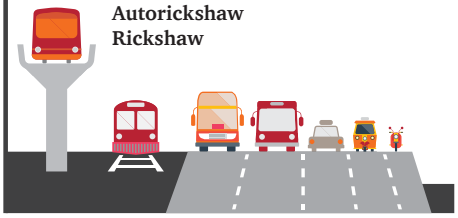
Per capita:
1.28 lakh INR/annum

Literacy rate:
86.43%

Crime index:
37.25

Urban transport

Buses: Chandigarh Transport Undertaking (CTU)
Taxi
Autorickshaw
Rickshaw



City theme

The beautiful city

Cost of living

Grocery index 25.06

Local purchasing power 63.11

Rent index 6.34

Restaurants index: 17.62

Pollution index

Air PI	Water PI	Noise PI
53.57	60.71	61.93

Next-gen infrastructure

- Smart lights
- Common pay card
- Traffic camera surveillance

Urban transport

- PSEB
- BBMB
- Punjab Water Supply and Sewerage Board
- Municipal Corporation Chandigarh
- Punjab - National Disaster Management Authority
- HDMA - Haryana State Disaster Management Authority
- Chandigarh Fire and Emergency Services (CMC)
- The Excise & Taxation Department
- Education Department Chandigarh
- National Health Mission U.T. Chandigarh
- Chandigarh Transport Undertaking
- Chandigarh Housing Board
- Chandigarh Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.7
	Energy consumption details				2.7
	Online payment facility				3
	Grievance redressal or CRM for citizens				3
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2
	Revenue realisation				2
Water	24x7 water supply				2.1
	Metering of water connections				2
	Billing efficiency				1.7
	Online payment facility				2.4
	Water losses				2.4
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.7
	Online FIR and complaint, etc., registration				2.1
	Verification, validations and clearance				1.7
	Complaint response time				1.7
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				1.8
	Efficient firefighting systems				2.1
	Fire station basis population density				2.1
	Fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, traffic signal violation detection				2.6
	Challan management				1.7
	Traffic management system				2.4
	Parking Management				1.4
	Access to para-transit				1.7
	Availability and frequency of mass transport				1.7
	Availability of bicycle tracks				2.6

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				2.6
	Adherence to building and parking standards				2
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.7
	Waste water treatment				2
	Treated water usage				1.3
Solid waste management	Population with regular solid waste collection (residential)				2.3
	Collection of municipal solid waste				2.3
	Recycling of solid waste				2
	Solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.7
Storm water drainage	Availability of requisite drainage systems at identified hotspots in the city				2.3
	Rainwater harvesting				1.6
	Evacuation of water				1.7
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.4

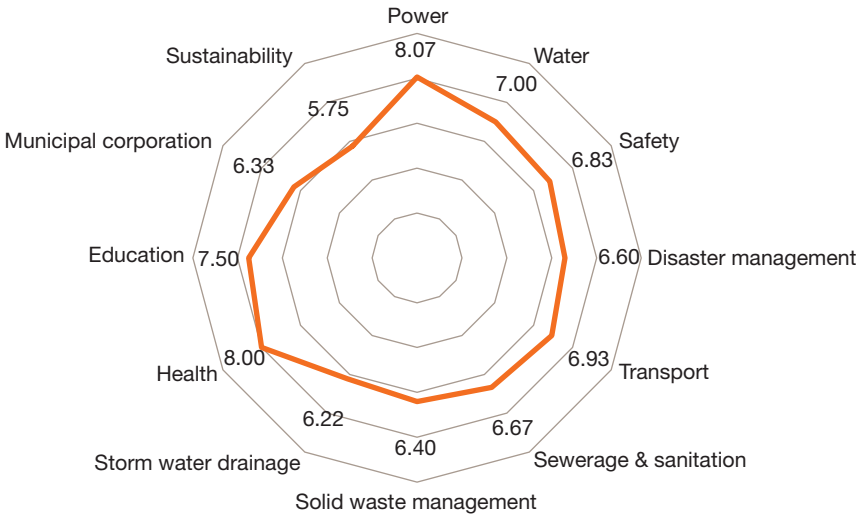
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulances, emergency wards, etc.)				2.4
Education	Total number of schools				2.7
	Schools for the specially abled				1.7
	Colleges against population density				2.3
	Professional colleges against population density				2.3
Municipal corporation	Property tax payments				2.6
	Online license issues				1.7
	Complaint registrations				2.3
	Licenses issuance TAT				1.7
	RTI TAT				1.3
	Birth and death registration				1.7
	Online building plan sanction				2
Sustainability	Noise pollution				1.7
	Air pollution				1.7
	Adherence to the green building norms				1.8
	Water pollution				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Chandigarh



