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Technological Evolution of Indian Policing from Traditional to SMART Technology

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Abstract

India has transformed from ancient times to the present day of SMART policing, along with the transformations in the concept of policing. In ancient India, policing was a community-based affair with leaders and village councils managing it. British colonialism brought a formal police system, codified under the Indian Police Act (1861). After independence, India retained the framework but reformed the structure with democratic principles. The Digital India initiative and other governmental reforms have paved the way for SMART policing by utilizing tools such as AI, big data and surveillance technologies. SMART policing is a multifaceted approach, that served as a key policy initiative driven by the Indian government reforms like Digital India and Modernization of State Police Forces (MPF) schemes. These tools are being introduced to attain efficiency, transparency and public trust. However, issues such as privacy concerns, inadequate training and resistance to change persist. This paper seeks an analysis of police practices in the dimensions of SCOT (Social Construction of Technology) to understand the extent to which societal needs and technological advances have uniformly influenced the different adoption of policing practices. Based on secondary data (case study) extracted from government publications, police records, and historical archives, the study identifies key shifts and assesses the impact of the reform with a view of their implications for future SMART policing in India.

Keywords: Indian Policing System, SCOT, SMART Case Study, SMART Policing, Traditional Policing.

Introduction

Policing in India has a long and difficult history, from the ancient days when the focus was community-centred systems to the advanced era of SMART (Strict, Moral, Alert, Resourceful, and Technologically-Savvy) policing. This crucial transformation is rooted in SMART policing's nature, which operates distinctly as a policy initiative propelled by Digital India (2015) and the broader Modernization of State Police Forces (MFP) scheme, which creates a way for its adoption across India (1). In ancient India, the policing system was decentralized and community participatory. Village councils, known as panchayats, played an important role in maintaining order. These councils resolved disputes and enforced local customs in a participatory arrangement of governance. In the medieval period, particularly during the Mughal Empire, policing turned centralized.

The policing includes a broader social context from which one theorizes changes within policing, as moving towards formalizing social control rather than fragmentation in policing itself (2). British colonial rule implemented many changes affecting the Indian policing systems. The Indian Police Act of 1861 introduced a modern police system based on the British model. This act laid the foundation for a hierarchical police structure with command-and-control mechanisms, widely regarded as oppressive, offering scant protection to gazetted officers, and serving colonial interests rather than public welfare. More importantly, the police during this time were used against the masses to crush dissent and retain British rule, thereby creating a fertile ground for mistrust between the public and the police.

After gaining independence in the year 1947, India continued to take reforms on police apparatus to hilt it on a democratic course. The police development committees, including the National Police Commission (1977-1981) recommended measures for improvement in accountability and reduction of political interference in the working of the force and for instilling of public confidence. Unfortunately, many of these recommendations were not complied with in letter and spirit, weake-

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ning further the workings of the police. Shifting from years, technological advancement is bringing exemplary change into Indian policing. The Digital India initiatives, put forward in 2015, have been a major propellant in this direction. SMART policing is the implementation of digital technologies and the data-driven paradigm to enhance operational effectiveness and public safety. It embraces technological advancements in modern law enforcement. Predictive analytics tools forecast incidents and provide effective resource allocations. The application of digital surveillance creates room for massive use of CCTV (Closed-Circuit Television) cameras and drones, which improve monitoring of crime incidences. Facial recognition helps identify suspects and solves cases, while Geographic Information System (GIS) helps map crime hotspots and patrol routes. Mobile applications empower citizens by giving them a chance to report crimes and see follow-up statuses of their complaints. It involves automated digital record-keeping systems, thus streamlining the process of data storage and analysis, which enables instant decision-making.

Like other technologies, such as Artificial Intelligence (AI) and Machine Learning (ML), they contribute toward crime prediction, threat prediction and operations planning. Technological advancement had changed police practices. Predictive police technologies supported by an installed surveillance system prevent crimes before they can be committed. The availability of applications and services online helps engage citizens in police activities. Data-based decision-making proves significant in resource allocation, strategic planning and bigger-scale record-keeping. However, there are pitfalls for moving toward SMART policing. The ethical and privacy issues involved in large-scale surveillance have sparked lots of questions within themselves, thus sparking debates on individual rights. Furthermore, cybersecurity also stands to face threats with the advent of technology.

