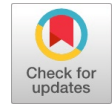# Technology and Policing: An Assessment of Police Commissionerate of Two Cities of Eastern India

Deblina Majumder, Arpita Mitra

Abstract: *Technology is a quintessential part of everyday life, police is not an exception in this regard. From "prevention and detection of crime" to "maintenance of law and order" police personnel are dependent on technology. Welcoming the era of pro-active policing, police has become adroit in using the progressive world of technology. Initially, police used batons, whistles, rattles, telegraph and now police has technology like wireless systems, Global Positioning System, sophisticated side handled batons, forensic checking, bullet proof jackets, etc. in the era of e-governance where police stations have websites and provisions like e-First Information Report. This paper explores the challenges faced in the use of technology during policing; and also to assess its impact on the police personnel of the two cities of eastern India. This is an empirical study conducted on the police personnel of police commissionerate of two cities of eastern India. The sample consists of fifty police personnel serving under the police commsionerate. The primary data was collected using face to face interview and perusing through Bureau of Police Research and Development reports. Secondary data has been collected from books, journals, articles, internet sources and newspapers.*

Keywords: Technology, Police and Policing.

I. INTRODUCTION

Technology is a quintessential part of everyday life, **police** is not an exception in this regard. From "**prevention and detection of crime**" to "**maintenance of law and order**" police personnel are dependent on technology. Greeting the era of **pro-active policing**, police has to be proficient in using technology in the progressive world. Since the inception, police has been using **batons, whistles, rattles, telegraph** and now police has technology like **wireless systems, GPS, sophisticated side handled batons, forensic checking, bullet proof jackets**, etc. Police personnel face challenges every day. Of all materialistic challenges, the greatest challenge is to have knowledge of technology and be also acquainted with it. Policing is a **hazardous**, intricate, tangibly and intellectually thwarting, and typically unacknowledged job. The **array of work** differs widely -from the meek duty of assisting school children safely cross the roads to the **formidable** duty of following men riding at

breakneck speed; from the tracing down of hit-and-run chauffeurs by means of "**scientific accident investigation**" to having welfare discussions prior to any kind of associations; from restricting activities of pickpockets and prostitutes to rendering first aid at major adversities; from the issuance of bays' tags and routine trying to the apprehend and convict of swindlers and big-time shots. To make duties smoother the use of technology is must.

II. CONCEPTUALIZATION OF THE TERMS TECHNOLOGY AND POLICING:

Technology can be defined as "the practical application of knowledge especially in a particular area" this also has another description, "a manner of accomplishing tasks especially using technical process, methods, or knowledge." [1] Technology essentially means the use and application of science in in everyday life. On the other hand, **policing** refers to the activities which police personnel conduct in order to "prevent and detect crime" and "maintenance of law and order". **Police** and **policing** are two sides of the same coin, one is the organ of the state which takes care of people and their property by maintaining law and order and preventing and detecting crimes; the other is the manner in which police works. So policing is an aspect of police. The entire responsibility of keeping the society at peace is formally assigned to the police.

The **police utilises technology** in a wide range of occasions. It holds a pivotal position especially in detecting the organised crime and combating terrorism which is a global concern. The greatest dare for the police organisation is make utilization of technology in policing within the inadequate funds, and the starting to bring in new technology requires a lot of resource, both infrastructurally as well as economically.

III. METHODOLOGICAL ORIENTATION OF THE STUDY:

This research paper is an **exploratory research**. The **universe of the study** are the police personnel of Bhubaneswar and Guwahati. To undertake the said **empirical** research **non-probability sampling** has been used to determine the respondents, especially **judgmental** or **purposive** sampling, and **snowballing**. The **primary data** has been collected through **face to face interview** of the police personnel posted in the police stations of both the cities and the BPRD report. **Secondary data** has been collected from books, journals, important websites, newspapers and internet resources.

The aim of the study is to explore the challenges faced in the use of technology during policing; and also to assess its impact on the police personnel of the two cities of eastern India.

IV. ABOUT POLICE COMMISSONERATE OF BHUBANESWAR AND GUWAHATI

Urban regions in India have been indorsing prompt development. Resulting which the challenges faced by the police in cities have also accelerated. In such a situation, as endorsed by the **National Police Commission** in its 6th Report, a scheme of Police Commissionerate should be announced in cities with five lac (as per 6th Report) and above inhabitants, and areas where distinct circumstances like swift urbanisation, industrial development, etc. claim it. Originally, the Commissionerate system commenced only in few metropolitan areas like Calcutta, Mumbai, Hyderabad and Madras. With the passage of time, it has extended to fast growing cities like Ahmedabad, Bhubaneswar-Cuttack, Delhi, Pune, Mysore, Nagpur, Gurgaon, Vishakhapatnam, Kochi, Trichy to name a few. Police Commissionerate in Bhubaneswar-Cuttack was introduced in **1998** and the same was introduced in **2015** in Guwahati. In the study at hand Police Commissionerate of Bhubaneswar and Guwahati have been assessed. These two cities belong to the eastern part of India but the geographical positioning is just the opposite, where Bhubaneswar is on the plains, Guwahati is in the hilly terrains. The opportunities received by the two places are different too.