Chandigarh is a union territory that serves as the capital of both Haryana and Punjab. Hailed as one of the most well-planned cities in the country, Chandigarh scored slightly above average on most of the parameters it was measured on. It was rated the highest on the power parameter at 8.07, and obtained an above average score of 6.6, 8, 7.5 in disaster management, health and education respectively. The lowest score for the city was for storm water drainage (6.22), which is contradictory to its image of being a well-planned city. This could be a consequence of the city's low score on sustainability (5.75). The city's overall score is 6.85 in this study.

Ludhiana

Ludhiana | City snapshot

Total area and population density

9752 /Km²

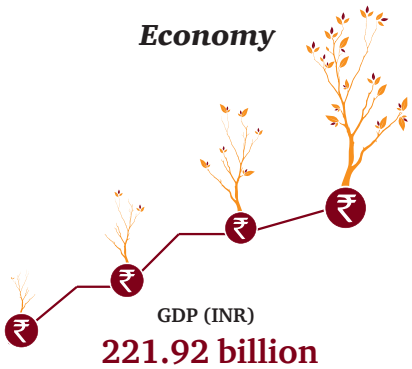
310 Km²

Total population and gender ratio

54%

16.18 lakhs

Economy



GDP (INR)

221.92 billion

City demographics

Population growth rate
15%

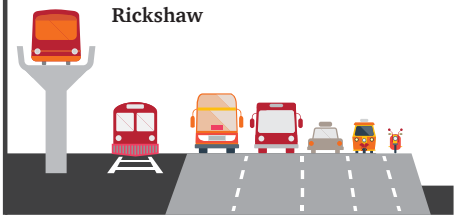
Per capita:
79,754 INR

Literacy rate:
85.77%

Crime index:
62.51

Urban transport

Buses: 50
Taxi
Autorickshaw
Rickshaw



City theme

Manchester of the east

Cost of living

Grocery index 24.38

Local purchasing power 63.93

Rent index 4.42

Restaurants index: 20.64

Cost of living index 27.20

Pollution index

Air PI	Water PI	Noise PI
80.88	63.4	51.92

Next-gen infrastructure

- Proposed Ludhiana Metro
- Traffic camera surveillance

Urban transport

- PSEB
- BBMB
- Punjab Water Supply and Sewerage Board
- Municipal Corporation Ludhiana
- Punjab - National Disaster Management Authority
- The Excise & Taxation Department
- Punjab police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.7
	Energy consumption details				2.4
	Online payment facility				2.7
	Grievance redressal or CRM for citizens				2.4
	Metering				2.4
	Energy efficiency initiatives: Streets, renewable, subsidy and green buildings				2
	Billing efficiency				2
	Revenue realisation				2
Water	24x7 water supply				2.4
	Metering of water connections				1.7
	Billing efficiency				1.7
	Online payment facility				2.7
	Water losses				2.1
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.7
	Online FIR, complaints registration				2.1
	Verification, validation or clearance				1.7
	Complaint response time				2
Disaster management	Disaster prediction, early warning system				2.1
	Disaster alarms and response system				2.1
	Efficient firefighting systems				1.8
	Fire stations basis population density				2.1
	Fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2
	Challan management				1.7
	Traffic management system				2.4
	Parking management				1.7
	Access to para-transit				1.4
	Availability and frequency of public transport				1.7
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				1.7
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water, sewerage network				2.4
	Waste water treatment				1.7
	Treated water usage				1
Solid waste management	Population with regular solid waste collection (residential)				1.7
	Collection of municipal solid waste				1.4
	Recycling of solid waste				1.7
	Solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of required drainage systems at identified hotspots				1.4
	Rainwater harvesting				1
	Evacuation of water				1.4
Health	No. of hospitals against population density				1.8
	Healthcare facilities				2.1
	Emergency response facilities (ambulances, emergency wards, etc.)				2.1

