

Article Info

Received: 25 Mar 2022 | Revised Submission: 25 May 2022 | Accepted: 04 Jun 2022 | Available Online: 15 Jun 2022

Development of Scientific Techniques in Investigation of Criminal Cases in India

Udayakumar V. and Simranjeet Kaur Gill***

ABSTRACT

Solving crime is a major task to the investigators and it is also considered as a serious business. Successful investigation as well as prosecutions contributes to public safety to a great extent by incapacitating violent criminals. In doing so, people build confidence in our criminal judicial system. Whenever, investigation fails, the offenders remain free and therefore, the public is at risk of harm by the offenders. Similarly if innocent person was arrested and convicted, it will be horrible injustice done to that person which causes reputation of criminal justice system. To solve this problem, it is the forensic science, which plays an important role in criminal investigation of crime cases. The scientific method of investigation helps the courts to reach at logical conclusion of an offence. Tremendous scientific and technological developments have been made in India during the last century and also intensified in the 21st century. The 20th century is often called as the age of science. Many scientific Institutions came into exist in India at the beginning of 20th Century and the flow is continued till now. Various scientific technologies such as fingerprinting, DNA profiling ,Narco-analysis, Polygraph, Brain Mapping, Electronic surveillance, Computer forensics etc. are being used by the investigating officers to bring out the real facts of the case. At present, the Government has created a lot of forensic facilities for the disposal of cases in timely manner through scientific investigation. This paper aims to explore the use of scientific and modern technologies in criminal investigation and how it helps to keep law and order in our society. It also discusses the problems in investigation, contemporary sciences and the essentialities of forensics in India.

Keywords: *Criminal judicial system; Forensic science; Scientific investigation.*

1.0 Introduction

Forensic science is considered as the pivotal to the working of the Criminal Justice System and the operation of the rule of law. It has a nexus with science, policy and investigation and therefore, it applies scientific methods to the recovery, analysis, and interpretation of relevant materials and data in criminal investigations and in court proceedings. Forensic Science may be defined as “the application of Science to those Criminal and Civil laws that are enforced by Police agencies in a Criminal Justice System” According to John. C. Brenner, forensic is the “analysis of information suitable for use in court of law and forensic science as the application of scientific facts to legal problems.” Dr, Saferstein defined it as the application of science to those criminal and civil laws that are enforced by the

investigation agencies.in a criminal justice system. Jay. A. Siegel and Kathy Mirakovits (2010) suggested that any science can be a forensic science if it has the application to justice.

The present scenario of India in criminal investigation is not satisfactory. Reporting of crime increases day by day, but the remedial measures taken by the State to prevent the crime is yet to be succeeded. The conviction rate in criminal cases is also in pathetic stage. State is the authority to create a crime-free atmosphere by preventing crimes and punishing the offenders. The Government enforces the security system in the State through the Police. It is the duty of the Police to check the increase of crime by tracing the accused persons and imprison them. Tracing and arrest of accused persons is not an easy task for the Police. This being carried out by the Police by way of Criminal investigation.

*Corresponding author; School of Law, CT University, Ludhiana, Punjab, India (E-mail: udayk6134@gmail.com)

**School of Law, C T University, Ludhiana, Punjab, India (E-mail: principalsol@ctuniversity.in)

2.0 The Present Scenario of Criminal Investigation in India

The main objectives of the criminal justice system are as follows:

1. Prevention of crime occurrence.
2. Punishment of transgressors and the criminals.
3. Rehabilitation of the transgressors and criminals.
4. Compensation of the victims as far as possible.
5. Maintain law and order in the society.
6. Discourage the offenders from committing crime in the future.

India is a democratic country, here, the system of governance is based on the concept of 'Rule of law' which means the law is the supreme authority, all are equal and justice is to be achieved through it. Moreover, the law should be purposeful, welfare oriented to the public, unambiguous and practicable. If the law is made in an autocratic manner, without considering the welfare of the society, it will cause inconvenience to the society and also cause irritation to the people. It is the responsibility of the legislators to make the law in a well-defined manner and sound in all aspects. But the position of Indian law is not satisfactory. The safety and liberty of the people in country is mainly depending upon the laws of the land and the Constitution. But in practical the decision of legislators as well as the court remain only in paper and there is no effective Police to enforce the law. As a law enforcement agency, the function of the Police is to preserve and protection of the very basic needs of human survival and sound intercourse. The basis of the Indian Criminal Justice system is to conduct the investigation to unveil the truth of an offence.

3.0 Criminal Investigator and Scene of Crime

The word investigation is coined by the term 'investigare' which means "to trace out or search into." The duty of a Criminal Investigator is to bring out real unvarnished truth of a crime. According to Richard H. Ward "The primary function of the criminal investigator is to gather information, determine the validity of the information, identify and locate the perpetrator of the crime and provide evidence of his guilt before a Court of Law. It is an intelligent duty but laborious and pains taking processes. An investigating officer must have some basic and inherent talent to trace out the culprits. If

he is not having such quality he should have achieved it by training and practices. When a crime case is reported in Police Station, the investigating officer should visit the scene of crime immediately after registering FIR. A crime scene is the most important place for an investigating officer. A scene of occurrence may be any place that provides vital evidence to link a crime with the criminal. This may be a building, a vehicle, a human body, a water body or an open space where physical evidences related to a crime are located. The persons involved in the crime exchange traces *inter se* with the crime scene and leave odds and ends such as wearing apparels, tyre-marks, finger print, foot print, traces of various body parts etc. As the crime scene is the best source of evidence, it should be protected safely till the examination and collection of evidence by the Forensic Experts is completed.

