



*Journal of Social Issues and Development (JSID)*

(Himalayan Ecological Research Institute for Training and Grassroots Enhancement (HERITAGE))

ISSN: 2583-6994 (Vol. 3, Issue 1, January-April, 2025. pp. 192-205)

# **Smart Security in Smart City Sagar: A Sociological Study**

**Anuradha Shukla<sup>1</sup>**

**Diwakar Singh Rajput<sup>2</sup>**

## **ABSTRACT**

City plays a huge role in social and economical perspective of an individual life. The Smart City Mission is a ground breaking initiative launched by the Indian government in 2015 to change nation's urban landscape. The core objective of Smart City Mission is to give its citizens a high quality of life, a safe and secured environment by providing smart solutions for inhabitants. Smart city offers an advanced lifestyle solution to the people. It gives a healthier and comfortable living condition which is safe as well as sustainable. Among many other things, safety and security lies at the core of smart city concept.

This paper highlights the concept of Smart Security for providing safe and secured environment for its inhabitants. To create safer environments and to improve the quality of the life of inhabitant city continues to turn to Internet of Things (IoT) solutions such as camera and sensor, Artificial intelligence, connectivity services and so on. Today IoT not only enable sensation of life but also imparts new genre of innovation. It has been found that IoT plays a significant role in achieving security. In this proposed research

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<sup>1</sup> Research Scholar, Department of Sociology, Dr. Harisingh Gaur Vishwavidyalaya, Sagar, MP

<sup>2</sup> Head and Dean, Department of Sociology, Dr. Harisingh Gaur Vishwavidyalaya, Sagar, MP

using IoT for smart security surveillance system aims at enhancing the public security using IoT.

For the present study, Sagar Smart City is selected as the research area. The present study is based on primary and secondary data. 50 respondents are selected as sample size. The Questionnaire is used as a tool for the collection of primary data. This systematic review explore the recent literature concerned with new 'smart city' security technologies and aims to focuses on what extend actions are taken by smart security to provide safety of its inhabitants.

**Keywords:** Smart City, Smart Security System, Women Security, Vulnerable Group, CCTV.

## Introduction

City plays a huge role in social and economical perspective of an individual life. Nowadays, more than 54% of the world population is living in urban space. According to estimates by 2050 this rate will reach at 66 percent. The rapid population growth along with increased urbanization has raised a variety of social, economical, technical and organizational problems which tends to endanger economical and sustainability of cities.<sup>1</sup> Regardless of the reasons, increasing urbanization leads not only to the increase in demand for energy, water, housing and urban space but also uncontrolled development outside the city. As a result, this process leads to decrease in efficiency, accessibility in the area related to energy consumption, traffic, waste management, population, living and so on. Therefore, it is necessary to implement highly effective solution in cities that will not only enable sustainable development but also social welfare which will be reflected in the improvement of urbanites life.<sup>2</sup> Thus the increasing complexity of city is a multidimensional phenomenon. In order to meet the emerging social and economical challenges cities are using modern information and telecommunication technologies. In this way, the idea of smart city is implemented in the cities.

IBM is the company that originally coined the term "smart city". The journey of smart cities goes way back to 1970s, when Los Angeles created the first urban big data project: "A Cluster Analysis of Los Angeles". Constructing smart cities will bring about a higher quality of life to the masses through digital interconnectivity, leading to increased efficiency and accessibility in cities.<sup>3</sup> The Smart City Mission is a ground

breaking initiative launched by the Indian government in 2015 to change nation urban landscapes. The core objective of Smart City Mission is to give its citizens a high quality of life, a safe and secured environment by providing smart solutions for inhabitants. The dimensions of smart city mission are: Smart Security, Smart Economy, Smart Health, Smart Traffic management, Smart Citizenship, Smart Mobility, Smart Energy, Smart People, Smart Governance and Smart Living. One of the more serious challenges facing a smart city is maintained through CCTV camera, video surveillance in public places, emergency boxes, centralized command centre, street level alarm, passive crime prevention techniques and so on. The main component of smart security system is digitally enabled devices that are embedded into fabric of cities such as smart meters, software controlled equipment, emergency boxes and digital CCTVs.