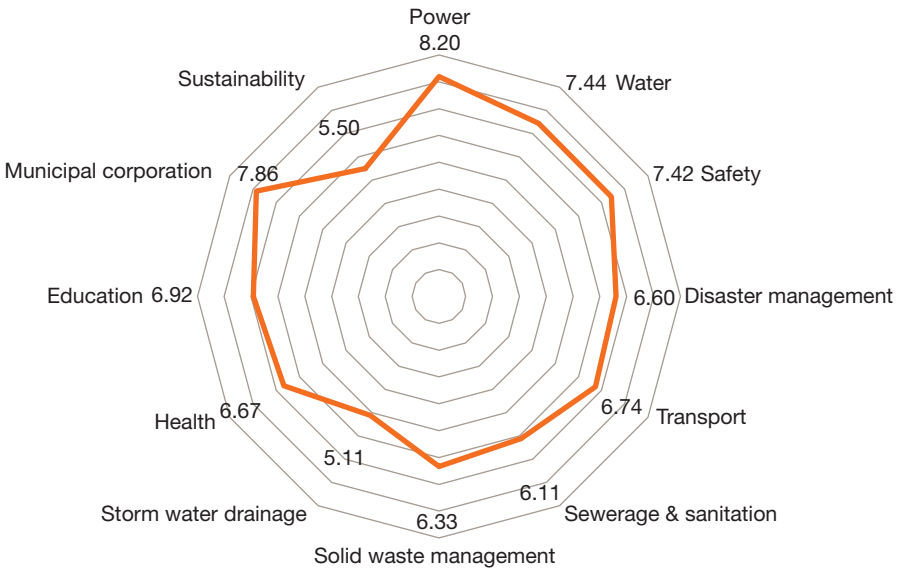
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Education	Total number of schools				2.1
	School for the differently abled				1.4
	Colleges against population density				2
	Professional colleges against population density				2
Municipal corporation	Property tax payment				2.3
	Online license issues				1.7
	Complaint registrations				2.3
	Licenses issuance TAT				1.7
	RTI TAT				1.9
	Birth and death registrations				2.3
	Online building plan sanctions				2.3
Sustainability	Noise pollution				1.7
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Ludhiana

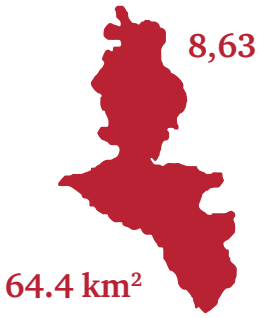


Ludhiana is the largest city of the state of Punjab and is the second largest city north of Delhi. It holds great socio-economic significance for the state, as is evident from the state's emphasis on power, which at 7.67 makes Ludhiana the highest scorer in this category. Like Chandigarh, sustainability and storm water drainage are the lowest scoring parameters for Ludhiana, which has scored above average on most other parameters like municipal corporation, safety and water. The score on healthcare is in the range of 6.5+. Overall, the city has an above average score of 6.18.

Dehradun

Dehradun | City snapshot

Total area and population density



8,633/km²

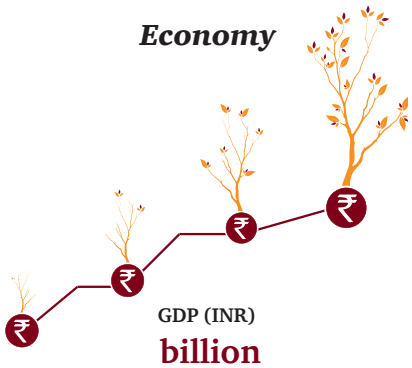
64.4 km²

Total population and gender ratio

52.3%

5.74 Lacs

Economy



GDP (INR)

