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From Vision to Implementation: Evaluating India's Smart Cities Mission and Citizen Perspectives in the State of Maharashtra

Dr. Sachin Bhandarkar[1], Dr. Vaishnavi Bagul[2]

[1]Assistant Professor, Department of Commerce, Vivekanand Education Society's College of Arts, Science and Commerce (Autonomous), Chembur, Mumbai, Maharashtra, India.
[2]Assistant Professor, Department of Financial Markets, Vivekanand Education Society's College of Arts, Science and Commerce (Autonomous), Chembur, Mumbai, Maharashtra, India.

ABSTRACT

The Smart Cities Mission, launched by the Government of India in 2015, represents a transformative shift towards sustainable and technologically integrated urban development. By promoting citizen-centric planning, digital infrastructure, and efficient service delivery, the mission aims to develop 100 inclusive and resilient urban centers across the country. Core of this vision is the emphasize on resource efficiency, waste minimization, and sustainable urban ecosystems through reuse, recycling, and regeneration.

This study critically examines the implementation of the Smart Cities Mission in the state of Maharashtra, focusing on Six major cities. These cities serve as case studies to evaluate the scope and impact of smart initiatives, including smart mobility, digital governance, waste-to-energy projects, and water reuse systems. Special attention is given to how strategies are embedded within these urban projects, such as decentralized waste management, smart metering, and promotion of green infrastructure.

Furthermore, the study also covers a primary field survey across the six selected cities in Maharashtra, capturing citizen perceptions, stakeholder engagement, and on-ground awareness of smart city initiatives. The survey results reveal a growing public recognition of smart services but also highlight gaps in accessibility, implementation, and sustainable behaviour among urban populations.

Overall, this study underscores the need for inclusive planning, and adaptive governance to ensure the long-term success and scalability of the Smart Cities Mission in India.

Keywords: Smart Cities Mission, Sustainable Urban Development, Citizen-Centric Governance

INTRODUCTION

The urbanisation is an integral part of modern economic growth, and a phenomenon experienced by almost all the countries around the world. The urbanisation is an effect of natural growth of population and migration from rural to urban areas. People migrate for higher and better education, finding better employment opportunities, improved standard of living and many more reasons. However, such rapid shift puts a lot of pressure on the infrastructure in urban areas if not planned effectively by the local governments. As a result, the issues like traffic congestion and accidents, air and environment degradation due to higher amount of pollutants, overcrowding, higher illness spreading, crime and security concerns arise in those areas. A solution to such issues is the development of smart cities.

A smart city is an intelligent city that integrates digital technologies into its networks, services and infrastructure making it more efficient and livable for the benefit of its residents and businesses. It is a city where there exists, smart urban transportation networks, upgraded water supply and waste disposal facilities, efficient lighting at public places. more interactive and responsive city administration and safer public spaces. Information and Communication Technologies (ICTs) are used to improve quality of life, efficiency and competitiveness, while ensuring that it meets the needs of present and future generations. A smart city has widespread home connectivity, Wi-Fi in public areas, intelligent infrastructure, smart electricity meters, open data, and e-government. In short, Smart Cities require a holistic approach focusing all three pillars of a Smart City namely Infrastructure, Operations and People. For India, to make major strides and establish itself as a thought leader in the global economy, smart cities are essential.

Definition of Smart City

A Smart City is a well-defined geographical area where the cooperation between ICTs, logistics, energy production and so on are able to provide benefits for the citizens such as well-being, inclusion, environmental quality and intelligent development, among others. (Sánchez-Corcuera, et al., 2019) (Jawaid & Khan, 2015) (Albino, Berardi, & Dangelico, 2015)

Dimensions of a Smart City

A smart city is expected to cover Six dimensions:

1. Smart Economy – Innovation, entrepreneurship, productivity, flexibility of labour market, competitiveness
2. Smart Mobility – Local accessibility, availability of ICT infrastructure, sustainable, innovative and safe transport systems
3. Smart Environment – Sustainable resources management, controlled pollution, environmental protection initiatives
4. Smart People – Level of education, creativity, flexibility, open mindedness, participation in public life
5. Smart Living - Quality of life, cultural facilities, health conditions, individual safety, housing quality, education facilities, tourist attractivity
6. Smart Governance – Empowerment, participation in decision making, public and social services, transparent governance (Singh & Sharma, 2016)

LITERATURE REVIEW

1. *Smart cities survey: Technologies, application domains and challenges for the cities of the future,* Ruben Sa´nchez-Corcuera, Adria´n Nun˜ez-Marcos, Jesus Sesma-Solance, Aritz Bilbao-Jayo, Rube´n Mulero, Unai Zulaika, Gorka Azkune and Aitor Almeida in their research paper have reviewed various definitions of Smart Cities, and also the technologies and methodologies. They have also taken into account applications where these technologies and methodologies are applied. They have even discussed about the future opportunities for Smart Cities and the issues that may come up in implementation.
2. *GIS Steering Smart Future for Smart Indian Cities* by Anuj Tiwari & Dr. Kamal Jain (2014): This paper discusses about the smart city projects in India with focus on LAVASA: Smart Hill City and Gujarat International Finance Tec-City (GIFT).