Beyond its policy and technological dimension, SMART policing evolves as an ideology or philosophy that redefines modern Indian law enforcement. SMART policing includes the application of modern technologies, such as use of surveillance cameras and robotics, for better performance of law enforcement agencies. It is supposed to impact outcomes in policing, affect the ethics of possible police brutality and racial bias, and use the objectivity of several technologies to change the face of community-police interaction as well as possibly discourage acts of violence. The study highlights the need for better funding of police towards SMART policing efforts (3).

The paper entitled “Rethinking community policing in International police reform: Examples from Asia” by Kocak, suggests that democratic policing is a very important concept when seen through various frameworks, and these are the contemporary societies where it is very crucial (4). As modelled in the metropolitan of policing, democratic policing subscribes to the ideal of a legal system, whereby the police will be held by the law against arbitrary actions, and thus there would be an adherence to fixed principles in law. Democratic policing invokes a connection between basic human rights and policing activities. Transparency, accountability and trust among the police, the political representatives, and the public could be essential requirements facilitating effective civilian control over the police. A call for the amalgamation of these police within the entire state, as they will work for a collective good, thus enhancing public security. Trust is created through many forms of communication promoting meaningful interactions between the police and the public. Since people’s understanding of democracy changes across generations and through different historical periods, so too must policing practice evolve.

According to Varghese in “Police structure: A comparative study of policing models”, learning from different policing models is essential for strengthening the democratic policing framework of India, as that of inclusive policing, which is public, accountability and transparency orientated, should be a guiding principle (5). British policing models hold police accountable to the public, and its learning comes to India. Like an introduction of Public Complaint Authority (PCA) in India, it is based on that of English model. The incorporation of public oversight in the policing practices was seen in this initiative. The participatory management focus of the UK model is quite contrary to India’s reliance on executive discretion. Community policing, as proposed in the draft Kerala Police Act, clearly shows the need for consultation and engagement with local communities. Learning from global models and

improvising on the same structures within Indian specific context for positive development.

The study "Embryonic principles of policing in ancient India" by Azad, suggests that the idea of policing within ancient India developed from a condition of anomy, where the breakdown of society necessitated the introduction of systems to restore order (6). Such restoration was achieved basically by the social structure of caste and kingship, which also provided the essential framework of governance and societal harmony. The authority of the king was not, however, limited to political power alone because he drew all aspects of his legitimacy from religious beliefs and moral responsibilities that provided him justification for having an authoritative role as the custodian of justice and order in society. The author argues that people would not be made to obey laws through strict enforcement but through social values and ethical norms.

Research Framework

This study employs a qualitative research design, relying more on the secondary data (case studies) derived from the Indian government publications and archives to explore the technological evolution of Indian SMART policing. Secondary data is used over field study, as it offers unparalleled breadth of coverage, opening new pathways for comprehensive examination of SMART policing practices across diverse states in India. These data are collected from the consolidated official data on police applications and websites from the Bureau of Police Research and Development (BPRD). Usage of secondary data provides a crucial historical perspective that enables tracing the policing evolution, which would be challenging to achieve through primary data collection. Accessibility of publicly available data, documents, and reports has also facilitated this study with a robust overview of broad tends and policy implementations.

These are the primary research objectives of this research: To investigate the evolution of SMART policing in India from the past community system in pre-colonial India and the post-independence era, to trace the impact of emerging technologies on contemporary SMART policing practices keeping in view the aspect of SMART policing in the wake of the Digital India initiative and to analyse the suggestions for improving the practice of SMART policing in India through technological, institutional and societal lenses.

This study primarily focuses on these research questions and addresses them: What changes were brought into the Indian police system post-independence, and what reforms have been carried out to address colonial legacies? What impact would technology have on transforming policing practices in India, especially in the context of the Digital India initiative? And what role does the modernization of police forces scheme play in enhancing the infrastructure and capabilities of police organizations?

The detailed elements of SMART policing is displayed in the Figure 1, which illustrates the key components of SMART policing: Technological Framework (emobodies), Enabling Policy Initiatives (based on diverse adoption and funding), and Governance Objectives (government's aim).