billion

City demographics

Population growth rate
32.48%

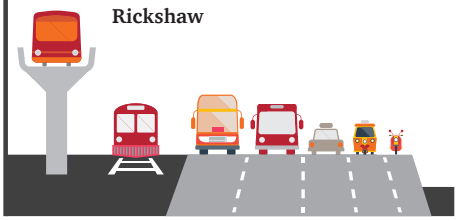
Per capita:
93,420 INR/annum

Literacy rate:
85.24%

Crime index:
48.33

Urban transport

Buses: 50
Taxi
Autorickshaw
Rickshaw



City theme

City of schools

Cost of living

Grocery index 22.20

Local purchasing power 57.36

Rent index 4.42

Restaurants index: 19.17

Pollution index

Air PI	Water PI	Noise PI
79.46	69.32	55.43

Next-gen infrastructure

- Central Command and Control Centre
- Disaster Management Centre

Urban transport

- Dehradun Nagar Nigam
- Uttarakhand Power Corporation Limited (UPCL)
- Uttarakhand Jal Sansthan
- Mussoorie Dehradun Development Authority
- Industries Department Uttarakhand
- Uttarakhand Police

Components scoring

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Power	24x7 electricity supply				2.4
	Quality				2
	Distribution losses				2.4
	Energy consumption details				2.4
	Online payment facility				2.7
	Grievance redressal or CRM for citizens				2.4
	Metering				2.4
	Energy efficiency initiatives: Street, renewable energy subsidy and green buildings				2
	Billing efficiency				2.3
	Revenue realisation				2
Water	24x7 water supply				2.4
	Metering of water connections				1.4
	Billing efficiency				1.7
	Online payment facility				2.4
	Water losses				2.1
	Revenue realisation				2

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
Public safety	City surveillance				2.1
	Online FIR and complaint, etc., registration				2.4
	Verification, validations and clearance				1.7
	Complaint response time				2
Disaster management	Disaster prediction system, early warning system				2.1
	Disaster alarm and response system				2.4
	Efficient firefighting systems				1.8
	Fire station basis population density				1.8
	Fire stations with special devices and materials for firefighting				1.8
Transport	Transport surveillance: Traffic violation detection, speed violation detection, red light violation detections				2.3
	Challan management				2
	Traffic management system				2.4
	Parking Management				1.7
	Access to para-transit				1.4
	Availability and frequency of mass transport				1.4
	Availability of bicycle tracks				1.4

High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Unobstructed footpaths of minimum 2m width on either side of all streets				1.4
	Adherence to building and parking standards				1.4
Sewerage and sanitation	Households connected to the waste water or sewerage network				2.1
	Waste water treatment				1.7
	Treated water usage				1
Solid waste management	Population with regular solid waste collection (residential)				1.7
	Collection of municipal solid waste				1.7
	Recycling of solid waste				1.4
	Solid waste that is disposed of in a sanitary landfill, open dump or burnt				1.3
	Hazardous waste recycling				1.4
Storm water drainage	Availability of required drainage in identified hotspots				1.4
	Rainwater harvesting				1
	Evacuation of water				1.7
Health	No of hospitals against population density				2.4
	Healthcare facilities				2.4

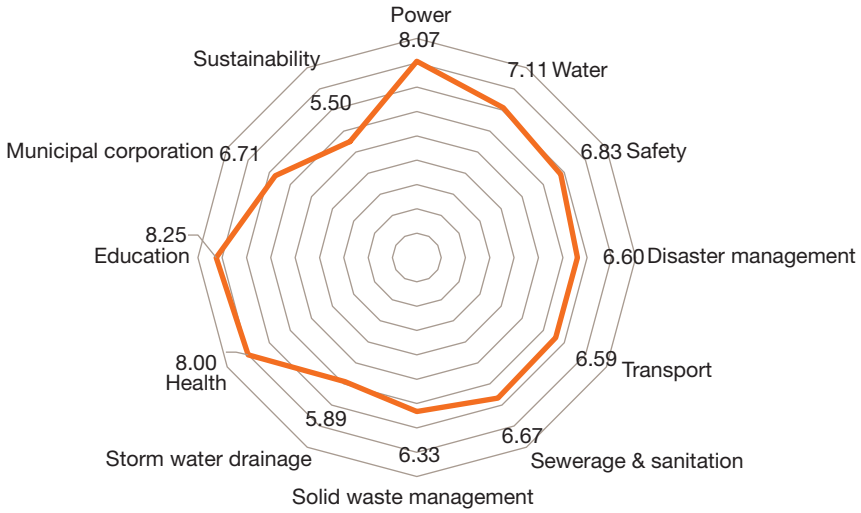
High score = 3 Moderate Score = 2 Limitedscore = 1

