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The Impact of Smart City Technologies on urban living in Siliguri

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Abstract

Rapid urbanization in India has increased pressure on city infrastructure, governance, and environmental conditions, especially in growing cities. Siliguri, an important commercial and transport hub in North Bengal, has experienced fast population growth, expanding business activities, and rising demand for public services. To deal with these challenges, smart city technologies have been introduced under the Government of India's Smart Cities Mission to improve urban management and the quality of life of citizens. This study examines the impact of smart city technologies on urban living in Siliguri using secondary data collected from government reports, municipal records, policy documents, and academic sources. The study focuses on key initiatives such as intelligent traffic management systems, digital governance platforms, CCTV surveillance, LED street lighting, improved waste management, and monitored water supply systems. The findings show that digital governance has made administrative services faster, more transparent, and easier for citizens to access. Smart traffic systems have helped in better traffic monitoring and control on major roads like Hill Cart Road and Sevoke Road. Public safety has improved due to CCTV surveillance in commercial areas and transport hubs. Energy-efficient systems such as LED street lights have also reduced electricity costs and supported environmental sustainability. However, some challenges still exist, including traffic congestion in central areas, seasonal waterlogging, unequal distribution of smart facilities between developed and peripheral areas, lack of digital literacy among some citizens, and financial sustainability issues. The study concludes that while smart technologies have improved urban management in Siliguri, inclusive planning, infrastructure development, public participation, and proper maintenance are essential for long-term sustainable urban growth.

Keywords: Smart City Technologies, Urban Living, Siliguri, Smart Cities Mission, Digital Governance, Intelligent Traffic Management, CCTV Surveillance, LED Street Lighting, Waste Management, Water Supply Monitoring, Urban Infrastructure, Public Services, Environmental Sustainability, Traffic Congestion, Urban Development.

Introduction

Urbanization has become one of the most important changes shaping the 21st century. In developing countries like India, cities play a major role in economic growth, innovation, and social interaction. Today, urban areas contribute more than half of India's Gross Domestic Product (GDP) and continue to attract people because of better job opportunities, education, healthcare, and business facilities. However, fast urban growth has also created many problems. Cities are facing heavy pressure on infrastructure and governance systems. Issues like traffic congestion, pollution, poor waste management, water shortage, housing problems, and administrative delays are common in many Indian cities. These challenges show the need for new, innovative, and sustainable approaches to urban development.

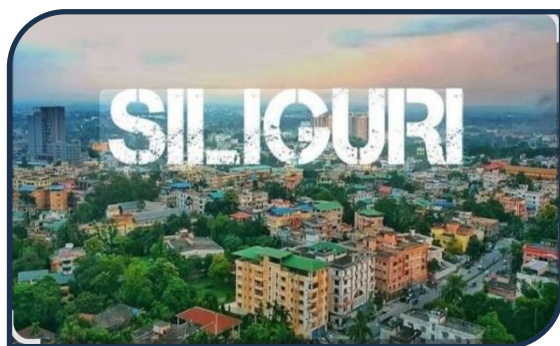
To address these problems, the Government of India launched the Smart Cities Mission in 2015. The aim of this mission is to promote inclusive, sustainable, and citizen-friendly urban development. It focuses on using digital technology, data-based decision-making, energy-efficient infrastructure, intelligent transport systems, and better governance platforms to improve public services and quality of life. A smart city is not just about advanced technology; it is also about transparency, accountability, public participation, and long-term environmental sustainability. Siliguri, located in the Darjeeling district of West Bengal, is an important example for studying smart city development. Popularly known as the "Gateway of Northeast India," Siliguri has a strategic geographical position. It connects Nepal, Bhutan, Bangladesh, and the northeastern states of India through the narrow Siliguri Corridor, also called the "Chicken's Neck." Because of this location, the city has developed into a major commercial, transport, and logistics hub.

In the last two decades, Siliguri has seen rapid population growth, expansion in trade and tourism, and fast real-estate development. Residential areas like Uttorayon and high-rise buildings such as Skydale reflect planned urban growth. Commercial complexes like City Centre represent modernization in retail and public spaces. Despite its growth, Siliguri faces several urban challenges.

Major roads like Hill Cart Road and Sevoke Road often experience heavy traffic congestion due to increased vehicles and interstate movement. Many areas such as Pradhan Nagar and Hakim Para face waterlogging during the rainy season, showing problems in drainage and urban planning. The Mahananda River is also affected by waste disposal and unplanned urban expansion. Rising population has increased pressure on sanitation, housing, water supply, and energy use.