V. DEMOGRAPHIC PROFILE OF THE SAMPLES

Table 1. Introducing the Sample

Category	Bhubaneswar	Guwahati
Sex	Male: 92% Female: 08%	Male: 88% Female: 12%
Age	30-40years : 24% 41-50 years: 64% Above 50 years : 12%	30-40 years: 28% 41-50 years: 12% Above 50years: 60%
Marital Status	All are married.	All are married.
Educational Qualification	Graduates: 52% Post Graduates:48%	Graduates: 92% Post Graduates: 08%
Post	Inspector: 84% Sub-inspector: 16%	Inspector: 76% Sub-inspector: 24%
Income	Less than ₹ 60,000 p.m. : 84% More than ₹ 60,000 p.m.: 16%	Less than ₹ 60,000 p.m. : 88% More than ₹ 60,000 p.m.: 12%

(Source: Field Survey)

VI. THEORETICAL FOUNDATION OF THE STUDY

The paper is based on the Technology Acceptance Model (TAM). This is an information systems theory that simulates how users come to "accept and use a technology". The model proposes that when operators are offered with an innovative technology, numerous factors stimulate their resolution about how and when they will use it, especially:

- **Perceived usefulness (PU)** – This was well-defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance".
- **Perceived ease-of-use (PEOU)**– Davis demarcated this as "the degree to which a person believes that using a particular system would be free from effort" [2].

This theory can be applied on policing in the manner in which technology has been used by them. This includes the approach the police have in getting acquainted to the unprecedented development of field of technology which the police requires for pro-active policing.

VII. TECHNOLOGY QUINTESSENTIAL IN POLICING

Man has been using technology since the early age. Right from using brushing one stone against each other to light fire to mobile phones, man is dependent on technology since time immemorial. Technology has always made man's work easier. As stated by Lawrence, "Police uses robotic cameras, handheld lasers, automated licence plate recognition, tablets, GPS vehicle-pursuit dart, thermal imaging, gunshot detection system regularly in their course of work" [3]. Gupta and Jain while writing their paper on smart police have reflected the following: "*The police force needs to keep pace with changing times. Modernization of the force has become inevitable especially in cyber security, counter-terrorism/insurgency and relying on technology for policing… Further, control rooms need to be upgraded.*" [4]

National Crime Reports Bureau (NCRB) had taken the initiated in empowering Police in India especially after the Information technology Act ushered in. the sole objective was to make the police equipped with "Information Technology and Criminal Intelligence". This was welcomed in order to enable them effectively "enforce the law and improve public service delivery". This was dreamt to be achieved under the coordination of police forces across the nation and abroad. They intended to upgrade "Crime analysis technology, developing IT capacity, IT enabled solutions compliance & continued improvement of QMS". This was established on 11th March 1986 with many objectives. To name a few vital objectives, to prepare a techno savvy environment; to impart the police knowledge on technology especially referring to improving their internal efficiency, effectiveness and public service delivery;

the best objective by far is the to create and maintain secure sharable National Databases on crimes, criminals, property and organized criminal gangs for law enforcement agencies. [5]

VIII. FINDINGS OF THE STUDY

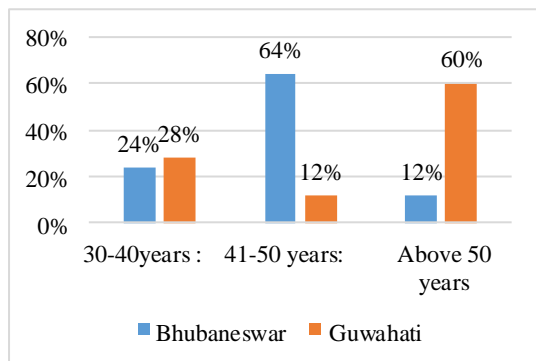**(i). Age of the Respondents and Ease of Use of Technology:**

Fig. 1. Age of the Respondents

In Bhubaneswar, **24% of the respondents** are between the age groups **30-40 years**, 64% of the respondents are 41-50 years of age and only 12% are above 50 years. In Guwahati, 28% of the respondents belong to the age group 30-40 years; 12% are within 41-50 years of age and rest 40% are above 50 years.