Smart city offers an advanced lifestyle solution to the people. It gives a healthier and comfortable living condition which is safe as well as sustainable. Among many other things, safety and security lies at the core of smart city concept. However, the rapid integration of digital systems and increasing interconnectivity that characterize smart cities also introduce new layers of vulnerability. Smart security surveillance using IoT and camera module is an interesting idea to involve detection of sensing of the moving object and generate responses for better security. The consequence of security breaches in smart city context beyond financial losses to encompass compromised citizen safety, loss of public trust, and hindrance to overall urban development progress.<sup>4</sup>

### **Smart City**

Smart city is a place where traditional networking services are made more flexible, efficient and sustainable with the use of information, digital and telecommunication technologies to improve its operation for benefits of inhabitants.<sup>5</sup>

### **Smart Security System**

Smart security is a security system in which all the components communicate with each other, work together and create advance level of site protection by their smart abilities. Smart abilities mean that they can be controlled independently, simultaneously, completely remote through smart devices.<sup>6</sup>

### **Vulnerable Group**

Vulnerable groups are physically, mentally or socially

disadvantaged persons who may be unable to meet their basic needs and may therefore require specific assistance. Persons exposed to or displaced by conflict or natural hazard may also be considered as vulnerable.<sup>7</sup> Vulnerable group includes children, women, elder and so on.

## **CCTV**

CCTV (closed-circuit television) is a TV system in which signals are not publicly distributed but are monitored, primarily for surveillance and security purposes.<sup>8</sup>

## **Women Security**

Smart city uses technologies to improve women safety through developing hostels for working women, emergency call boxes, CCTV surveillance and real-time monitoring.

## **A Brief Review of the Work Already done in the Field**

For the present research study, following articles have been studied related to Smart City Mission, Smart City and Smart Security System.

1. Osipova Margarita (2022), “Smart City for women’s safety: exploration of the problems and solutions through Co-Design”: The literature highlights the women safety issues in cities and what are the requirements for the technology of the Smart City that can help to make them feel safer and reduce the “fear of crime” that women experience in urban environment which limits them from moving freely around the city in their own, especially in a dark time of the day.<sup>9</sup>
2. Laufs Julian; Bradford Ben and Borrion Herve (2020), “Security and the Smart City: A Systematic Review”: The literature highlights on new security technologies that can be considered to fall under the smart city concept. It aims to investigate new interventions correspond with traditional functions of security interventions, and how they affect the urban planning and the local governance.<sup>10</sup>
3. Moch Natalia; Wereda Wioletta (2020), “Smart Security in the Smart City”: This article is basically about how the safe city differs from smart security in Smart City. Safe city only addresses the issue of reducing crime such as reducing murders, rape, robbery but today urban safety is a result of many complex sectors such as lack of opportunity, economic polarization,

territorial segregation, organized crime and poor prevention and so on. The literature on the subject suggests with the use of modern communication and information technologies provide solution in many other areas that shape urban space through the security solution.<sup>11</sup>

4. Sookhak Mehdi; Tanag Helen; Yu F. Richard and He Ying (2019), "Security and Privacy of Smart Cities: A Survey, Research Issues and Challenges: The literature provides a comprehensive survey on security and privacy of smart city with focusing on security requirement, issues and challenges. This article talks about the concept of smart city which refers to applying all variable technologies and resources in an intelligent and coordinated manners within of the living urban areas.<sup>12</sup>

### **Objectives of the Study**

1. To study the concept Smart Security.
2. To study the impact of smart security in the field of urban development.

### **Research Questions**

This research aims to understand the point of view of women on the safety issues in cities and What are their requirements for the technology of the Smart City that can help to make them feel safer and reduce the fear of crime. Therefore research questions are formulated in following ways –