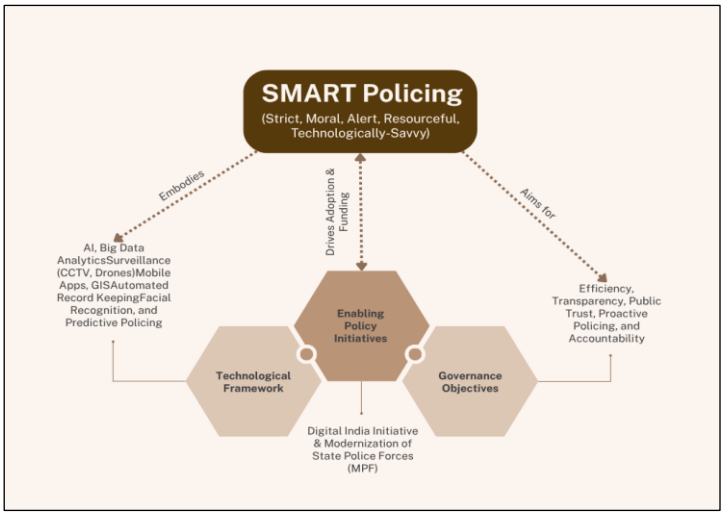

Figure 1: Elements of SMART Policing

Policing in India has transformed considerably over the years, most specifically by integrating technological aspects into it (7). The Digital India initiative and Modernization of Police Forces (MPF) scheme have caused many states to adopt SMART policing initiatives for efficient crime prevention, streamlined law enforcement processes and response to emergencies through efficient digitalisation.

Using SCOT (Social Construction of Technology) theory explained by Trevor Pinch and Wiebe Bijker in the years 1984-1987, this research seeks to investigate the adoption and implication of SMART policing initiatives. The main aspects of SCOT are effective in explaining how different social groups create and conceive the notion of technology in law enforcement. Some of the key components of SCOT in SMART policing applications are as follows:

- Relevant social groups, including police personnel, government agencies, technologists, civil-society organizations and the public, are actually involved in the manufacture and absorption of SMART policing devices.
- Interpretative flexibility that considers surveillance technology as a tool for crime prevention, but privacy advocates view it as a potential threat to civil liberties.
- Closure and stabilization over technology adoption. One such case is the acceptance of cameras after privacy has been addressed in the closure of technological innovations.
- Common understanding and beliefs with regard to how a given technology should function and operate in a technological frame. Thus, imaging and predictive analytics are framed in terms of success and failure by the public and the police.

Using SCOT to read the development of SMART policing in India, this study emphasizes the importance of weighing technology against ethics, society and privacy. It further shows the need for the technology that serves society as a whole in realizing safer, more accountable and transparent policing practices.

Case Study Analysis

Several case studies were adopted for the study that highlights the evolution and adoption of SMART policing technologies in India. The study considers Telangana Police – Hawk Eye App, Punjab Police – AI and Big Data Analytics, Delhi Police – Crime Mapping, Analytics and Predictive System (CMAPS), Karnataka Police – Automated Facial Recognition System (AFRS), Maharashtra Police – Integrated Traffic Management System (ITMS), Gujarat Police – Cyber Crime Prevention, Tamil Nadu Police – e-FIR System, Rajasthan Police – Dial 100 Emergency Response System, Kerala Police – Janamaithri Suraksha Project, and Andhra Pradesh Police – Real Time Governance (RTG) Center.

Telangana Police – Hawk Eye App

The Hawk Eye app of Telangana police is an outstanding example of an effective application of technology in SMART policing for even more effective crime prevention (8). The app has several features for users, such as instant reporting of crimes in progress, registration and tracking of already reported complaints, provision of emergency assistance through direct contact with police, tracking of location and reporting of traffic violations. The app development has affected various stakeholders, from citizens, law enforcement officers, and civil rights activists to software developers, whose perception is based on the adoption and evolution of the same (9). The app supports the police in making the service more transparent and accountable, while citizens will view it as a tool for empowerment and safety to establish prevention and control measures to ensure a high level of public safety. However, many changes that are functional and experiential improvements were made due to user input that have made it stand taller than most other police SMART policing initiatives (10). The app, by enabling citizen-police engagement in real time, creates new expectations of police responsiveness and accessibility while showcasing potential technology.