3. Research paper on *The Smart City Cornerstone: Urban Efficiency* by Charbel Aoun shows a five stages approach for changing over our urban centers into more efficient and sustainable places to live. The steps include Setting the vision, bringing in the technology, working on the integration, adding innovation and driving collaboration
4. *Smart City and the Applications* by Kehua Su, Jie Li, Hongbo Fu. This paper majorly concentrates on the recent research on concept of smart city. The relationships between the smart city and digital city are also explained in this paper. The paper also elaborates the various application systems for a smart city that are construction of a wireless city, construction of smart home, construction of smart transportation, smart public service and construction of social management, construction of smart urban management, construction of smart medical treatment, and construction of green city.
5. (Anand, Sreevatsan, & Taraporevala, 2018) in their policy brief report on *An overview of the smart cities mission in India* summarise the entire Smart Cities Mission launched by Government of India. It covers the areas like types of projects proposed under the mission, the sources funding for the projects, the form of governance that will be promoted through the mission and also type of citizen participation. They have also pointed out the the challenges like lack of transparency in project-level financial data, uneven participation by citizens, risk of increasing inequality and governance issues.
6. (Rana, et al., 2018) in their research article *Barriers to the Development of Smart Cities in Indian Context* have identified the key barriers of smart cities, prioritised them and have also recognised the most important barrier category. Findings of the study reveal that Governance is the most significant category of barriers followed by Economic, Technology, Social, Environmental, Legal and Ethical.

OBJECTIVES OF THE STUDY

- To understand the concept and characteristics of Smart Cities
- To study the provisions of Smart Cities Mission initiated by Government of India
- To evaluate the effectiveness of Smart Cities Mission in the state of Maharashtra
- To assess citizen awareness, participation, and perception regarding smart city initiatives.

RESEARCH DESIGN AND METHODOLOGY

The research methodology for this research paper is exploratory and has been conducted based on Primary and Secondary sources of data.

PRIMARY DATA COLLECTION

The researchers have collected Primary data through a structured questionnaire. The target respondents were people residing in cities of Maharashtra where the Smart Cities Mission is implemented. Data has been collected from total 205 respondents. Convenience sampling method has been used for collection of data.

SMART CITIES MISSION IN INDIA

The Prime Minister of India, Shri Narendra Modi announced the Smart Cities Mission on June 25, 2015. By offering effective services, strong infrastructure, and a sustainable environment, the mission aims to improve the standard of living in 100 carefully chosen cities. By concentrating on the social, economic, institutional, and physical pillars of urban development, the mission tries to develop sustainability, inclusivity, and economic growth. In order to develop dynamic urban areas that adapt to the requirements of their population and serve as replicable models for other cities, the mission is to address the different needs of its residents, ranging from housing and transportation to education, healthcare, and recreation. (Kumar, Goel, & Mallick, 2018)

Approach of the Mission

There are two main methods used to carry out the Smart City Mission.

1. As part of the Smart Cities Mission, 100 cities have been selected as a specific region for focused interventions, and these cities are being developed utilizing the region-Based Development (ABD) approach.
2. Each city has implemented technology-driven solutions known as Pan-City Projects. Developing a Special Purpose Vehicle (SPV) structure for program implementation, encouraging multiple funding sources for projects, encouraging competitive federalism, and involving citizens are further important aspects of the mission. (Chatterjee, Kumar, & Gupta, 2018)

Progress of the Mission till August 2024

- More than 8,000 multi-sectoral projects are being developed by these 100 cities, amounting to approximately ₹1.6 lakh crore. More than 90% of the total projects (7,244 projects amounting to ₹1,45,312 crore) undertaken under the Smart Cities Mission have been completed.
- 75% of projects have been completed in 75 smart cities. Across the 100 cities, 17 cities have completed 100% of their projects under the mission. This is followed by 34 cities with more than 90% of projects completed and another twenty-four 24 cities with more than 75% of projects completed.
- On the financial front, the total outlay of Central assistance for the Smart Cities Mission was ₹48,000 crore. The Central Government has already released ₹46,787 crore to 100 Smart Cities under the SCM, of which over 90% has been utilised.
- Public Safety and Security: Over 83,000 CCTV surveillance cameras have been installed in 100 Smart Cities, assisting in crime monitoring. Additionally, 1,884 emergency call boxes, 3,000 public address systems, and traffic enforcement systems for red light violations and automatic number plate recognition have been installed, enhancing public safety.
- Water Supply: More than 9,900 kilometers of the water supply system are being monitored through Supervisory Control and Data Acquisition (SCADA), reducing non-revenue water and leakages.
- Solid Waste Management: Over 50 cities are managing solid waste with increased technology use, improving route management, efficiency of collection, and daily management. Around 4,400 vehicles have been RFID-enabled for Automatic Vehicle Location (AVL) to digitize and improve solid waste management efficiency.
- Streetlights: More than 52 lakh solar/LED streetlights have been installed, and over 86,000 kilometers of underground electricity cabling have been constructed.
- Mobility: Over 4,700 kilometers of smart roads have been constructed or improved, and 580 kilometers of cycle tracks have been developed.
- Affordable Housing and Shelter: 49,300 dwelling units have been constructed, along with 1,562 rooms in community housing projects such as Rain Basera, hostels (noneducational), and night shelters under the Mission.
- Vibrant Public Spaces: Over 1,300 parks, green spaces, and lakefront/riverfront paths have been developed or are under development.