1. What is Smart Security?
2. What actions are taken by city to provide safety for its inhabitants?

### **Study Area**

For the present study, Sagar Smart City has been selected as the research area. Sagar City is a district of Madhya Pradesh. Sagar is a city with defence establishment. As far as administrative status of city, it is a multifunctional region having trade-cum-commerce industries in its setup. It is semi-urban place, which offers travellers the opportunity richness of nature along with comfort of urban lifestyle.<sup>13</sup>

As per provisional reports of census 2011, Sagar City has population of 273,296; it's urban / metropolitan population is 370,208 of which 194,787 are males and 175,421 are females.<sup>14</sup>

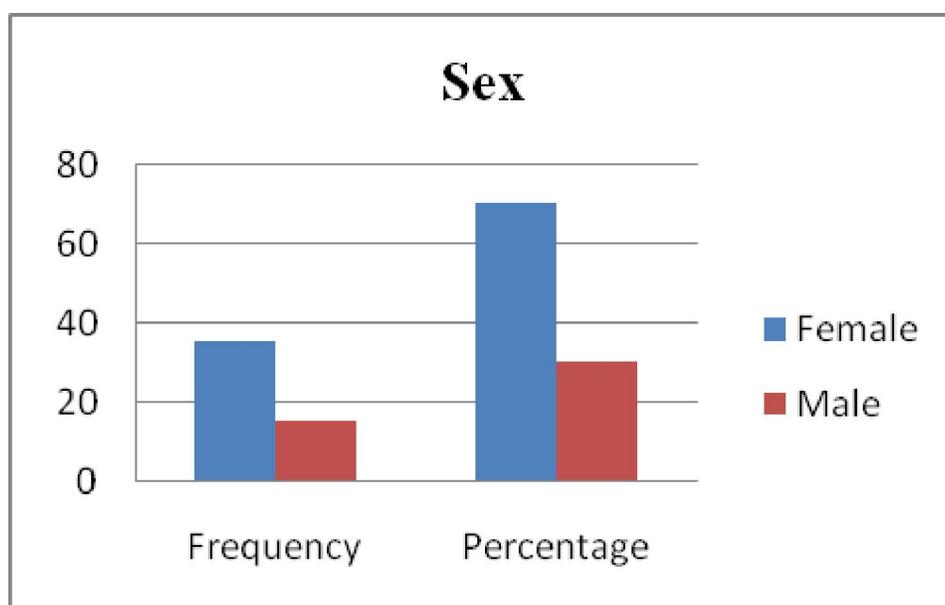


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Out of 50 respondents, the data is collected from 25 working women and 25 elderly people (include 15 men and 10 women).The various statistical and research methods have been used for the classification and tabulation of data.

**Table 1.01**  
**Sex**

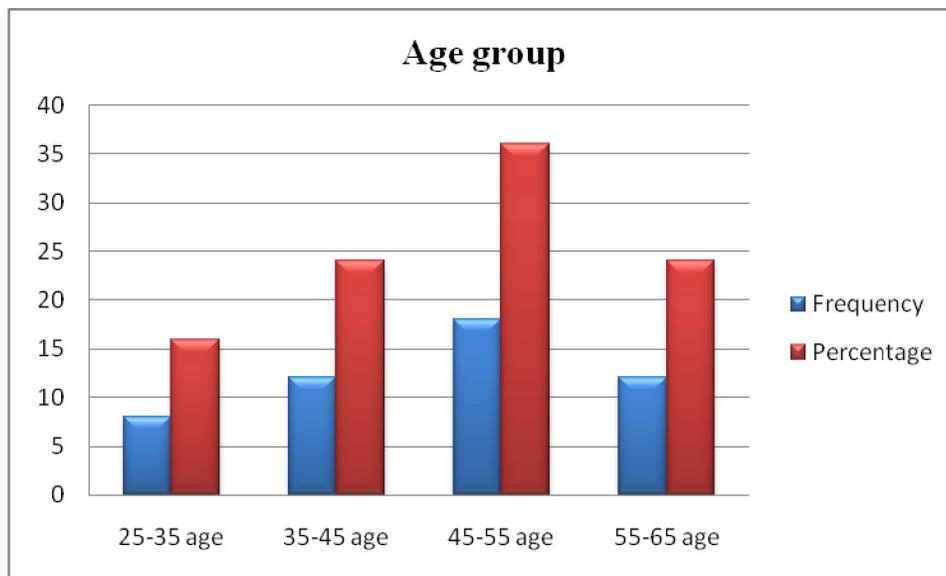
S.No.	Sex	Frequency	Percentage
1.	Female	35	70
2.	Male	15	30
	Total	50	100