This shows that the post of IIC in Bhubaneswar is mostly held by **middle aged officers** than in Guwahati. The scope of promotion is better in Bhubaneswar. These officers (IICs and O/Cs of outposts) are experienced, hold a lot of patience while working, they are agile, very adept with technology.

It is pertinent to mention that 68% of the respondents of **Bhubaneswar** have completed 16 to 30 years in service. 52% of the respondents of **Guwahati** have an experience of 16 to 30 years; 36% of the respondents have been in the service for more than 30 years. The older generations find difficulties and contradictory effects of technological change in the system. While the respondents who are young and middle aged respond positively to changing pattern in policing, more specifically technologically-based changes in the policing strategies.

It was observed by the researcher that 68% of the respondents in **Guwahati** and 88% of the respondents in **Bhubaneswar** use smart phones. This is an indicator of the interest the respondents to incorporate technology in their daily life.
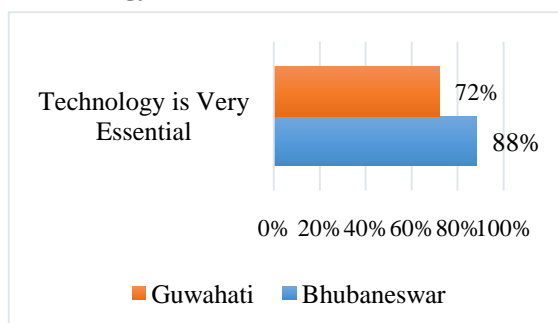
(ii). Technology and Crime Prevention:

Fig. 2. Role of Technology in Prevention of Crime

72% of the respondents in **Guwahati** and 88% of the respondents in **Bhubaneswar** believe that technology is important for police now. Especially to predict future crimes, police in their daily lives must use technology. **All** the police stations are equipped with ICTs (Information and Communication Technology) in both the cities.

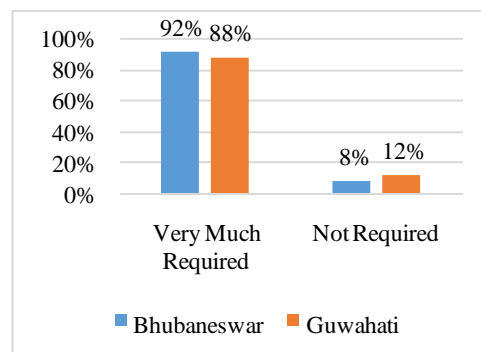**(iii). Training on Technology for Police Personnel**:

Fig. 2. Importance of Imparting Training on Technology

88% of the respondents in **Guwahati** and 92% of the respondents in **Bhubaneswar** believe that there should be frequent trainings on technology.

56% of the respondents in **Guwahati** and 64% of the respondents in **Bhubaneswar** feel confident to attend seminars, lectures and conference on use of technology in policing. Quite a handful of respondents suffer from inferiority complex when they attend such seminars because they feel they are lagging far behind. The dissatisfaction level among the police personnel of Guwahati is higher. Respondent no. 3 of Guwahati said that, "*We seldom get chance to go for training, the reason to two folded: Firstly, the inadequacy of police in our station taking leave for on-job training is tough. Secondly, if we attend programmes too we feel we are lagging behind, there has been a lot of advancement made but we have not brought them to our state. We do not know even how to operate those technolog*y" . 64% of the respondents in **Guwahati** and 72% of the respondents in **Bhubaneswar** believe that rigorous training should be imparted especially on technology during their probation period as well as more frequent on-the –job training should be imparted.

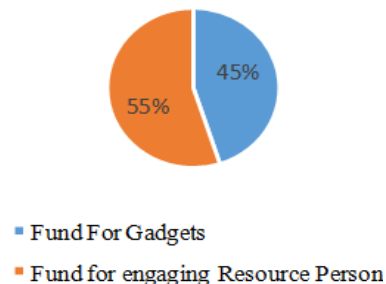**(iv). Role of Government in Enhancing use of Technology**:

Fig. 3: Role of Government

45% of the total respondents believe that the role of the government is **allocating fund** for technologies, but 55% of them say that what is important is to get additional fund to engage professionals who can impart the adequate "know-how" for the use of technology in police work.