- Education: 7,654 smart classrooms and 40 digital libraries have been developed.
- Health: 172 e-health centers and clinics (without dedicated beds) have been developed, and 155 health ATMs also have been installed.
- Economic Hubs: 21 incubation centers/skill development centers have been developed, and over 56 market redevelopment projects have been completed.
- PPP: More than 50 cities have successfully developed or are developing 199 projects through Public-Private Partnerships (PPP) worth ₹9,200 crore.
- Only 10% of the remaining projects are at the implementation stage. Some of these projects have been delayed due to legal issues, delays in obtaining clearances from different departments, land acquisition challenges, construction in hilly areas, and challenges in vendor and resource availability in small and medium cities. Following multiple requests from State governments and Members of Parliament, the mission period has been extended to 31st March 2025 to complete the ongoing projects. (Deepti & Alizadeh, 2020) (Gupta & Hall, 2017)

Figure 1: **Progress of Smart Cities Mission**

Source: Government of India, Press Information Bureau portal

Key Challenges/Barriers of Smart Cities Mission in India

Smart Cities Mission is an excellent and ambitious mission. However, there are some operational challenges in the effective implementation of the same.

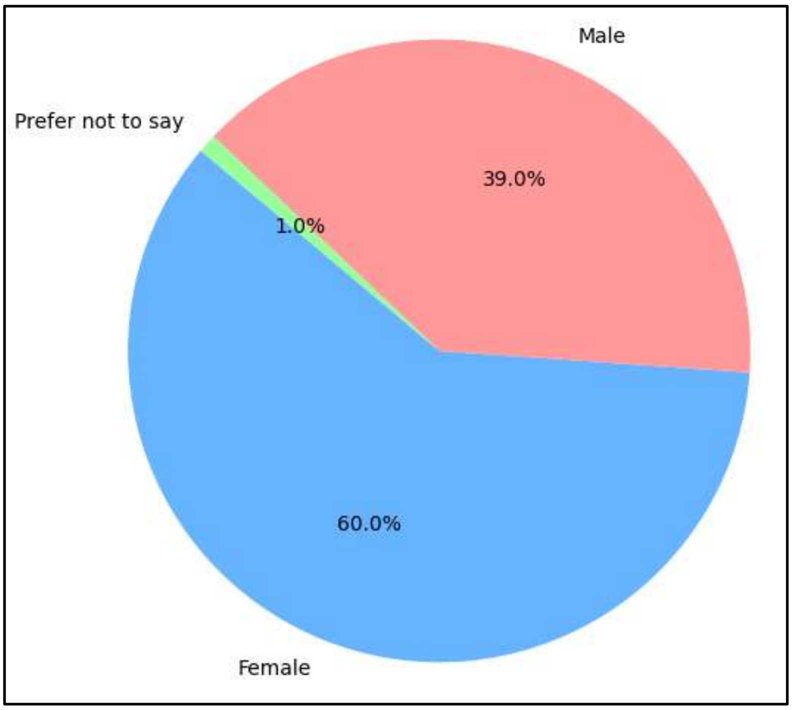
1. **Upgrading Existing Infrastructure:** Transforming existing established urban systems into "smart" frameworks is a complicated matter. It requires identifying critical weaknesses such as gaps in water supply and sanitation and integrating traditionally isolated systems to improve citywide efficiency.
2. **Financing the Mission:** The High-Power Expert Committee (HPEC) estimated an investment of ₹7 lakh crore for 100 cities i.e. about ₹35,000 crore annually. Since most funding must come through private investments or public-private partnerships (PPPs), securing consistent financial backing remains a major hurdle.
3. **Multi-level Governance and Coordination:** Effective implementation demands strong coordination among central, state, and local governments. Horizontal and vertical integration across departments and agencies is essential to ensure efficient service delivery, financing, and sharing of best practices. The effective coordination between all these authorities is a tough task.
4. **Timely Regulatory Clearances:** Bureaucratic delays and corruption often hamper the progress of any project. To accelerate project completion, approvals should be processed online within defined time

limits. A dedicated regulatory body for utilities is also needed to ensure fair competition and balanced tariff setting.

5. **Absence of Comprehensive City Plans:** Many Indian cities lack master plans or city development plans, essential blueprints that guide sustainable growth and service improvements under the Smart City framework.
6. **Technical Limitations of Urban Local Bodies (ULBs):** ULBs often face a shortage of skilled personnel and technical expertise. Limited recruitment and uncompetitive pay scales affect their ability to attract and retain qualified professionals needed for project execution and maintenance.
7. **Need for Capacity Building:** Developing expertise across 100 cities is a major challenge. Many initiatives face delays due to inadequate manpower and institutional capacity. Only about 5% of central funds are earmarked for training, research, and knowledge sharing which are insufficient for long-term skill development.
8. **Governance deficits:** Municipal institutions suffer from corruption, poor monitoring, weak decentralization, and underutilized resources.
9. **Inequality in smart city focus:** The Mission emphasizes selective area development, potentially widening urban disparities.
10. **Institutional limitations:** New agencies like SPVs bypass traditional municipalities, risking coordination failures. (Aijaz, 2016) (Pathak, Bandyopadhyay, & Dentinho, 2020) (Jabbar & Aluvalu, 2017)