Components	Sub-components	Current state	Technology intervention	Contribution towards smart city	Score (considering weights)
	Emergency response facilities (ambulances, emergency wards, etc.)				2.4
Education	Total number of schools				2.4
	School for the specially abled				1.7
	Colleges against population density				2.3
	Professional colleges against population density				2.3
Municipal corporation	Property tax payment				1.7
	Online license issues				1.4
	Complaint registration				2
	Licenses issuance TAT				1.4
	RTI TAT				1
	Birth and death registration				2
	Online building plan sanction				1.4
Sustainability	Noise pollution				1.7
	Air pollution				1.4
	Adherence to the green building norms				1.8
	Water pollution				1.7

High score = 3 Moderate Score = 2 Limitedscore = 1

Overall assessment

Services - Dehradun



Dehradun is the capital city of the mountainous state of Uttrakhand. It lies in the Doon Valley of the Himalayas, in between the Ganges and the Yamuna. Dehradun is famous for its schools, earning it the title of 'the city of schools'. Dehradun has witnessed a very healthy growth rate in recent years. In our assessment, Dehradun earned a score of 6.83. In terms of safety, Dehradun fares well in disaster management; however, the city is plagued by a poor sewerage system. It has scored 7.11 on water, which is below standard and requires improvement. Storm water drainage has a score of 4.56, which is much below the benchmark. The lowest score (5.50) is for sustainability.

Conclusion: Next steps

Our assessment of these 20 Indian cities indicates that most cities have robust infrastructure mechanisms in place to deliver fundamental services. However, a significant transformation is still required to take the experience and quality of liveability to the next level.

Power, a basic necessity in smart cities, scores relatively well in our assessment as compared to the other parameters. Several cities have round-the-clock power supply and efficient metering systems with facilities for online bill payment. Kochi and Ludhiana have accelerated to the top position from last year in the power race, with a consolidated score of 8.47 and 8.3 respectively, owing to various progressive initiatives and reforms undertaken by city authorities.

Water, another significant component, has huge scope for improvement across most cities assessed. Noida, Bhubaneswar and Delhi hold the top spots in this area, while Jaipur, Kolkata, Pune and Chandigarh need to reassess and set up suitable mechanisms for ensuring adequate availability, metering and other services.

With respect to municipal corporation services for citizens and businesses, such as online certificate registrations, license issuance and online approval of building plans, these services are fairly effective in many regions, with Noida, Kochi, Ludhiana and Ahmedabad in the lead. However, cities such as Jaipur and Pune need an overhaul in their service delivery mechanisms to ensure better comfort and convenience for citizens.

There is much emphasis on transport domain reforms in all cities, with city administrators having planned corrective measures for increasing multimodal transport as well as ensuring seamless interconnectivity. Bangalore and Indore are surging ahead with projects in online ticketing, bus fleet management and MIS system.

Disaster management is a critical component and here, Kochi, Indore and Dehradun have emerged as this year's frontrunners in terms of disaster management initiatives. Most cities lag behind in disaster management, and city authorities must make this one of their top priorities.

With regard to other urban infrastructure, most cities, notably Hyderabad with a score of 4.67, also lag behind in waste management as well as sewerage and sanitation. The government has undertaken a nationwide cleanliness campaign, Swachh Bharat, in order to propagate the culture of cleanliness among citizens. Also, several regulatory measures are being taken to have effective waste management mechanisms in place.

As far as social infrastructure is concerned, providing a sense of security to citizens is a key element of the smart city initiative and surveillance technology infrastructure augmentation needs to be made a top priority across all cities assessed in this report.

Additionally, several cities need to catch up on the health and safety fronts. Noida leads in health and safety. With regard to education, emphasis must be laid on increasing the number of government schools and institutions, with a focus on building schools for differently abled children.

The tremendous enthusiasm and endeavours of the administrators of these cities in leading them towards the new era of smart and sustainable cities are truly remarkable. On completion of the benchmark assessment, the city administrators and policymakers now need to carefully examine their city's readiness to take the next leap of transformation and accordingly articulate policy and regulations. We have consolidated few key pointers that can help in empowering the start-to-smart journeys of these cities.