In this situation, smart city technologies have been introduced in Siliguri to improve governance and infrastructure. Online platforms for property tax payment, trade licenses, and grievance redressal have made municipal services more transparent and efficient. Intelligent traffic systems and CCTV surveillance have been installed at major junctions to manage traffic and improve safety. Energy-efficient LED street lights have reduced electricity consumption and costs. Improved waste collection and monitoring systems are helping sanitation management.

This seminar aims to critically study the impact of smart city technologies on urban life in Siliguri by examining both achievements and limitations. It will analyse digital governance, smart mobility, surveillance systems, energy efficiency, and environmental management and their effects on quality of life, safety, and economic activity. At the same time, it will also study issues like spatial inequality, infrastructure gaps, financial challenges, and citizen awareness.



Source: en.wikipedia.org



Source: en.wikipedia.org

Objectives

1. To study the role of smart city technologies in solving urban problems in Siliguri.
2. To analyse the impact of digital governance and infrastructure on quality of life.
3. To evaluate improvements in transportation, safety, waste management, and public services.
4. To assess socio-economic and environmental effects of smart initiatives.
5. To identify challenges and future prospects for sustainable smart development in Siliguri.

Research Methodology

This study is based on secondary data analysis. The data has been collected from different government reports under the Smart Cities Mission, publications of Siliguri Municipal Corporation, documents of the Ministry of Housing and Urban Affairs, research journals, academic articles, policy papers, and urban development reports. The methodology mainly uses qualitative analysis. It includes studying different policy initiatives, comparing urban development indicators, and reviewing the results of project implementation. The interpretation of data focuses on areas such as infrastructure development, digital transformation, environmental management, and citizen welfare. However, there are some limitations in this methodology. The study depends mostly on already published data. There were no primary surveys or interviews conducted. Also, updated city-level statistics were limited, and smart city projects are still evolving, which may affect the findings.

Result And Discussion

From the study of secondary data, municipal records, government policies, and research articles, it is clear that smart city technologies have brought noticeable improvements in Siliguri. These improvements can be seen in areas like governance, transport management, public safety, and environmental services. However, the impact is also affected by factors such as increasing population, fast urban expansion, and existing urban problems. Siliguri has a municipal population of more than 7 lakh people, and if we include nearby areas like Matigara and Dabgram, the population is around 12 lakhs. The city is growing rapidly because of migration, business opportunities, and its important location in the Siliguri Corridor, also known as the "Chicken's Neck." Due to this population pressure, it becomes challenging to implement smart city projects effectively on a large scale. Technology has definitely improved administrative work and service delivery, but the overall transformation is slow and gradual rather than complete. The following sections discuss the impact on different sectors.

#	Ward	Population
1	Siliguri Ward No - 1	18928
2	Siliguri Ward No - 2	14327
3	Siliguri Ward No - 3	10993
4	Siliguri Ward No - 4	20745
5	Siliguri Ward No - 5	16369
6	Siliguri Ward No - 6	6484
7	Siliguri Ward No - 7	7954
8	Siliguri Ward No - 8	5097
9	Siliguri Ward No - 9	6481
10	Siliguri Ward No - 10	4019
11	Siliguri Ward No - 11	1912
12	Siliguri Ward No - 12	2832
13	Siliguri Ward No - 13	4886
14	Siliguri Ward No - 14	6566
15	Siliguri Ward No - 15	8002

16	Siliguri Ward No - 16	4922
17	Siliguri Ward No - 17	5029
18	Siliguri Ward No - 18	7774
19	Siliguri Ward No - 19	3286
20	Siliguri Ward No - 20	9009
21	Siliguri Ward No - 21	5624
22	Siliguri Ward No - 22	10182
23	Siliguri Ward No - 23	6340
24	Siliguri Ward No - 24	11045
25	Siliguri Ward No - 25	9459
26	Siliguri Ward No - 26	5038
27	Siliguri Ward No - 27	6892
28	Siliguri Ward No - 28	8836
29	Siliguri Ward No - 29	10703
30	Siliguri Ward No - 30	7819
31	Siliguri Ward No - 31	14424
32	Siliguri Ward No - 32	11334

33	Siliguri Ward No - 33	14518
34	Siliguri Ward No - 34	16999
35	Siliguri Ward No - 35	15820
36	Siliguri Ward No - 36	14734
37	Siliguri Ward No - 37	15690
38	Siliguri Ward No - 38	13022
39	Siliguri Ward No - 39	12353
40	Siliguri Ward No - 40	25152
41	Siliguri Ward No - 41	17351
42	Siliguri Ward No - 42	19139
43	Siliguri Ward No - 43	16339
44	Siliguri Ward No - 44	11843
45	Siliguri Ward No - 45	7001
46	Siliguri Ward No - 46	30665
47	Siliguri Ward No - 47	9327

Source: www.census2011.co.in

1. Urban Governance and Digital Transformation

One of the biggest achievements of the smart city mission in Siliguri is the digitalization of municipal governance. Services like online property tax payment, trade license renewal, grievance portals, and digital records have made government work faster and more transparent.