DATA ANALYSIS AND INTERPRETATIONS

1. **Demographic Distribution of Data**
   (a) Gender

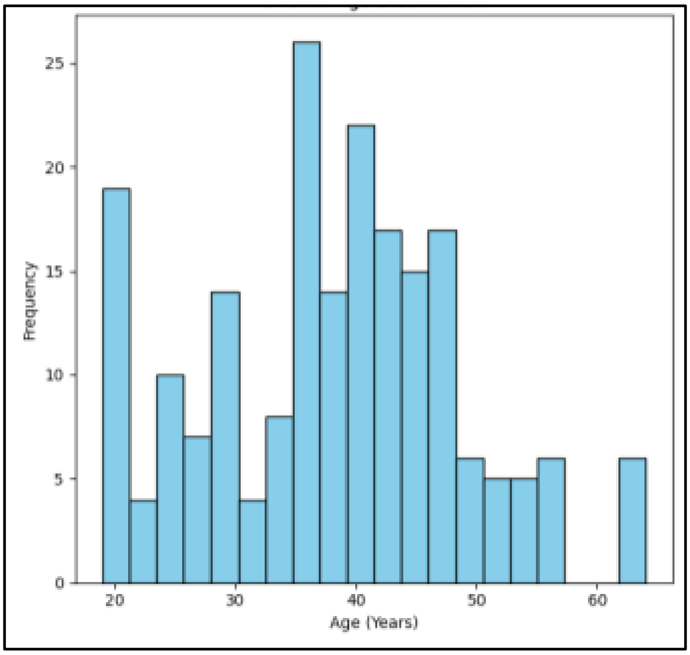


Source: Primary Data

Interpretation:

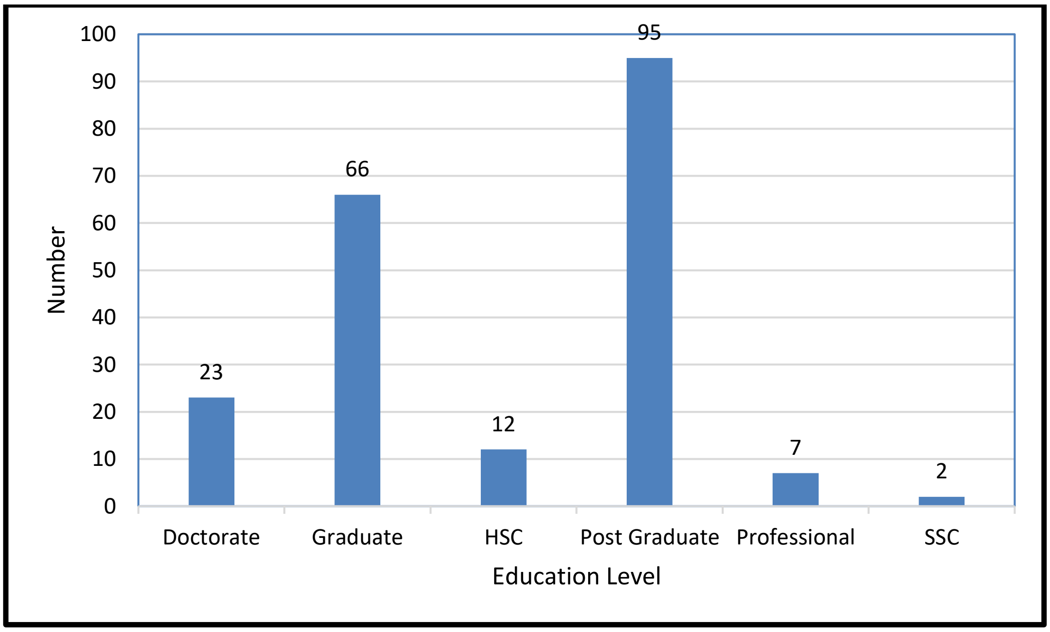
a. Primary data has been collected from total 205 respondents out of which 123 are females and 80 are males. A small number, 2 respondents, preferred not to disclose their gender.
b. This indicates 60% are female respondents.

(b) Age Distribution



Interpretation:
Maximum respondents are in the age group of 20 to 50 years.
Source: Primary Data