Clear definition of leadership roles

A governance model with clearly defined leadership roles needs to be established to work around the complex city administrative structure. Administrations need to be accountable and responsive to their citizens, transparent in their reporting on the use of public resources and in decision-making, and create opportunities for participation in policy as well as service delivery.

Setting up of municipal services supervisory body at the state level

An independent supervisory body needs to be set up at the state level in order to counsel, regulate, monitor and arbitrate, at the desired levels, the roles and responsibilities of all utility providers at the city levels. Cities may establish a nodal agency that will work together with city officials and policymakers in order to ensure that municipal strategies and urban planning targets are completely aligned with the city's overall smart and sustainable vision. This agency will be able to drive active collaboration and can serve as the single window for all stakeholders. Bhubaneswar, Orissa, the top contender in Round I has already set up an SPV and appointed a CEO

Active involvement of the private sector

The private sector has always been considered a receptacle of innovation and efficiency, the two key ingredients for bringing any smart, sustainable city's vision to life. Businesses are expected to usher in new and innovative technological solutions and services. Not just large global companies but also innovative start-ups and local players will play a critical role. The creative solutions and approaches of the former and the local understanding and connect of the latter will work to their advantage and create an equation of mutual gain for both businesses and citizens.

There is a need for governments to work closely with the private sector on innovative solutions and create an enabling environment with respect to transparent policies and ease of licencing in order to accelerate planning and development works on major infrastructure projects that will help in developing business cases and investment options. To reduce risks such as community risk (acceptance from local population) and scope risk (change, increase or cancellation of scope), early involvement of both the private sector and citizens is required.

Shift in approach from PPP to PPPP

City governments need to change their outlook towards PPP projects and should covert them into people-private-public-partnership (PPPP) projects which take into account the citizens' involvement in the urbanisation process. The participation of citizens in the design of the city will play a key role in the development and progression of the city.

Opening up data for transparency and service delivery

Open data helps in ensuring transparency across systems, driving the participation of citizens in governance and improving service delivery by virtue of leveraging data for the welfare of people at large. With open data, governments may fuel the set-up of groundbreaking services and businesses that render commercial and social value. Additionally, open data will facilitate coordination among multiple departments and increase the visibility of city coordinates for the delivery of services.

Define the land monetisation framework

In order to determine the value of land and tackle issues related to land values, a clear framework needs to be designed. However, the framework needs to be transparent and accountable with due attention to the needs of the poor and marginalised sections.

Determine user charges to cover operation and maintenance (O&M) costs

In order to effectively cover O&M costs incurred, an appropriate level of user charges must be determined and levied for all measurable services where beneficiaries are easily identifiable. Ideally, a structure where higher levels of consumption exist, a higher tariff needs to be charged.

Monitoring and measuring success

Tracking outcomes is essential to the success of any smart city implementation. Governments should engage with citizens, stakeholders and the private sector to identify key city metrics and the data required to assess performance. This data will be critical in the design of targeted policies, reforms and capital investments, and to measure the effectiveness of these actions and consequently to ensure the success of the smart city initiative.

With the final list of 109 smart cities being announced by GoI and proposals for 33 cities already selected, the Smart City Mission is now rapidly surging ahead towards success. As per the mission guidelines for smart cities released by the Ministry of Urban Development, a clean and sustainable environment will be a significant feature of the upcoming smart cities. Cities have to be engines of economic growth that provide equal opportunities for prosperity. They also have to be liveable, connected, efficient, healthy, safe, inclusive, affordable and climate resilient. Successfully embedding these tenets of sustainability into smart city plans will require clear articulation of the role of ICT in achieving the city's vision, urban development benchmarks, responding to the needs of citizens and other stakeholders, and supporting the required governance structure.

Strengthened by central government's financial support, policy support, legal backing and capacity-building support, the selected city administrators need to manage their finances effectively and manage the city's key programmes and projects, its performance risks and assets, including the human capital employed in performing its functions. All of this must be done in a way that is sustainable and through collaboration and partnerships with citizens, the private sector, academia and NGOs.