Punjab Police – AI and Big Data Analytics

The Punjab police has incorporated AI and Big Data Analytics into predicting criminal incidents in the future by analysing the pattern of historical data (7). Such developments contribute significantly to enhance the investigative efficiency and decision-making processes. With vast crime records, AI provides an eye-opener in directed SMART policing that allows the ability to go for proactive crime prevention and optimization of resources.

This initiative affects socially all the social groups, from law enforcement agencies to government technologists. Accordingly, policies and transparency measures are laid to ensure ethical usage of Artificial Intelligence while protecting citizen rights. The AI-based approach is an example of a technological frame redefining traditional policing toward data-driven decision-making and more proactive crime prevention strategies.

Delhi Police – Crime Mapping, Analytics and Predictive System (CMAPS)

The process to track crime patterns using geospatial and temporal analysis, which enables the effective allocation of personnel and resources with the Crime Mapping, Analytics and Predictive System (CMAPS) of the Delhi police (11). The integration of the crime database with AI analytics will provide real-time crime heat maps, making law enforcement speeder and better informed. It includes several categories of social groups, such as police, policymakers, data scientists and human rights advocates. While there are many praises for the effectiveness of crime responses, there are always questions on possible biases in interpreting data and furthering practices of SMART policing. The government-initiated measures for refining AI and outreach programmes within communities to increase the accuracy and transparency of the system. CMAPS is really an example of a technological frame that empowers law enforcement agencies to operate in adapting to change from fighting crime in an old style through information on real-time crime trends and risk assessment. CMAPS embodies a technological frame whereby law enforcement agencies possess an empowerment that gives the real-time trends of the crime as well as its risk assessment data and changes a traditional way of fighting crime to a data-driven model of predictive policing which gives smarter and strategic operations.

Karnataka Police – Automated Facial Recognition System (AFRS)

The Karnataka police have already started taking the Automated Facial Recognition System (AFRS) in their practice to streamline their work and create AI-based facial recognition to help identify the criminals. It would directly cross-reference pictures taken by a particular system with databases of images across the country, helping to identify possible suspects and advance investigative procedures. Different people, therefore, are affected by this initiative, such as law enforcement agencies, the judiciary, civil rights organizations and technology firms (12). While this is a great revolutionary tool to make the investigation and identification of suspects very fast, some problems occur, which include privacy violation, wrongful arrests and biased AI algorithms. Solutions have been provided for these problems through ethical AI policies and interventions by humans for the issues of accuracy and fairness. With AI in biometric security, the future of police practices in Karnataka can now be regarded as a significant leap towards modernization, as it is easy, fast, and accurate processing of identity verification.

Maharashtra Police – Integrated Traffic Management System (ITMS)

The Maharashtra Integrated Traffic Management System (ITMS) is a much-debated project which is extending itself to intelligent surveillance monitoring as automated traffic management and will include AI-enabled vehicles for Maharashtra traffic. The concepts behind it are satisfying the needs of the stakeholders and transportation authority officials who will serve the needs itself in traffic flow, safety on the road, and congestion reduction (13). Catalogued under benefits are the issues of privacy and data security for system malfunctions, as they show the interpretative flexibility of the ITMS. Therefore, continuous manpower-empowering monitoring systems incorporate adaptive AI learning and citizen feedback mechanisms that make the system operate in real-time to modern-day traffic conditions.

Gujarat Police – Cyber Crime Prevention

The Gujarat police have a cyber cell for digital fraud, online bullying and data hacking prevention. In some sense, it makes the entire digital environment safer. It covers an extensive spectrum of society. Cybersecurity tech experts, financial institutions and online users. It would protect sensitive data, strengthen cybersecurity and improve it overall. As much as this system seems to act as a deterrent to cyber threats, the shadow of excessive surveillance as well as potential infringement of digital rights over

interpretative flexibility still looms heavily on it. Balanced enforcement has been ensured through awareness campaigns along with strong legal frameworks, which have been directed towards public trust and legal accountability (14). These initiatives, along with this cybersecurity technology at an advanced level, are making their contributions to digital crime detection and prevention; thus, they will add heavily to the capacity of the secure and resilient cyber ecosystem.