(c) Education Level by location

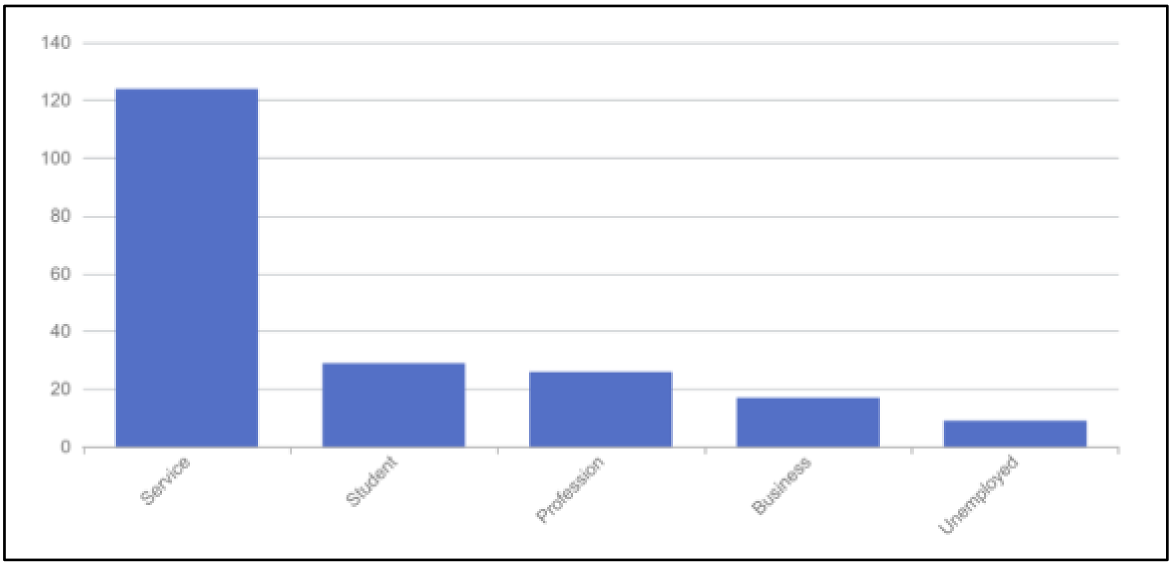


Source: Primary Data

Interpretation:

1. Out of the total 205 respondents maximum number i.e. 95 are post graduates followed 66 graduate respondents.
2. Good number of doctorates and professionals are also included in the survey to have rational responses about the smart cities mission.

(d) Occupation

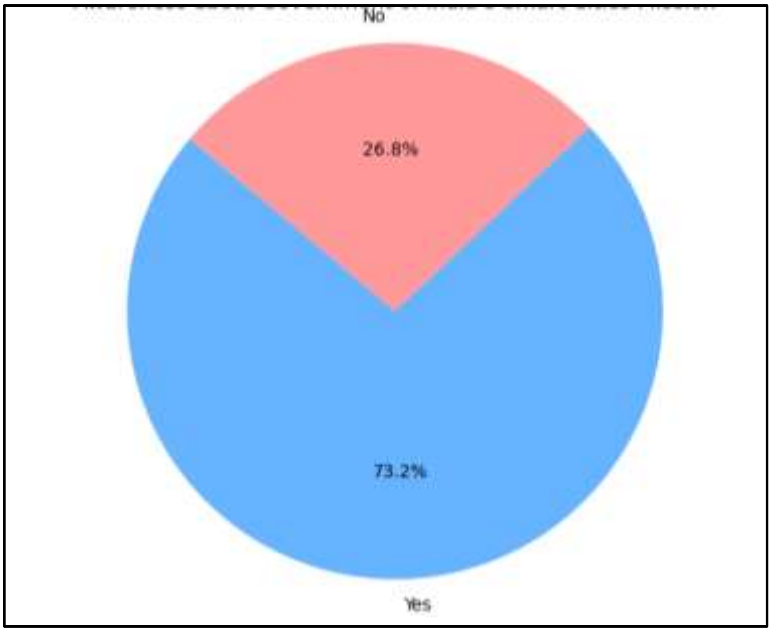


Source: Primary Data

Interpretation:

1. The majority of respondents are in the Service sector.
2. Students form the second largest group.
3. Professionals and Business respondents follow.

2. Awareness about Smart Cities Mission



Source: Primary Data

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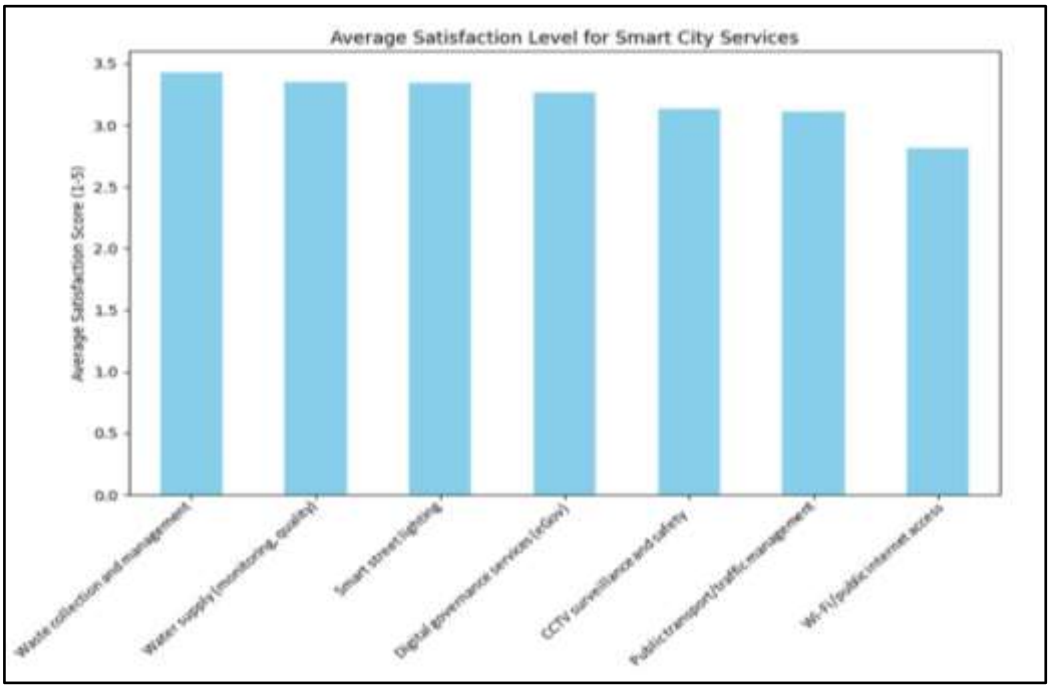
Interpretation:

1. The pie chart shows that 150 respondents (about 73%) are aware of the Smart Cities Mission, while 55 respondents (27%) are not aware.
2. This indicates a good level of awareness among the surveyed population.