A wide variety of projects have been shortlisted for adopting the smart route and, at the same time, focussing on the sustainability aspect. Some of the key priority projects are a centralised command and control system which will integrate all the city data and act as a central node to provide a host of city services and a citizen engagement platform—namely city apps and a

citizen dashboard, transit operations management for enhanced ICT-based maintenance and monitoring, including smart parking, public information systems, smart multi-mobility cards, area-based traffic control, and traffic mobile app; water supply management through smart metering and leak identification system (supervisory control and data acquisition/ advanced metering infrastructure); safety management through CCTV surveillance; emergency response mechanism; solid waste management system, including GPS-enabled garbage vehicle tracking and mobile app based cleanliness monitoring.

Each selected city, with its own vision and plan, now needs to work together with various stakeholders and define what 'progress' will mean over the course of implementing its plan. Measurable key performance indicators (KPIs) with corresponding targets and time frames will have to be defined and monitored continuously and the ensuing progress will have to be transparently reported and communicated to all the stakeholders.

It is important for city administrators to take stock of the report's assessment results, which indicate a substantial gap in various areas, such as safety, sewerage and sanitation, sustainability, storm water drainage, solid waste management and transport. Cities also need to take cognisance of their readiness before embarking on the 'smart' journey. In addition, while undertaking city development initiatives, city administrators also need to roll out capacity-building measures in order to acquaint the general public with the mechanisms and benefits of the smart solutions at their disposal. Moreover, they need to have inter-departmental cohesiveness as well as harmony for driving ICT initiatives.

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The Express Group is one of India's largest media conglomerates, with a wide selection of publications and a network of offices spread across India. Today, with 32 national editions, 13 publication centres and 4 language dailies that reach over 19 million people daily, the Express Group stands tall among the country's media houses. The Express Group of publications has stood for excellence in journalism for over 80 years. The Express Group publications include The Indian Express, The Financial Express, Loksatta, Lokprabha, Screen and Jansatta.

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Organised twice a year for the last eight years by the Indian Express Group, the Express Technology Sabha, since its inception as India's premier eGovernance Forum, has been setting new benchmarks in eGovernance seminars through leadership dialogues, exciting case studies and best practices, peer-to-peer networking opportunities, and technology showcases. The Sabha aims to gather key practitioners of ICT within the government to hold deliberations on ideas that can lead to the development of a more transparent and efficient governance mechanism.

The Express Technology Sabha has consolidated its position as a niche forum for senior government IT leaders and their peers to exchange ideas, assimilate concepts and share knowledge on varied technology issues that are significant and unique to the community. The three-day residential conference explores new trends and innovations that are transforming strategic priorities and enabling superior eGovernance programmes that add value to citizens.

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The goal of the magazine is to bring to its primary readers—the CIOs/CTOs and senior IT decision makers and implementers across various industries and government departments—the most comprehensive, topical, incisive and unbiased coverage through a carefully chosen mix of news, views, analysis and in-depth feature articles.

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Established in 1990, the Business Publications Division (BPD) of the group manages B2B publications like Express Computer, Express Pharma, Express Healthcare, Express TravelWorld, Food and Hospitality World and events across varied sectors, including Information Technology.

About Express Technology Sabha

Organised twice a year, for the last eight years, by the Indian Express Group, the Express Technology Sabha, since its inception as India's premier eGovernance Forum, has been setting new benchmarks in eGovernance seminars through leadership dialogues, exciting case studies & best practices, peer-to-peer networking opportunities and technology showcases. The Sabha aims to gather key practitioners of ICT within the government to hold deliberations on ideas that can lead to development of more transparent and efficient governance mechanism.

Express Technology Sabha has consolidated its position as a niche forum for senior government IT leaders and their peers to exchange ideas, assimilate concepts and share knowledge on varied technology issues that are significant and unique to the community. The 3-day residential conference explores new trends and innovations that are transforming strategic priorities and enabling superior e-Governance programmes that add value to the citizens.

About Express Computer

Express Computer is one of India's most respected IT media brands and has been in publication for 24 years. The magazine covers enterprise technology in all its flavours, including processors, storage, networking, wireless, business applications, cloud computing, analytics, green initiatives and anything that can help companies make the most of their ICT investments. The magazine is also on the forefront of reporting on eGovernance in India.

The goal of the magazine is to bring to its primary readers—the CIOs/CTOs and senior IT decision makers and implementers across various industries & government departments—the most comprehensive, topical, incisive and unbiased coverage through a carefully chosen mix of news, views, analysis and in-depth feature articles.

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