Tamil Nadu Police – e-FIR System

The e-FIR service of police in Tamil Nadu allows citizens to file online complaints for all kinds of crimes, thus cutting down procedural delay and simplifying legal processes. This would be a very beneficial welfare initiative for the major societal pillars such as legal professionals, citizens and police through advancement in case registration and accessibility for all. The system is good from the point of view of efficiency, but it raises concerns associated with the possibility of misuse and absence of digital access reflecting its interpretative flexibility (15). Therefore, securing verification mechanisms and outreach programmes has been established digitally so as to keep both reliability and inclusions. As a part of the digital framework, the e-FIR makes crime documentation more efficient, thereby improving law enforcement output and responsiveness.

Rajasthan Police – Dial 100 Emergency Response System

The Rajasthan emergency response system is instrumental in ensuring that the police respond to distress calls much faster, thus improving public safety. It is realised through tracking real-time emergency calls that enable the rapid response of law enforcement to incidents so that delays are minimised and security is increased (16). It is really beneficial to emergency responders, civilians and law enforcement agencies for a more effective crisis management framework. However, there are some challenges, such as technical problems and telecommunication cuts, which can threaten its proper functioning with prompt actions. Rajasthan's emergency response mechanism is continuously developing with its rigorous incorporation of modern technology for tracking and communication to further weight the balance in modern policing and public safety management.

Kerala Police – Janamaithri Suraksha Project

The community policing initiative in Kerala creates a stronger relationship between the police and citizens, enabling them to act in a direct contact and trust-building manner for preventive ends such as crime, involving participatory policing and collective security activities. The model truly benefits the community, law enforcement agencies and social activists at large. Although it has worked to earn public trust, sustainability of the benefits depends on continuing institutional and policy support for broad implementation (17). With this move, Kerala has set the trend for the future towards an inclusive, transparent and citizen-centric law enforcement.

Andhra Pradesh Police – Real Time Governance (RTG) Centre

The Real Time Governance (RTG) Centre integrates all artificial intelligence and data analytics to monitor activities on police enforcement so that decisions can be quick and informed. There is an efficient operation and proactive governance action deemed beneficial to government officials, agencies, data analysts, and citizens (18). Besides streamlining the police machine and improving responsiveness, the system grapples with issues involving privacy and surveillance. By integrating AI-empowered analytics into governance, the RTG centre plays a vital role in modernizing law enforcement and in executing policies across governance levels.

Table 1: State/ UT Wise Police Apps for Citizens States/UTs

S. No	States/UTs	Number of Police Apps for Citizens	Name of Police Apps for Citizens
1	Andhra Pradesh	6	Locked House Monitoring System AP Police e-Challan App Disha SOS App AP Police Seva App 112 India

			ACB corruption
2	Arunachal Pradesh	0	0
3	Assam	2	Assam Citizen Portal Drugs Free Assam
4	Bihar	1	Bihar Police Helpline
5	Chhattisgarh	4	CG-COP 112 India CG Dial 112 Citizen App Abhivyakti
6	Goa	0	NA
7	Gujarat	9	Domestic Servant Registration Driver Registration E-Application Non Objection Certificate Police Verification Certificate Missing Person Search Missing Property Search Senior Citizen Registration Tenant Registration
8	Haryana	1	Durga Shakti App Shakti Button
9	Himachal Pradesh	5	ESSR (Emergency Response Support System) Crime Free Himachal Drug Free Himachal HP Police
10	Jharkhand	1	Shakti App
11	Karnataka	7	KSP App Suraksha Namma 100 Know Your Police Station Public Eye LHMS 112 App
12	Kerala	1	Pol-App (Official Mobile App of Kerala Police)
13	Madhya Pradesh	3	MP e-Cop 112 India Apat App
14	Maharashtra	3	M-Passport Dial-112 Apat App M-Passport
14	Maharashtra	3	Dial 112 Washim-S.E.V.A
15	Manipur	0	NA
16	Meghalaya	2	Meghalaya Police Citizen Apps Megcop Watch
17	Mizoram	1	Mizoram Safety App
18	Nagaland	1	CUG (Closed User Group)/ Call Your Cop (Nagaland)