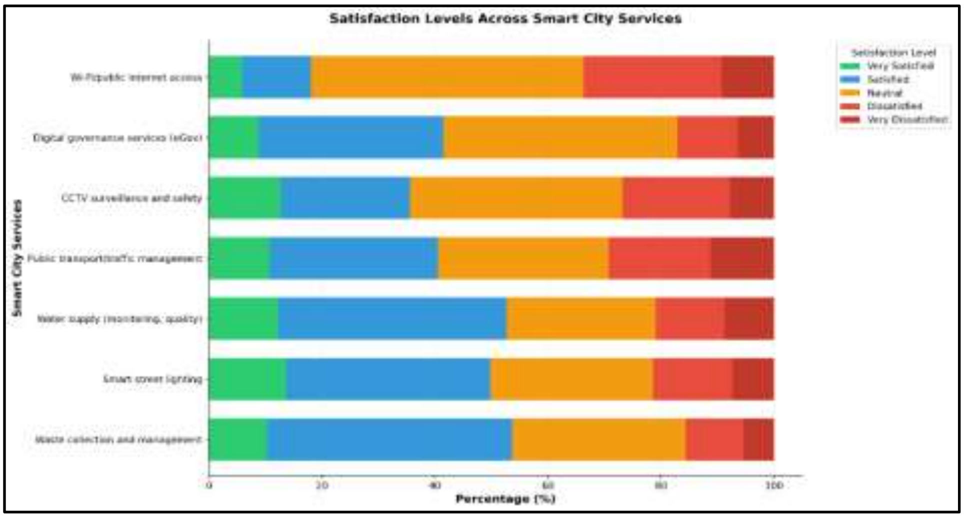
3. Satisfaction Level for Different Smart City Services:



Source: Primary Data

Interpretation:

1. The bar chart shows average satisfaction scores (on a scale of 1 to 5) for various smart city services.
2. Waste collection and management has the highest satisfaction (around 3.43).
3. Water supply monitoring and smart street lighting follow closely.
4. Wi-Fi/public internet access has the lowest satisfaction score (around 2.81).
5. Overall, satisfaction levels are moderate, with room for improvement especially in internet access services.



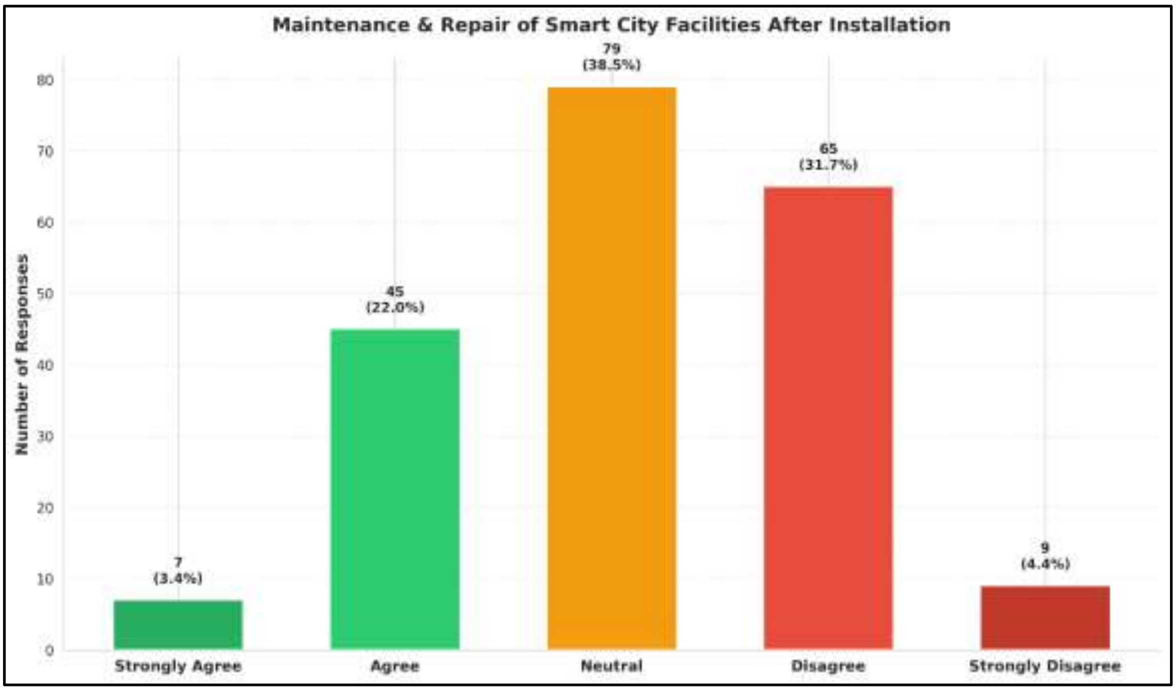
Source: Primary Data

Interpretation:

The satisfaction levels are also interpreted with percentages.