On the basis of data obtained, it can be said that 70% are female respondents and 30% are male respondents which fulfills the requirement of Table No. 1.01 for the study.

**Table 1.02**  
**Age Group**

No.	Age group	Frequency	Percentage
1.	25-35 age	8	16
2.	35-45 age	12	24
3.	45-55 age	18	36
4.	55-65 age	12	24
	Total	50	100

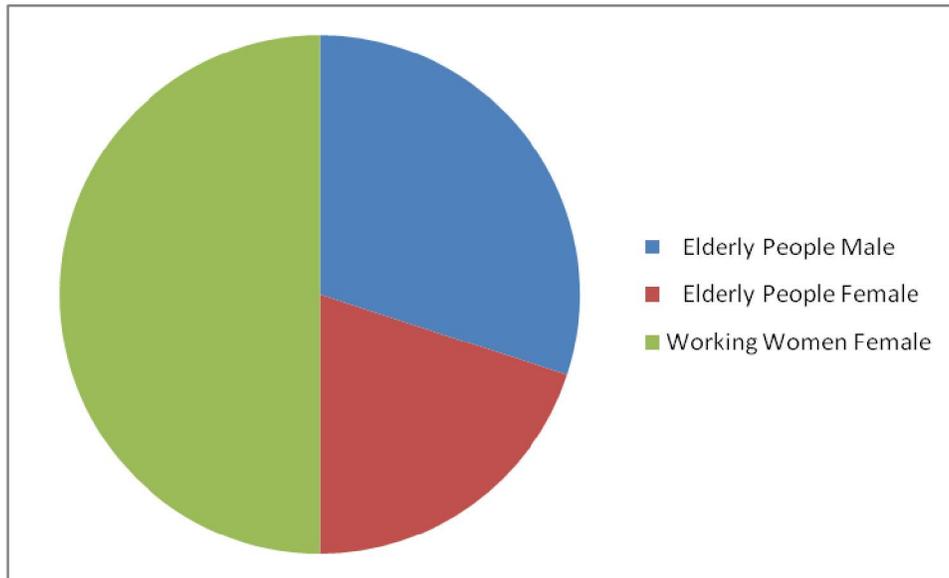


On the basis of data obtained, it can be said that 16% of the respondent are in the 25-35 age group, 24% of the respondent are in the 35-45 age group, 36% of the respondent are in the 45-55 age group and 24% of the respondent are in the 55-65 age group.

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**Table 1.03**  
**Respondents**