			Complaint Character Certificate Request Event/Performance Request
19	Odisha	7	Protest/Strike Request Procession Request FIR Copy Request Sahayata PP Saanjh
20	Punjab	3	Know your Police Shakti
21	Rajasthan	1	RajCop Citizen
22	Sikkim	0	0
23	Tamil Nadu	2	TN Police Citizens Services Kavalan www.tspolice.gov.in
24	Telangana	3	Hawk eye Traffic Live
25	Tripura	1	112 India Mobile App
26	Uttar Pradesh	0	NA
27	Uttarakhand	4	Dev Bhumi App Public Eye App Gaura Shakti App 112 India Mobile App
28	West Bengal	14	Bondhu Abhaya Sandhan Parhori Astha Prapti R T Apps Bharosa Alor Pathe Suraksha Police Sampark Gangasagar Mela Sahotya Bipol Sanjog
29	A and N Islands	0	NA
30	Chandigarh	1	E-Sathi Chandigarh Police
31	Dadra and Nagar Haveli and Daman and Diu	1	DDDP Suraksha App
32	Delhi	10	Lost Report Himmat Plus App MV Theft Property Theft App Traffic Violations Senior Citizen App Himmat App Police Clearence Certificate Character Verification Report

33	Jammu and Kashmir	6	Tatpar App JK Police News App JKPS Women Safety App Suvidha JK Police Katra Police App Avtar Sahulat
34	Ladakh	0	0
35	Lakshadweep	0	0
36	Puducherry	2	MITRA for Women Safety ERSS 112 India

The Table 1, provides the list of total numbers and the names of the police apps that are built for the welfare of the people in different States and Union Territories as of data in 2022, sourced from Data on Police Organisation (as of 01.01.2022) BPRD (19).

Discussion

The transition from traditional policing to SMART policing reflects a significant shift in law enforcement practices. Community policing initiatives, digital efforts like the Modernization of Police Forces (MPF) scheme and digital interventions have helped improve efficiency, transparency and accountability. Reforms such as technology-driven governance, real-time crime tracking and AI-enhanced investigations showcase India's commitment to overcoming colonial policing legacies and ensuring public-centric security measures. These complicated interactions between technology and governance quality were effectively analysed through the SCOT framework, which reveals the successful integration hinges on balancing technological advancements against ethical considerations, societal needs, and privacy concerns.

The introduction of technology has improved the policing in India from crime prevention and investigation to response. As part of the Digital India initiative, having AI analytics, automated facial recognition, cybercrime tracing and real-time governance-based models made law enforcement possible. These digital tools, in addition to crime mapping, predictive policing, and e-FIR systems, improve efficiency and citizen engagement. It enabled better surveillance and evidence collection, which further enhanced inter-departmental coordination. However, there are always challenges such as data privacy issues, ethical AI use, and digital literacy among law enforcement agencies, whose redressal is required to ensure a long-standing adoption of the technology. Apart from these operational enhancements, several technological advancements are fundamental in reshaping governance quality within Indian policing systems. SMART policing initiatives like the e-FIR system in Tamil Nadu streamlines the legal process by shortening police procedural delays and making crime reporting more accessible and easier for citizens. This direct digital policing initiative contributes to a wider range of policing transparency, as it allows citizens to openly track their complaint statuses, which is a remarkable improvement over traditional manual FIR record-keeping. The real-time monitoring and data analytical advancement observed within Delhi Police's CMAPS and Andra Pradesh Police's RTG Centre provides speedy law enforcement through its crime trends and resource deployment features. This data-driven decision-making would enhance the citizens accountability to create a crime-free nation. The Maharashtra ITMS exemplifies the usage of automation (AI-supported) in monitoring and improving road safety, as it directly contributed to the public welfare and efficient governance of urban mobility.