- **Best Performing Services:** Waste collection and management leads with 53.6% satisfaction (very satisfied + satisfied), followed by Water supply monitoring (52.7%) and Smart street lighting (49.8%).
- **Areas of Improvement:** Wi-Fi/public internet access has the lowest satisfaction at only 18.1%, with 48.3% neutral and 33.7% dissatisfied/very dissatisfied responses. Public transport/traffic management also shows moderate performance with 40.5% satisfaction.
- **Mixed Responses:** Digital governance services (eGov) and CCTV surveillance show higher neutrality (41.5% and 37.6% respectively), suggesting inadequate awareness or accessibility.
- **Overall Insight:** Basic infrastructure services (waste, water, lighting) perform better than digital/connectivity services, indicating a gap in technology implementation and public awareness.

4. **Maintenance & Repair of Smart City Facilities:**



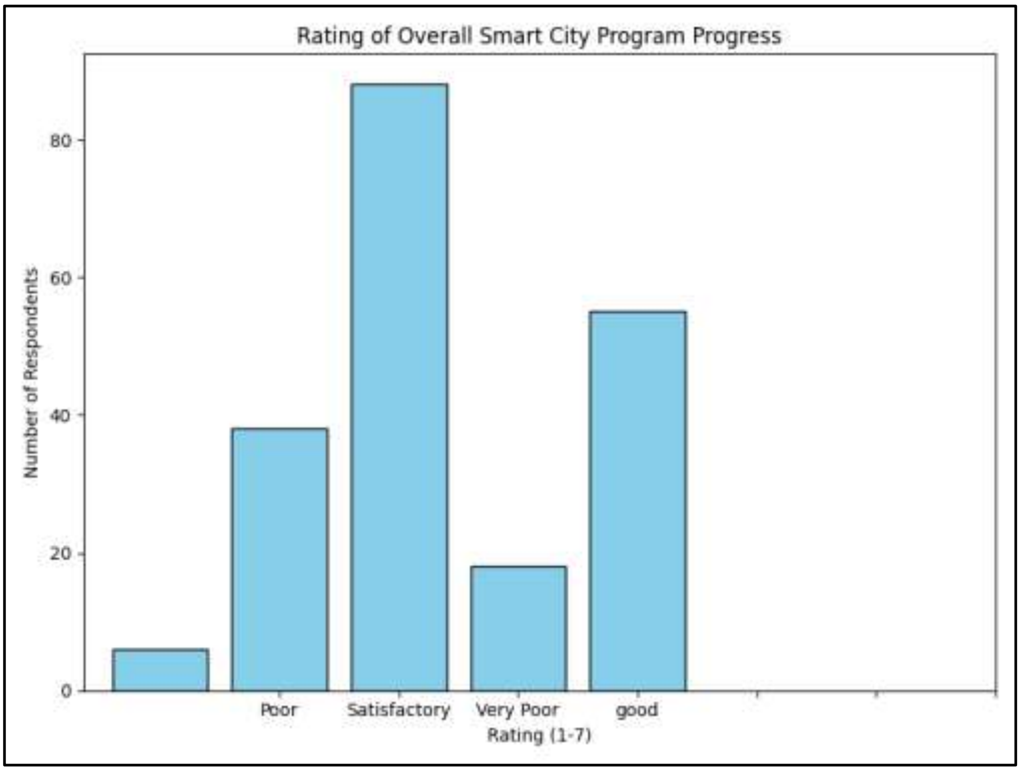
Source: Primary Data

Interpretation:

There are concerns that once some facilities are installed, they may not be regularly maintained or updated. Some of observations in this regard are:

- **Maintenance Crisis:** Only 25.4% (strongly agree + agree) believe facilities are regularly maintained, while 36.1% (disagree + strongly disagree) actively dispute this claim.
- **High Uncertainty:** 38.5% chose neutral, reflecting either lack of awareness about maintenance practices or insufficient visibility of maintenance activities.
- **Critical Issue:** This data aligns with the lower satisfaction ratings, as poor maintenance directly impacts the effectiveness and longevity of smart city infrastructure. This is a major operational bottleneck.
- **Communication Gap:** The high neutrality suggests residents may not be informed about maintenance schedules or initiatives, creating perception problems even if maintenance is occurring.

5. Overall Program Rating:



Source: Primary Data

Interpretation:

- **Average performance:** 43% rated the overall smart city progress as "Satisfactory," indicating average performance of the mission. When combined with "Poor" (18.5%) and "Very Poor" (8.8%), over 70% of respondents have neutral to negative perceptions.
- **Limited Enthusiasm:** Only 3% rated it as "Excellent" and 26.8% as "good," suggesting significant room for improvement in program execution and public perception.
- **Critical Gap:** The dominance of "Satisfactory" ratings rather than "good" or "Excellent" indicates that while basic expectations may be met, the program is failing to create strong positive impact or satisfaction among residents.

