



## **An Empirical Study of Smart City Project with Reference to Nagpur City**

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### **ABSTRACT**

The Directorate of Information Technology, Government of Maharashtra has taken proactive steps to strengthen the initiative by implementing ICT based Smart Interventions for Nagpur along with Nagpur Municipal Corporation (NMC), Nagpur Police Department and other city administration bodies. The city has adopted implementation of pan-city initiatives in phased manner with implementation of City Network Backbone, City Wi-Fi, City Kiosk and City Surveillance Vehicles and Drones forming the initial phase. The overall paper tries to analyze the smart city project of Nagpur City. The findings shows that the NMC employees, and citizens are unaware of the Smart city awareness and new rules that are being eradicated. However, despite this complexity, the analysis made it possible to identify three structural axes that traverse the project and capture the main research perspectives, and reveal some key aspects of this new city planning and development paradigm.

**Keywords:** smart city research, urban studies, bibliometric analysis, intellectual structure

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### **INTRODUCTION**

Smart Cities Mission (SCM), launched in 2015, is an urban renewal and retrofitting program by the Ministry of Urban Development, Government of India. The mission aims to develop 100 cities by 2022 across the country with an objective to provide a clean and sustainable environment, thereby a decent quality of life to its citizens through the application of 'Smart' Solutions in provisioning of basic infrastructures & services. Smart Cities focus on their most pressing needs, mainly in the infrastructures such as water supply, sanitation, electricity, mobility, etc. and on the greatest opportunities to improve lives through social infrastructures & services like housing, health & education, safety, digital literacy and governance, etc.

#### ***Nagpur Smart City Project***

Nagpur is being developed as a Smart City under the Smart City Mission of Ministry of Urban Development, Government of India. The Nagpur Smart City project envisages transforming India's heart-Nagpur into the "most livable eco-friendly, edu-city that electronically connects people with the government to co-create an inclusive ecosystem".

#### ***Purpose & Approach***

The present impact study on Nagpur Smart City project is being undertaken from the perspective of understanding effectiveness of current implementation of various project components, identifying areas for improvement and suggesting possible directions for enhancing the implementation mechanisms based on the feedbacks received from identified stakeholders. The study relies on the perceptions of the stakeholders viz., the citizens, NMC officials and the Nagpur Police personnel. The present impact study though psychometric in nature relies on the conceptual framework of social perception.

Social perception is the study of how people form impressions of and make inferences about other people as sovereign personalities. There are four main components of social perception: observation, attribution, integration, and confirmation.

#### ***The Stakeholders***

Thus the present impact assessment study incorporates three level stakeholders' viz. NMC officials, Police and Citizens to understand and evaluate the holistic impact for functional better tomorrow.

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## Review of Literature

The concept of smart city has been shaped in a literature that spans 30 years, since the first writings on the subject at the beginning of 1980s to the current explosion of publications. An early phase in the use of the term and formulation of the concept was the period 1985-1995, while proper use and full meaning in the urban development and planning literature came after 2000. Definition of the concept of the smart city evolved in parallel with that of other similar or quasi-similar concepts like intelligent city, digital city, and cyber city. In the early writings, the demarcation lines between these concepts were fuzzy and all these terms attempted to capture the same information based and knowledge-driven development process of cities. A very rich literature is now available which reflects on the concepts of intelligent-smart-digital-cyber cities and captures the contribution of digital technologies, information and knowledge flows, and innovation systems to the development and planning of twenty-first century cities. This literature highlights a trajectory of urban change: it describes a series of innovations in urban systems sustained by broadband networks, sensors, data management technologies, software applications and e-services. Both the urban system and the innovation system of cities change as these technologies enable citizens, end-users, enterprises and organisations to develop innovative behaviours in relation to the use of urban spaces and more intelligent decision-making in the development of cities.

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## Research Methodology

### Nagpur Municipal Corporation Employees (N=50).

- Male-38,
- Female-12
- The scale consisting of 42 Items, elicits the information on the following four variables viz.
- **Impact Assessment,**
- **Coordination and Implementation,**
- **Awareness and Training &**
- **Perception**

### Nagpur Police (N=50).

Male-43,

Female-07

The scale consisting of 47 Items elicits the information on the following five variables viz.