The Modernization of State Police Forces (MPF) scheme has been instrumental in modernizing police infrastructures by vital funding in areas such as critical training, technology and infrastructures. It will support the acquiring of modern arms, modern surveillance tools, forensic equipment and modern AI crime analysis systems, similar to the 'body-worn system' camera in the US, where cameras are fit on the chest of police, which acts as a crime surveillance (20). It will also create SMART policing through automated crime tracing, biometric verification and traffic management systems. The MPF has also provided a significant

improvement in capacity building of police personnel through digital training programmes capable of enhancing their competencies to use modern technology for effective law enactment. It is thus important to ensure that the regulatory frameworks are strengthened and that ethical technology use maximizes the impact of the scheme.

India's traditional policing framework could be described as reactive. It revolved around manual crime records and physical verification. While these earlier methods were very useful, delayed detection of crime and slower response times often resulted from the requirement of human intervention and heavier manpower. However, in the face of SMART policing-motivated initiatives at the Digital India end, law enforcement is undergoing transformation to that of intelligence- and technology-driven policing.

Major components of SMART policing were the establishment of digital surveillance; monitoring and tracking of criminals by Artificial Intelligence; automating crime detection systems; responsive governance; and transparent enforcement. Such reforms have indeed contributed in big measure to better public safety, increased accountability and improved police functions (21). For example, reporting of crimes is no longer confined to the bricks and mortar of police stations but extends to the e-FIR system and mobile applications. From the collection of physical evidence, investigations have moved to more digital evidence processes and AI-driven analytics. Now, real-time monitoring, in addition to patrolling, becomes part of crime prevention.

Aided by AI-driven surveillance and predictive analysis, there appear to be reductions in crime rates in urban locations. With it, police forces could also use those data-driven insights for proactively identifying crime spots, which will prevent it even before it develops. Applications in this aspect include Hawk Eye App and Crime Mapping Analytics for real-time reporting and fast response (22). Implementation by Maharashtra police of bringing the Integrated Traffic Management System (ITMS) automation into control traffic management in urban areas has improved mobility in the cities through automated systems. AI-powered monitoring alone has refined law enforcement's traffic violation tracking in automation and brings much betterment to road congestion and safety. Gujarat police have formed their way towards enhancing cyber security through this Cyber Crime Prevention Programme since it establishes measures against various digital frauds, online harassment and financial scams. AI detection tools have considerably improved response time to cyber threats, thus ensuring better digital safety for individuals and institutions (23). The e-FIR system in Tamil Nadu has also removed undue delays in the process, thereby making the legal systems more accessible and allowing people to track cases digitally.

The deployment of AI-driven surveillance, like in the case of Karnataka's Automated Facial Recognition System (AFRS), has raised mass surveillance, and with it, will raise future possibilities for data leakage. The widespread view among citizens nowadays is about the manipulation of most personal data by law enforcement agencies. Such online services of police, while mostly availed of by urban areas, leave a considerable number of rural and underserved communities without this digital facility for reporting crime (24). The limited spread of the internet and the absence of technological infrastructure bar the ways to online FIR registration and mobile policing, creating burdens of discrimination on the issues of accessible law enactment.

In addition to having significantly reduced response times by the police, Rajasthan's Dial 100 Emergency Response System has extended its wings into advanced emergency responses. AI-driven governance increases the optimisation of resource deployment, thus allowing respondents quick responses on priority alerts - a feature of the newly established systems (25). Programs like Janamaithri Suraksha hugely boost relations between police and citizens and therefore build greater credibility and trust.

Andhra Pradesh has developed a Real-Time Governance centre where they have been using Artificial Intelligence for public safety governance (26). The decision-making relies on data, which assist and increase the accountability of the police operations. It rejuvenated Indian law enforcement into a more proactive structure with a more citizen-friendly and transparent nature with the complete integration of AI, real-time data analytics and digital platforms in SMART policing practices.

These technological advancements of SMART policing offer unprecedented opportunities for efficiency and proactive crime management, which is crucial to weigh the above advantages against significant drawbacks and their potential for misuse. Automated Facial Recognition Systems (AFRS) and predictive analytics holds inherent risks, though they are capable of easing investigations and forecasting criminal records. Implementation of large-scale surveillance leads to concerns based on data privacy and individual rights, which potentially leads to an eroding of public trust if not managed ethically. The reliance on predictive algorithms can inadvertently amplify existing societal inequalities, leading to disproportionate policing of certain communities. These challenges can only be addressed through proper ethical application and robust oversight with clear SMART policing policies and regulatory frameworks.