DISCONTINUATION OF SMART CITIES MISSION

The SMART Cities Mission has made considerable progress with 93% projects completed and major funds disbursed. Despite this the Smart Cities Initiative has been discontinued from 31st March, 2025. The prominent reasons for such a step are delays from bureaucratic bottlenecks, land acquisition issues, coordination challenges across agencies, and incomplete clearances. Another key factor for the failure is that almost half of the 100 selected cities haven't deployed any Public-Private Partnership (PPP) projects, even though PPPs were meant to play a major part. Though nearly all central assistance has been released, states and cities still could not match funds and expedite project execution. Many citizens and civic observers argue that visible impact, maintenance, and citizen engagement remain uneven across cities. Many cities struggled to maintain high-tech installations, leading to breakdowns, abandoned infrastructure, and rising costs for repair. Technological innovations adopted without proper local capacity became unsustainable, and over time the political value of "smart city" branding weakened. Ultimately, lack of coordination, financial sustainability, and genuine citizen involvement undermined much of the original vision, leaving behind infrastructure shells rather than living, adaptive urban ecosystems.

CONCLUSION

The Smart Cities Mission has been a landmark initiative in India's pursuit of sustainable and technology-driven urban transformation. There were 100 cities across India out of which 10 were from Maharashtra. In Maharashtra, as across India, the mission has delivered significant improvements in physical infrastructure such as better waste management, water monitoring, street lighting, and safety systems. However, the study of secondary and primary data carried on this research paper reveals that citizen satisfaction remains moderate, with persistent concerns about maintenance, digital connectivity, and governance transparency. The program's overemphasis on physical infrastructure over citizen-centric and digital inclusivity aspects limited its long-term impact. Furthermore, there are issues like inter-government coordination gaps, insufficient local capacity, and delays in project implementation which have reduced overall effectiveness of the mission. While over 90% of projects have been completed, their sustainability and integration into everyday urban life remain uncertain. The discontinuation of the mission in 2025 shows the need for a more adaptive, participatory, and financially sustainable urban development approach. Future urban initiatives must focus not only on technological advancement but also on empowering local governance, fostering community engagement, and ensuring long-term maintenance and inclusivity. The Smart Cities Mission has provided valuable lessons that should guide India's next generation of urban policies toward creating truly resilient, citizen-oriented, and sustainable cities.

BIBLIOGRAPHY

10. Aijaz, R. (2016). Challenges of Making Smart Cities in India. Asie Visions.
11. Albino, Berardi, & Dangelico. (2015). Smart Cities: Definitions, Dimensions, Performance, and Initiatives. Journal of Urban Technology, 22(1), 3–21.
12. Anand, Sreevatsan, & Taraporevala. (2018). An overview of the smart cities mission in India. New Delhi: Centre for Policy Research.
13. Aoun. (2013). The smart city cornerstone: Urban efficiency. Schneider Electric White Paper, 1-13.
14. Chatterjee, Kumar, A., & Gupta. (2018). Success of IoT in Smart Cities of India: An empirical analysis. Government Information Quarterly, 35(3), 349-361.
15. Deepti, & Alizadeh. (2020). What Makes Indian Cities Smart? A Policy Analysis of Smart Cities Mission. Telematics and Informatics, 55.
16. Gupta, & Hall. (2017). The Indian perspective of smart cities. Smart City Symposium Prague (SCSP), (pp. 1-6). Prague, Czech Republic.
17. https://businessindia.co/monumental-failure. (2025).
18. https://indianexpress.com/. (2025).
19. https://marksmendaily.com/. (2025).
20. https://www.hindustantimes.com/. (2025).
21. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2030491. (2025). Retrieved from https://www.pib.gov.in.
22. https://www.thehindu.com. (2025).
23. https://www.pib.gov.in/PressNoteDetails.aspx?NoteId=151908&ModuleId=3. Retrieved from https://www.pib.gov.in.

24. Jabbar, & Aluvalu. (2017). Smart cities in India: Are we smart enough? International Conference On Smart Technologies For Smart Nation (SmartTechCon), (pp. 1023-1026). Bengaluru.
25. Jawaid, & Khan. (2015). Evaluating the need for smart cities in India. International Journal of Advance Research In Science And Engineering IJARSE, 4(01), 991-996.
26. Kumar, Goel, & Mallick. (2018). Smart cities in India: Features, policies, current status, and challenges. Technologies for Smart-City Energy Security and Power , 1-4.
27. Pathak, Bandyopadhyay, & Dentinho. (2020). Challenges of Smart Cities in India. Urbanization and Regional Sustainability in South Asia. Contemporary South Asian Studies.
28. Rana, Luthra, Mangla, Islam, Roderick, & Dwivedi. (2018). Barriers to the development of smart cities in Indian context. Information Systems Frontiers, 21(3), 503-525.
29. Sánchez-Corcuera, Nuñez-Marcos, Sesma-Solance, Bilbao-Jayo, Mulero, Zulaika, & Almeida. (2019). Smart cities survey: Technologies, application domains and challenges for the cities of the future. International Journal of Distributed Sensor Networks, 15(6).
30. Singh, & Sharma. (2016). Smart cities in India: Key areas and challenges-case study of Chandigarh City. International Journal in Management & Social Science, 4(1), 386-396.
31. Tiwari, & Jain. (2014). GIS Steering smart future for smart Indian cities. International Journal of Scientific and Research Publications, 4(8), 442-446.