**Impact Assessment,**

**Crime Detection,**

**Awareness and Training,**

**Coordination and Implementation,**

**Participation and Perception.**

### Nagpur Citizens (N=50)

Male-36,

Female-14

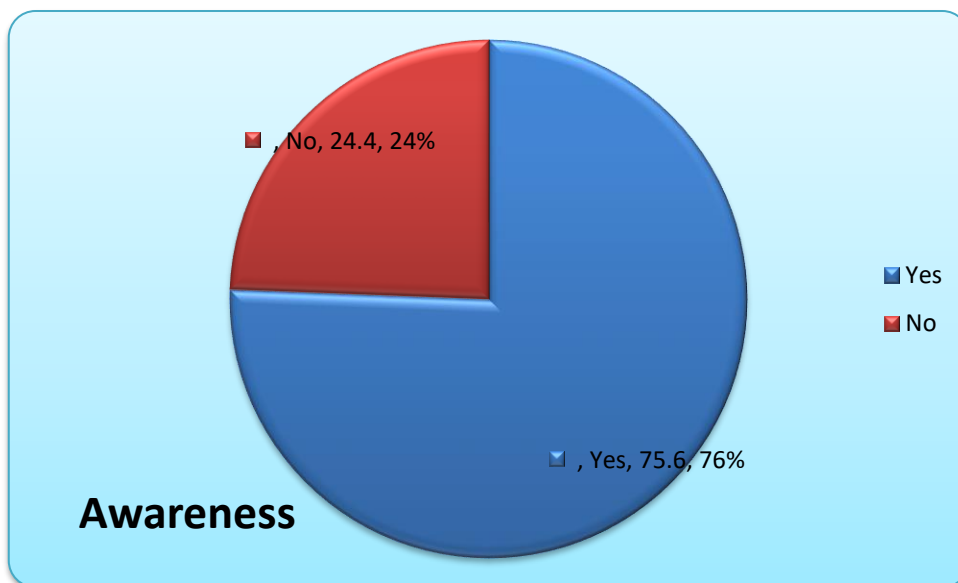
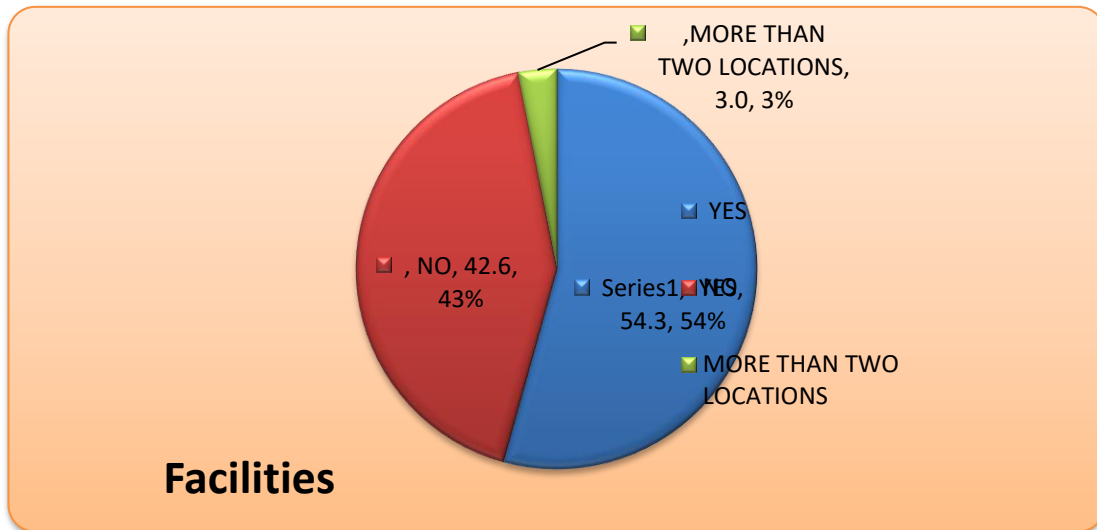
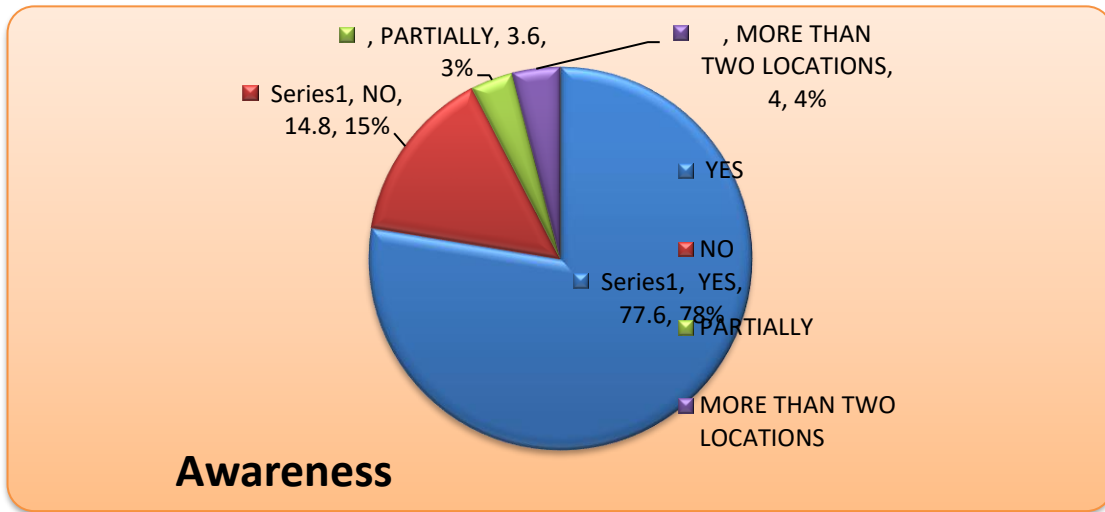
The sample included