Conclusion

The shift from traditional policing into SMART policing can spell a revolution in the Indian law enforcement system. The basic features that are associated with traditional policing - human intervention, physical evidence collection and slower response time - would now be replaced by AI-based tools, predictive analytics and real-time governance for proactive crime management. With the help of AI and big data, the investigations have been computerized, and traffic management has been resolved here, such as privacy issues, algorithm bias and changes in technology. Enhancing data security laws, giving more training and improving infrastructures will thus help India to exploit the complete powers of digital policing.

Joining the modernizing India will not be without a compromise – an efficient, yet ethical, technology will make shaping a law enforcement system safer and more accountable (27). Integrating AI with human decision-making, along with transparent governance, will shape SMART policing and truly redefine the way law enforcement functions for many years into the future, resulting in greater public trust and efficiency. While India surfs through SMART policing, it still hinges on addressing critical limitations in terms of human capital and institutional readiness due to inadequate training and diverse digital literacy among law enforcers and citizens (28). Furthermore, institutional readiness requires reliable technological advancements, especially in rural areas, to bridge the existing digital divide and ensure fair access to SMART policing tools. Beyond technical advancements, there is an important need for an updated legal and regulatory framework that focuses particularly on digital governance, digital evidence, data privacy, and ethical usage of AI in law enforcement.

The citizen has now become part of policing through digital communities. Response times have drastically improved, and monitoring has moved from simple CCTV and human monitoring to AI and cyber tracking. Thus, overall changes made, the adoption of SMART policing has modernized law enforcement. The entire process has indeed made the law enactment proactive, efficient and user-centric.

Recommendations for Future Research

A multi-pronged strategy that would range from strong policy reforms and technological advancements to community mobilization is what India would need to do in order to overcome the challenges posed by digital policing. These recommendations are suggested to address the distinct roles of federal authorities and state police departments.

The central government has to prioritize the enactment and enforcement of comprehensive data protection policy laws to prevent dangerous data exploitation. These data protection laws will help in establishing clear guidelines for AI integration in surveillance and data collection, which will ensure accountability and prevention of data misuse, which must be an immediate implementation. This includes the reformation of national policy frameworks for the ethical and accountable usage of AI in policing, particularly to address algorithmic bias and transparency, as a part of immediate implementation. Similarly, the central government must continue to fund infrastructural development, acquisition of modern surveillance tools, and advanced AI crime detection systems.

The state police departments should implement mandatory and continuous SMART policing training programmes (campaigns, workshops and local awareness programmes) for all personnel and citizens equally to ensure a smoother transition from traditional to digital (AI) policing. This initiative will close the gap of digital

inequality (digital divide) between the rural and urban areas, which will be a long-term, systematic change.

The collaborative effort of the federal and state is crucial for simplifying digital crime records, policing processes, and accelerating the delivery of justice. Both governments must create responsible and ethical review mechanisms that will foster continuous public engagement in SMART policing tools. This collaboration can also ensure unequivocally fair and moral usage of SMART policing data by preventing bias and enhancing transparency and independent public accountability.

Abbreviations

AFRS: Automated Facial Recognition System, AI: Artificial Intelligence, CCTV: Closed-Circuit Television, CMAPS: Crime Mapping, Analytics, and Predictive System, e-FIR: Electronic First Information Report, GIS: Geographic Information System, ITMS: Intelligent Traffic Management System, JKecop: Jammu and Kashmir e-Cop Mobile Application, ML: Machine Learning, MPF: Modernization of State Police Forces, PCA: Public Complaint Authority, RTG: Real Time Governance, SCOT: Social Construction of Technology, SMART: Strict, Moral, Alert, Resourceful, Technologically-Savvy (SMART Policing), UK: United Kingdom.

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Author Contributions

Siddharth Mahajan: Research conceptualization, data collection, drafting the research paper, Rouchi Chaudhary: Guiding, reviewing the article, conducting validation.

Conflict of Interest

The authors have no conflict of interest to declare. Both the authors mutually accept the publication and transfer of copyrights.

Ethics Approval

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