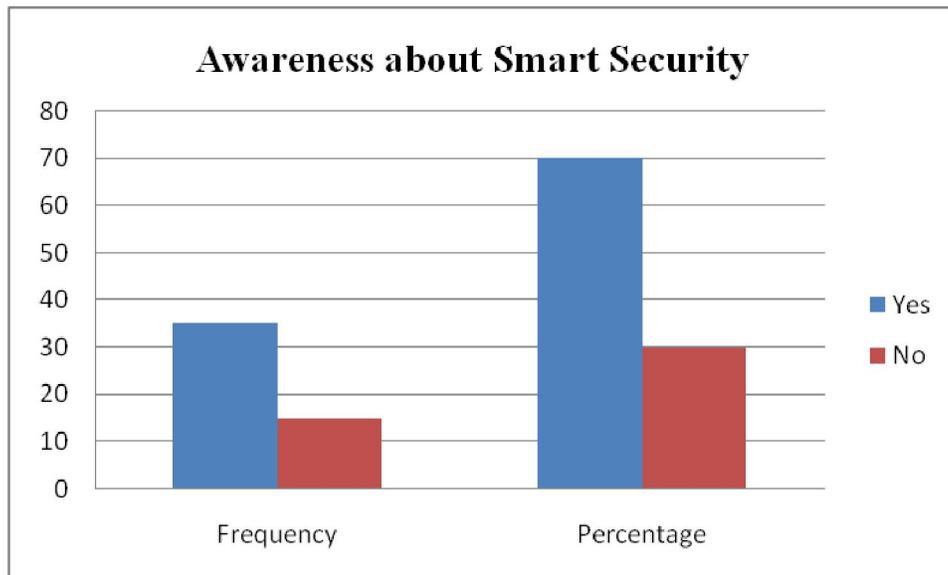
S.No.	Respondents		Frequency	Percentage
1.	Elderly People	Male	15	30
		Female	10	20
2.	Working Women	Female	25	50
	Total		50	100



On the basis of data obtained, it can be said that 50% respondents are elderly people (includes 30% male and 20% female) and 50% respondents are working women which fulfills the requirement of Table 1.03 for the study.

**Table 1.04**  
**Awareness about Smart Security**

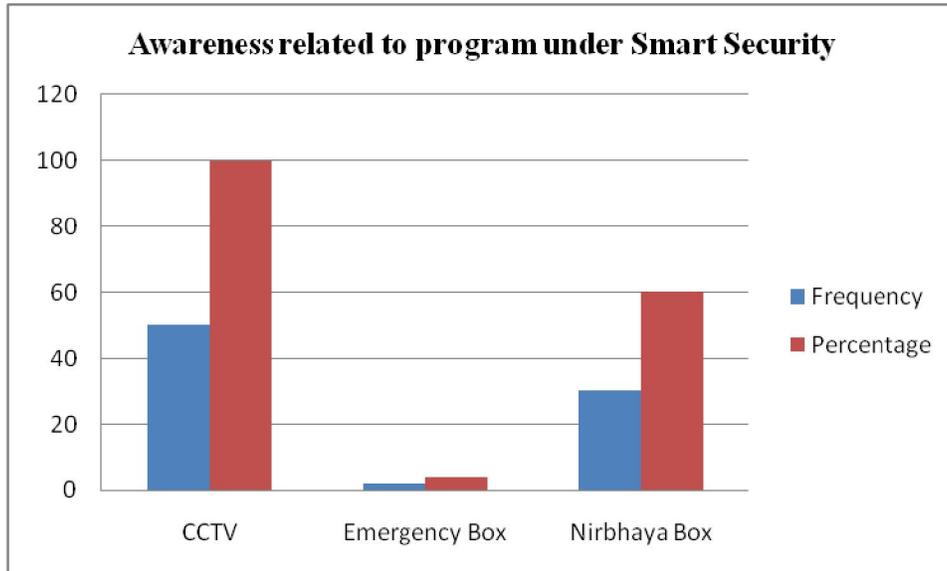
No.	Awareness about smart security	Frequency	Percentage
1.	Yes	35	70
2.	No	15	30
	Total	50	100



From the data obtained, it can be said that 70% of the respondent are aware about smart security while 30% of the respondent are not aware about smart security provided by smart city mission.