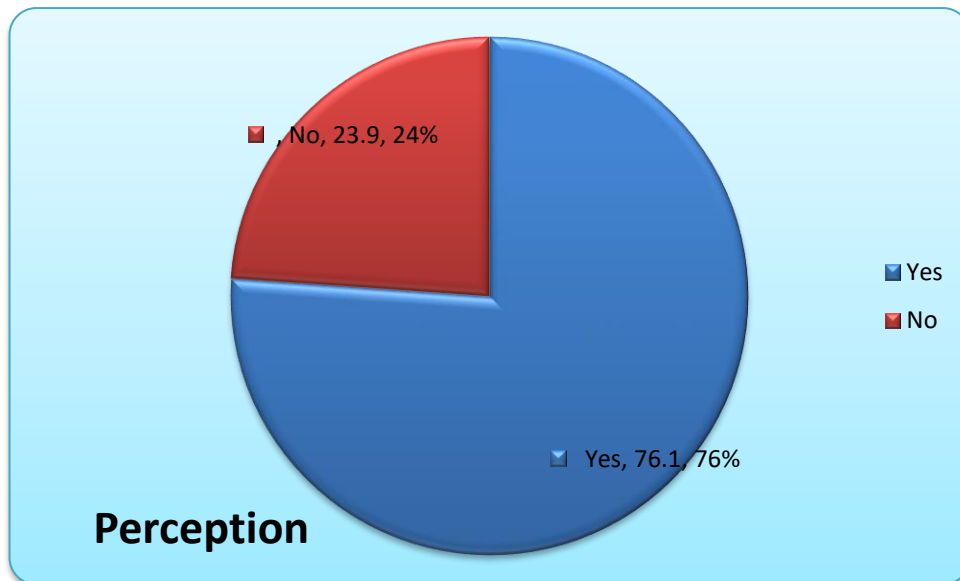
teachers, lawyers, students, vendors, doctors, food delivery persons, working women, elderly people and common commuters.