Crime in India, 2016 says that "7.7% of the total number of **Corruption, Cyber and economic crimes** in the States and Union Territories are Cyber-crimes". Assam (Guwahati being the capital) holds the first position "Rank as per Crime Rate". So it is evident that the police in Bhubaneswar are more adept in curbing cyber-crimes issues as Odisha (Bhubaneswar is its capital) holds 14th rank. Illegal gain is the main motive of committing such crimes. [6]

88% of the respondents of **Bhubaneswar** and 60**%** of the respondents of **Guwahati** said that there is a relation between use of technology and performance. They will perform especially effectively when they are confident in working in technological environment. Unanimously, the respondents opined that they find it easier to track culprits especially in the cases of money swindling, the IICs track the mobile numbers to detect the place of harbour, in traffic rules violation, etc. This is the era of offences where technological devices are used as mediums of committing crimes. With the help of technology less number of police personnel can perform efficient and effective police work. So the inadequacy of police personnel can be compensated in this way.

IX. APPLICATION OF TECHNOLOGY ACCEPTANCE MODEL TO POLICING

See Table 2 and Table 3 below for the application of the model to policing:

Table 2: Perceived Usefulness

Perceived Usefulness	
Purpose	**Relationship with Findings**
Maintenance of Law and Order	Technology like computers, mobile phones, tablets, wireless, Mobile Cameras to analyse vehicle speed, radar, mobile printers are used by the police to make their policing easier.
Prevention and Detection of Crime	Technology like CCTVs, forensic checking, Electronic Breath Alcohol Test, Radio Frequency Identification (RFID) are very useful in detecting crimes.

(Source: Prepared by Researcher)

Technology has been invented to make work easier, but the work will be felt easier only when it can be used easily. There are certain technologies which requires minimum amount of skill to operate the same.

Table 3: Perceived Ease of Use

Perceived Ease of Use	
Devices	*Ease of use*
Computers, laptops, CCTVs	This requires minimum knowledge about handling the device. Age is one of the factors which hinders easeful use of technology in police domain.
Electronic Breath Alcohol Test, Radio Frequency Identification (RFID)	This requires moderate technological know-how.
Mobile Cameras to analyse vehicle speed, radar, mobile printers	This requires optimum technological know-how. Young officers, police who are highly educated and have a knack for technology will be fast learners.

(Source: Prepared by Researcher)

X. CONCLUDING REMARKS

Access to technology, population growth and the changing nature of crime means police must constantly works to stay ahead of the criminals, simultaneously staying in touch with the common people. Use of more technology in policing will result in an increase in job performance and job satisfaction. The **challenge** faced by the police personnel is **lack of training** on technology; police must possess better ICTs to combat the fast growing technology used by criminals, so keeping a pace is vital; more fund from government should be allocated on this. The **impact** of technology on police and policing of the two cities is remarkable. It is an undisputed fact that police is dependent on technology for being pro-active. The lack of opportunities and funds are causing hindrances. The study has certain limitations: the sample size is small, it is a cross-sectional study and the time frame was less. The researcher recommends the following: (i) The police of the cities must now introduce **robots and drones** in patrolling: remote-controlled robots fortified with cameras can inspect bomb threats easily; **unmanned drones** and **remote robots** can aid patrol in ways and areas that police personnel cannot easily patrol. (ii) Police can use **biometrics** which involves using unique biological traits, such as fingerprints, retina scans, and DNA to identify individuals, and it will enable smooth suspect identification. (iii) The police must have **facial recognition** devices that can allow computer technology to relate a photograph with a database of images of known persons to find a match. To make full utilization of this, the police department must first have a database of all the habitual offenders. The main drawback for this method of detecting criminals is that the first time offenders will get away scot-free since there shall be no data on them.

The researcher thereby concludes that technology has a **dominating role** to play in policing. It is a humble endeavour to explore how technology at present is being used by police of the two cities and what more can be used in future to encounter fast striding crime trends. The study promises to be relevant and is a novel approach for students and researchers in the fields of technology, criminology, police science and criminal justice administration.

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Ms. Deblina Majumder has completed her Masters in Law with specialization in Criminal and Security Law in 2015 from KIIT University. She is at present pursuing her doctoral thesis in the area of Criminology and Criminal Justice Administration. Her areas of interest are Criminology Criminal Justice Administration., Criminal Law, and Police Science.

Dr. Arpita Mitra has more than fifteen years of experience in teaching and research. Mitra graduated from Presidency College, Kolkata with Sociology major and stood 2nd from the University of Calcutta. She earned M.A in Sociology with specialization in Sociology of Crime and Deviance in 2000 from University of Calcutta. She worked as a Ph.D research fellow in the Department of Sociology, Jadavpur University and was conferred doctorate in Sociology in 2012. Mitra has more than twenty articles to her credit and has presented papers in several national and international conferences and world congresses. Recently her first book titled "ICTs, Police and Metropolitan Cities: Towards 21st Century Policing in India" has been published. She is at present the Vice President of Research Committee: Deviance and Social Control of the International Sociological Association for a term of four years. She is a member of ISA, ISS, WSV, ISV and ISC.