The Siliguri Municipal Corporation (SMC) provides an online grievance portal where residents from areas such as Bidhan Nagar, Hakim Para, Pradhan Nagar, Dabgram, and Gaiktata can submit complaints related to sanitation, water supply, drainage, and street lights. The complaint tracking system increases accountability, and digital records reduce manual errors. Business areas like Bhaktinagar Industrial Area and Matigara Market also benefit from online trade licensing and compliance systems. This reduces paperwork, saves time, and lowers costs for small and medium businesses. Digital systems also help the municipality increase revenue through better tax collection.

However, there are still some challenges. Many elderly people, informal workers, and low-income groups do not have proper digital knowledge or internet access. Because of this, not everyone can benefit equally from digital governance. So, while smart governance is working well at the institutional level, more public awareness and outreach programs are needed for inclusive participation.



2. Urban Mobility and Traffic Management: Hill Cart Road, Sevoke Road, and Transit Hubs

Siliguri is known as the gateway to Northeast India, so there is always heavy vehicle movement through the Chicken's Neck corridor. This route connects Nepal, Bhutan, Bangladesh, and the northeastern states. Because of this strategic location, major roads like Hill Cart Road, Sevoke Road, Jalpaiguri Road, and Burdwan Road regularly face traffic congestion.

To manage this problem, several smart traffic measures have been introduced. These include:

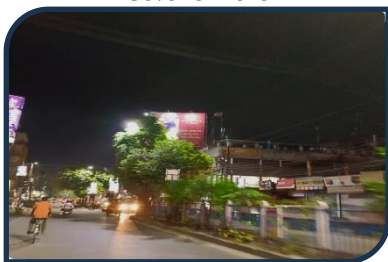
- Adaptive traffic signal systems at important junctions like Sevoke More and Airview More
- CCTV-based traffic monitoring at Hakim Para Crossing
- Surveillance systems near New Jalpaiguri (NJP) Railway Station
- Digital monitoring around Tenzing Norgay Bus Terminus

These smart initiatives have helped in improving traffic discipline and better enforcement of traffic rules. They also reduce response time during emergencies like accidents or road blockages. Busy commercial areas such as City Centre Mall, Hong Kong Market, and Mahananda Market benefit from better traffic control, which improves accessibility for shoppers and business owners.

However, some challenges still exist. The rapid increase in private vehicles, narrow roads, and unplanned land-use patterns reduce the overall effectiveness of smart traffic systems. Parking congestion is another major issue, especially in commercial areas like MG Road and Bidhan Market, where bottlenecks are common.

Therefore, while smart mobility tools have improved traffic management to some extent, long-term solutions require expansion of public transport, promotion of non-motorized transport like cycling and walking, and better urban planning.

Sevoke More



Source: <https://wanderboat.ai>

Air view More



Source: <https://10xmt.com>

NJP Railway



Source: <https://indiarailinfo.com>

3. Public Safety and Urban Surveillance

Smart surveillance infrastructure has played an important role in strengthening public safety in Siliguri. CCTV cameras have been installed in many high-density and sensitive areas of the city. Some major locations include:

- City Centre
- Uttorayan Township
- Skydale Residential Complex
- Matigara Market
- Hong Kong Market
- Kali Mandir area
- NJP Railway Station
- MG Road commercial corridor



These surveillance systems are connected to centralized monitoring centres. This helps authorities track traffic violations, manage crowds, and coordinate emergency responses in real time. According to urban governance studies, smart surveillance not only prevents crime but also improves the efficiency of police investigations.

For example, crowded places like Hong Kong Market and Mahananda Market receive special monitoring during festival seasons to control large gatherings. Tourist areas such as North Bengal Science Centre and ISKCON Temple Road also benefit from improved safety arrangements due to surveillance systems.