A specific questionnaire consisting of 26 items was used. The following variables impact

- **Assessment,**
- **Awareness,**
- **Facilities,**
- **Applications &**
- **Perception were analyzed**

**Data Analysis & Data Interpretations**





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### Recommendations/ Suggestions

- Awareness programmes for Citizens
- Training for NMC Officials and Police Personnel
- Information dissemination more in local and understandable means
- Making information relevant to stakeholder
- Improving inter-agency/ multi-stakeholder coordination
- Developing incentives/ mechanisms for encouraging citizens

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### Conclusion

A considerable positive change in the attitude of common citizens towards traffic regulations and improved empathy towards discipline in public places including roads have been observed after the implementation of Smart City project components. Majority of the respondents shared a positive perception towards improved relation with authorities, enhanced safety & employability in the city through smart city interventions.

The initiatives undertaken by the authorities towards generating awareness amidst all stakeholders about various project activities & their objectives have been observed to be partially successful. While majority of the respondents from citizen group were observed to be aware and even willing to support the authorities for implementation of the project components, a considerable section of officials in Nagpur Municipal Corporation with nearly 34% of the respondents, were found to be unaware of Smart City project initiatives.

The CCTV cameras installed at various traffic junctions is observed to be more successful strategy for regulating the traffic movements and road safety with nearly 75% of respondents having shifted to wearing helmets after the implementation of smart city project. The cameras have also instilled a sense of security for the elderly and women and the respondents perceived that such technology could be effective in controlling crowd during special events in the city.

The facilities developed under the smart city initiatives such as Wi-Fi, smart parking and the solid waste management have not been able to receive expected patronage or acceptance by the common citizens as almost 50% of respondents were not taking advantages any of such facilities developed. The operational issues with these facilities were reported to be the main hurdles for their effective use.

The smart city initiatives and particularly the applications of ICT have been more successful in bringing a cultural shift amongst the citizens with enhanced awareness of citizens about their surroundings. The city is witnessing more cultural vibrancy with increased number of socio-cultural events being organized and people being receiving updated information about the same through ICT means. A better civic sense is observed by the officials and police personnel due to various awareness messages being displayed through variable message signboards installed at prominent locations.

The governance mechanisms enabled through technological interventions such as CCTV cameras, public addressing systems, and ICT means has not only improved the efficiency and effectiveness but also the accountability of officials and the police personnel. The financial performance of these establishments through collection of taxes and challans is also opined to have improved due to applications of ICT tools.

The smart city initiatives have also been observed to have resulted in better crime detection. The technological interventions such as CCTV cameras were also observed to be very effective in detection of locations vulnerable to local flooding, which enabled reduction in response time and thereby reduction in losses during floods.

Any policy intervention leads for additional efforts, training and time for its successful implementation. This transition phase is more demanding in nature. NMC officials and Nagpur police opined that their work profile has become more demanding; but also accepted that their work efficiency has significantly increased.

All the three stakeholders were significantly positive about the role of Nagpur Safe and Smart City Project's success. Citizens 90%, Police 82% and NMC officials 88% were of the opinion that the successful implementation of the project will enhance the image of Nagpur at a global level.

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## References

- Newstead A. (1989), Future Information Cities: Japan's Vision. *Futures*, 21, 3: 263-276. DOI: 10.1016/0016-3287(89)90023-2.
- Odendaal N. (2003), Information and Communication Technology and Local Governance: Understanding the Difference between Cities in Developed and Emerging Economies. *Computers, Environment and Urban Systems*, 27, 6: 585-607. DOI: 10.1016/S0198-9715(03)00016-4.
- Palmisano S. J. (2008), A Smarter Planet: The Next Leadership Agenda. Available at: [https://www.ibm.com/ibm/cioleadershipexchange/us/en/pdfs/SJP\\_Smarter\\_Planet.pdf](https://www.ibm.com/ibm/cioleadershipexchange/us/en/pdfs/SJP_Smarter_Planet.pdf)
- Komninos, Nicos & Mora, Luca. (2018). Exploring the Big Picture of Smart City Research. *Scienze Regionali*. 17. 10.14650/88815.