**Table 1.05**  
**Awareness related to Program under Smart City Mission**

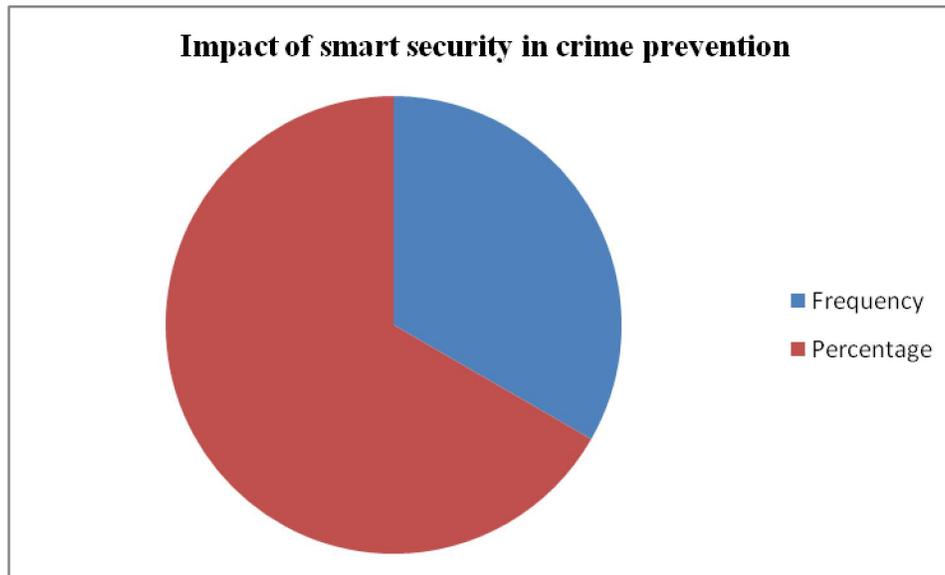
No.	Program under Smart Security	Frequency	Percentage
1.	CCTV	50	100
2.	Emergency Box	02	4
3.	Nirbhaya App	30	60



From the data obtained it can be said that, 100% of respondents are aware of CCTV. As CCTV system offers numerous advantages, primarily focused on security and crime prevention. 4% of respondents are primarily aware of emergency boxes in city while 60% of respondents are aware of nirbhaya app.

**Table 1.06**  
**Impact of Smart Security in Crime Prevention**

No.	Impact of smart security in crime prevention	Frequency	Percentage
1.	Yes	45	90
2.	No	05	10
	Total	50	100



From the data obtained, it can be said that 90% of the respondent believes that smart security had the impact on crime prevention while 10% of the respondent believes that smart security had no impact on crime prevention.

### **Conclusion**

On the basis of present study, it can be said that Smart Security System have a significant positive impact on inhabitants livelihood by

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enhancing safety, convenience and energy efficiency while also offering benefits like better healthy tracking and improved security. They transformed city into more secure and safe environment by providing real-time monitoring, remote control and promoting a sense of well-being. Smart Security System includes CCTV (closed-circuit television), Emergency boxes and tracking Nirbhaya app on smart city office itself which provides safety for its inhabitants. With the use of modern communication and information technologies provide solution in many other areas that shape urban space through the security solution.

From the data obtained, it can be said that 90% of the respondent believes that smart security had the impact on crime prevention as security system helps police to solve criminal cases, help them to identify criminals or offenders on CCTV by real-time monitoring while 10% of the respondent believes that smart security had no impact on crime prevention.

From the data obtained it can be said that, 100% of respondents are aware of CCTV. As CCTV system offers numerous advantages, primarily focused on security and crime prevention. 4% of respondents are primarily aware of emergency boxes in city. Emergency box is an all-in-one solution to assist citizens and public entities in crisis prevention planning at city where 60% of respondents are aware of Nirbhaya app.

Smart City offers numerous facilities to ensure its citizens safety so that our family can feel safe, day and night. Emergence response teams comprising ambulances, fire engine, the police and protection force, with a maximum response time of 10-15 minutes. Video surveillance is installed in public places to deter criminal activities. 24x7 monitoring is ensured by the central command centre for prompt reaction to emergencies. Street-level panic alarm systems are located at short intervals to help residents immediately alert the command centre in case of emergency of crime.

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