However, for long-term sustainability, some concerns need to be addressed, such as:

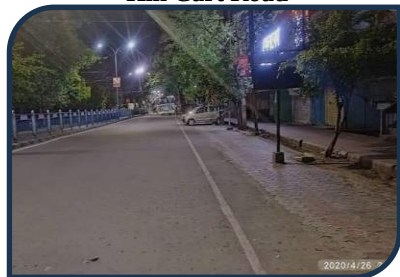
Regular maintenance of CCTV and surveillance equipment

Issues related to data privacy and ethical use of technology

Financial costs involved in system upgrades and expansion

Therefore, even though public safety perception has improved, proper institutional rules and safeguards are necessary to ensure responsible and ethical use of surveillance technology.

Hill Cart Road



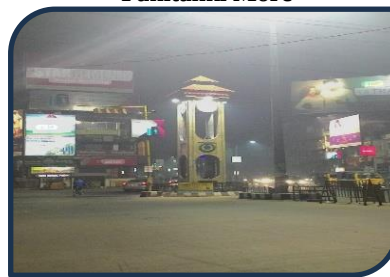
Source: <https://www.facebook.com>

Smart Water Monitoring System



Source: www.csctrucks.com

Panitanki More



Source: Wikipedia

4. Environmental Sustainability and Energy Efficiency

Environmental management is an important goal of the smart city mission. In Siliguri, rapid urban growth and increasing population have put extra pressure on waste management, energy use, and drainage systems.

One major step taken under this initiative is the installation of LED street lights in areas such as VIP Road, Hill Cart Road, Uttarayan Township, and Sevoke Road. These energy-efficient lights have reduced electricity consumption as well as municipal operational costs. They also help in lowering carbon emissions and improving safety during nighttime.

Solid waste management has also improved in the city through several smart measures, such as:

- GPS-enabled waste collection vehicles in areas like Matigara, Dabgram, Hakim Para, and Pradhan Nagar
- Properly structured waste transfer points
- Digital monitoring of sanitation and waste collection schedules

However, waste segregation at the household level is still limited, especially in informal settlements and densely populated areas. Awareness and behavioural change programs have not fully supported these technological improvements.

The municipality has also taken green initiatives. Tree plantation drives have been conducted along Mall Road and near the Coronation Bridge corridor. Rainwater harvesting systems have been introduced in planned townships like Uttarayan to support environmental sustainability.

Despite these efforts, problems like seasonal waterlogging still occur in low-lying areas such as Kali Mandir Road and parts of Dabgram. This shows that drainage infrastructure gaps still exist and cannot be solved by technology alone. Proper urban planning and infrastructure development are also necessary.

5. Area-Based Development: City Centre, Uttarayan, Skydale, and Other Local Hubs

Smart city projects usually follow an area-based development model. This means development work is first focused on selected areas. In Siliguri, organized and high-income zones have received more technological and infrastructural benefits.

City Centre is a good example of planned smart development. It has organized parking facilities, better street lighting, digital surveillance systems, and well-maintained public spaces. These features make the area more convenient and secure for visitors and residents.

Uttorayan Township shows planned residential development. The area has better road connectivity, energy-efficient utilities, and regulated infrastructure facilities. Because of proper planning, residents enjoy improved living conditions.

Similarly, Skydale Complex represents modern vertical urban growth. It provides advanced amenities along with secure surveillance systems, reflecting smart residential infrastructure.

Other developing areas like Bidhan Nagar and regions near NJP (New Jalpaiguri) have also seen infrastructure improvements. However, peripheral areas and informal settlements have received fewer upgrades in comparison.

This uneven distribution creates imbalance in urban development. While central commercial and residential hubs benefit clearly from smart technologies, economically weaker sections may not experience the same advantages. Therefore, inclusive expansion of smart city systems is necessary to avoid widening social and spatial inequalities.

City Centre



Uttorayan



Skydale



Source: <https://www.facebook.com>

6. Water Supply and Urban Resilience: Pradhan Nagar, Hakim Para, and Low-Lying Zones

Smart monitoring systems have improved water supply management in Siliguri. Digital monitoring of water distribution networks helps in detecting leakages and maintaining proper water pressure in areas such as Pradhan Nagar, Hakim Para, Uttorayan, and Bidhan Nagar. Sensor-based technologies allow real-time monitoring, which makes maintenance work faster and more efficient.

However, Siliguri's geographical conditions and heavy monsoon rainfall continue to create drainage-related problems. Many low-lying areas face seasonal flooding and waterlogging during the rainy season.

This shows that smart monitoring alone is not enough. It needs to be combined with large-scale drainage system development and modernization. For better urban resilience, city planning should integrate data-based smart systems with strong physical infrastructure improvements.

7. Socio-Economic Implications

Siliguri's economic development is closely connected with trade, tourism, and transport activities. Smart city infrastructure has helped to increase business confidence in major commercial areas such as City Centre, Matigara Market, Hong Kong Market, and MG Road. Better lighting, improved safety, and proper traffic management have created a more stable and business-friendly environment.

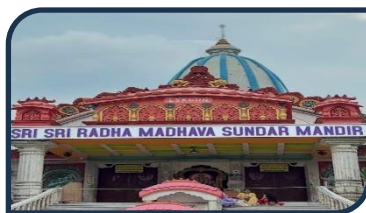
Tourism-related places have also benefited indirectly. Areas around Coronation Bridge routes, ISKCON Temple, and North Bengal Science Centre have seen improvements due to better roads, infrastructure, and surveillance systems.

However, rapid population growth — which has crossed around 12 lakhs in the extended urban region — has increased pressure on housing, basic utilities, and public spaces. If technological development does not keep pace with population growth, the benefits of smart city projects may get reduced or unevenly distributed.

Coronation Bridge



ISKCON Temple



North Bengal Science Centre



Source: Wikipedia

Overall Interpretation

Overall, smart city technologies in Siliguri have improved many urban sectors. These include governance efficiency, traffic management, public safety, energy use, and sanitation services. Real examples such as City Centre, Skydale, Uttorayan, Matigara Market, Bidhan Nagar, Hong Kong Market, NJP Station, Pradhan Nagar, Hakim Para, and the Chicken's Neck corridor clearly show visible development.

However, the transformation is gradual rather than complete. Problems like traffic congestion, unequal area development, digital divide, maintenance issues, and rapid population growth still limit the full impact of smart initiatives.

For long-term and sustainable urban development, smart technologies must be combined with inclusive planning, public participation, infrastructure modernization, and environmental resilience strategies. Only then can Siliguri move from being a partially smart city to a fully sustainable and holistically developed urban system.

FINDINGS

The study of secondary data and local urban conditions shows that smart city initiatives in Siliguri have improved governance efficiency and infrastructure management. However, many structural, social, and environmental challenges still influence the overall effectiveness of these technologies.

1. Uneven Spatial Development

Smart infrastructure development in Siliguri is mainly concentrated in commercially important and planned areas such as City Centre, Sevoke Road, Hill Cart Road, Skydale, and Uttorayan Township. These places have better surveillance systems, LED street lighting, traffic monitoring, and organized public spaces.

On the other hand, peripheral wards, older residential areas, and economically weaker neighbourhoods receive fewer technological upgrades. This unequal distribution of smart infrastructure creates spatial inequality and limits inclusive urban development.

Solution: Expand smart infrastructure.

2. Digital Divide and Limited Digital Literacy

The introduction of e-governance services — like online property tax payment, trade license applications, and grievance portals — has made administrative work easier and faster.

However, not all citizens have equal access to digital devices, stable internet, or digital literacy. Elderly people, daily wage earners, and low-income groups often depend on middlemen to use these services. This digital divide reduces inclusiveness and may unintentionally marginalize vulnerable populations.

Solution: Awareness programmes.

3. Rapid Population Growth and Infrastructure Pressure

Siliguri's strategic location in the Chicken's Neck corridor and its importance as a trade and transit hub attract continuous migration. As a result, the population is growing rapidly, putting pressure on housing, water supply, drainage, transport systems, and public utilities.

The rise in private vehicles has increased traffic congestion on major roads like Sevoke Road, Hill Cart Road, and areas around Bidhan Market. Although smart traffic systems help in monitoring and regulation, they cannot fully solve problems caused by limited road space and fast urban growth.

Solution: Improve public transport.

4. Rapid Urban Expansion and Informal Settlements

The city's fast horizontal and vertical expansion has led to the growth of informal settlements and unplanned residential areas. There are 150 notified and dozens of non-notified informal settlements, primarily located along the Mahananda, Fuleshwari and Jorapani rivers, Ward 35 and Railway land. Many of these localities lack proper drainage, sanitation, and organized waste management systems.

Smart technologies are more visible in planned and structured urban zones, while informal settlements often remain outside the main focus of development. This imbalance highlights the need to integrate smart initiatives with inclusive urban planning.

Solution: Slum redevelopment integration.

5. Persistent Urban Challenges

Even with technological improvements, several traditional urban problems continue to exist. Seasonal waterlogging still affects low-lying areas such as parts of Pradhan Nagar and Hakim Para, showing drainage infrastructure limitations.

Waste collection systems have improved in some wards, but waste segregation at the source is still inconsistent due to low public awareness and behavioural resistance. These challenges indicate that technology alone is not enough — community participation and infrastructure strengthening are equally important.

Solution: Drainage modernization.

6. Environmental Vulnerability

Siliguri is located close to the Himalayan foothills, which makes it environmentally sensitive. Increasing construction work, commercial expansion, and vehicle emissions are putting pressure on the local environment.

Some initiatives like LED street lighting and improved waste management support environmental sustainability. However, smart technologies alone cannot reduce larger environmental risks. Proper green planning, environmental regulations, and strict monitoring are also necessary for long-term ecological protection.

Solution: Green planning.

7. Financial and Maintenance Constraints

Smart infrastructure requires regular funding, skilled manpower, and continuous maintenance. As a developing city, Siliguri depends heavily on government funds provided under national schemes.

If there are delays in funding or technical maintenance, the efficiency of smart systems may decline. For example, non-functioning traffic signals, damaged digital kiosks, or poorly maintained CCTV cameras can reduce public trust in smart governance systems.

Solution: Public-Private Partnership Funding.

8. Privacy and Data Security Concerns

The expansion of CCTV surveillance across commercial areas, transport hubs, and major intersections has improved public safety and monitoring capacity.

However, it also raises concerns about data privacy and ethical use of surveillance. To ensure responsible use of technology, clear government guidelines, transparent data management systems, and public awareness are very important.

Solution: Data protection rules.

9. Rising Cost of Living and Real Estate Pressure

Infrastructure development in areas like Uttarayan and Skydale has increased property values and commercial importance. While this shows economic growth and modernization, it also leads to higher living costs.

As property prices and rents rise, lower-income groups may face affordability challenges. This can increase socio-economic inequality if development benefits are not distributed equally.

Solution: Affordable housing.

Overall, the findings show that smart city technologies have improved administrative efficiency, traffic management, and service delivery in Siliguri.

However, several challenges still remain. These include unequal infrastructure distribution, environmental risks, funding and maintenance issues, privacy concerns, and inclusive urban planning gaps.

For sustainable and balanced urban development, smart technologies must be supported by strong policies, inclusive planning, financial sustainability, and environmental resilience strategies.

Conclusion

The impact of smart city technologies on urban life in Siliguri shows a clear shift toward modern and technology-based development. Because of its important location in the Chicken's Neck corridor, Siliguri faces heavy population pressure, business expansion, and infrastructure demands. In this situation, the Smart Cities Mission has played a positive role in improving urban management, sustainability, and overall quality of life.

Smart initiatives such as digital governance services, intelligent traffic management systems, CCTV surveillance, LED street lighting, and improved waste management have brought visible improvements. These developments have increased transparency in administration, helped control traffic, improved public safety, and reduced energy consumption. Planned areas like City Centre, Uttarayan Township, and Skydale show how smart infrastructure can support organized urban growth and economic development. Overall, these efforts have strengthened Siliguri's role as an important commercial gateway connecting Northeast India with the rest of the country.

However, the study also highlights several limitations. Development is not equal in all areas. Traffic congestion on major roads, lack of digital literacy, seasonal waterlogging, and environmental problems continue to affect the city. These challenges prove that technology alone cannot solve deep-rooted urban issues. Financial constraints, maintenance costs, and inclusive access to services remain major concerns. If smart facilities do not expand to peripheral and weaker sections, the gap between developed and underdeveloped areas may increase.

Therefore, the future of smart urban development in Siliguri depends on balancing technology with inclusive planning, environmental care, and public participation. Smart city projects should focus not only on digital upgrades but also on human-centred development. When implemented with transparency, equality, and sustainability, smart technologies have the potential to transform Siliguri into a more resilient, inclusive, and future-ready city.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. Batty, M. (2013). Big data, smart cities and city planning. *Dialogues in Human Geography*, 3(3), 274–279. <https://doi.org/10.1177/2043820613513390>
2. Government of India. (2021). India smart cities annual report. Ministry of Housing and Urban Affairs.
3. Ministry of Housing and Urban Affairs. (2015). Smart cities mission: Statement and guidelines. Government of India.
4. Siliguri Municipal Corporation. (2022). Urban development report. Government of West Bengal.