4.0 Forensic Experts and Criminal Investigation

Forensic science is considered as the most important to the working of the Criminal Justice System and for the operation of the rule of law It is used in solving various types of crimes such as rape, murder, forgery, accident related incidents, theft, robbery, dacoity etc. Whenever an offence is reported, the Forensic team visits the scene of crime immediately and examines the surroundings and collects materials as evidence. They have to solve the questions related to crime as:

- a) Is the incident occurred a really a crime? If so, where is the *corpus delicti*?
- b) Who committed the crime and what is the motive behind it?
- c) Who is/are the victim(s)/culprit(s)/witness(s)?
- d) When and where is the crime occurred?
- e) How the crime occurred and what was the *modus operandi*?
- f) Whether various pieces of evidence (physical/circumstantial including scientific evidence, eyewitnesses or statement of culprits) collected from the scene of crime?

To solve these questions, there are many scientific experts such as Field Officers, Lab Officers, Crime Scene Investigator, Latent print/Fingerprint Examiner, Firearms Examiner, Tool mark examiner, Document examiner, Trace evidence examiner, Forensic Pathologist, Forensic Anthropologist, Forensic Odontologist, Forensic

Entomologist etc., which forms part of investigating team and each expert is entrusted with specific area of work.

Two main pillars of forensic science are multi-professional and multi-disciplinary. For the application of forensic science and proper distribution of justice, the forensic scientist depend upon investigating officer on one hand and legal counsel who present the case in the court and the judge who decide the cases in the court are on the other hand. The investigating officer must be a specialist in the field of collecting evidence and the judge and the prosecutor should have the knowledge of science so as to correlate the scientific evidence with the rest of evidence.

5.0 Need of Forensic Science in Criminal Investigation

In many criminal cases such as murder, attempt to murder, rape, theft, narcotic drugs, abkari and arson cases scientific evidence is essential to prosecute a criminal. The delivery of justice depends on the integrity and accuracy of that evidence, and the trust that society has in it. In the Criminal Justice System, there is an urgent need for a widespread application of forensic science. The present scenario of crime investigation and prosecution of criminals in India is in a tragic state. In many heinous crimes, a large percentage of the trials ended in acquittals due to lack of scientific evidence. It is estimated that the prosecution agency spends lakhs of rupees on each trial. Not only does a dangerous criminal go out free but a huge amount of public-money is also wasted. These frequent acquittals also strengthen the criminals and result in a soar of the crime rate and the multiplication of criminals.

6.0 Developments in Indian Courts in Deciding Cases on Application of Forensic Techniques

The case *Bazari Hajam Vs King Emperor* AIR 1922 Pat 73:23 Cr L. J. 638 was related to an appeal filed by Bazari Hajam and Barbmdeo Kader who were convicted three years rigorous imprisonment for false impersonation based on the report from Finger Print Criminal Department. But the appellate court rejected the contention of the prosecution and stated that the circumstances to convict a person of a serious crime entirely upon similarity of thumb marks cannot be considered.

The court did not accepted the foot prints of accused person as evidence in *Din Muhammed Vs. Emperor Central Provinces Police Gazette* as the study of foot prints was not considered as a Science. But in *Pritam Singh Vs State of Punjab* AIR 1956 SC 415, it was observed that the science of identification by the foot prints is a rudimentary science. In *Harpal Singh Vs State of HP*, the age of the girl was ascertained by scientific techniques i.e. the medical test was corroborated with the school records and birth certificate.

The *Tandoor murder case* (1995) Delhi was solved with the help of forensic science. The case is that Sushil Varma murdered his wife with gun and brought her to his restaurant named Bhagiya and attempted to burn her in Tandoor with the help of the Manager of his restaurant. Later, the Police recovered Sharma's revolver, blood-stained clothes and also identified his wife by DNA profiling. According to DNA report, the charred body is that of Naina Sahni, who was the biological offspring of Mr.Harbhajan Singh and Jaswanth Kaur, her parents.

One of the most controversial cases reported from Kerala was *Sister Abhaya's murder case*. The case is that Sr. Abhaya, aged 19 years was found dead at the convent hostel's well in Kottayam, Kerala. After a period of 20 years of investigation, the CBI arrested the accused Father Thomas Kottoor and Sister Sephy for committing murder. On 22nd December 2020, the court sentenced both them for life imprisonment. Here, the version of an eyewitness was the turning point of the case. In addition to the eye witness, gynecological test conducted on Sr. Sephy to prove her sex relationship with others. Narco analysis test were also conducted to prove the involvement of accused. Here, scientific investigation has played a vital role for convicting the accused persons.

In *Smt. Selvi & Others Vs State of Karnataka*, the Supreme Court held that the compulsory administration of impugned techniques violated the right against self-incrimination. The test results cannot be admitted if they have been obtained through the use of compulsion. During the verdict of case, the court also opined that "a person to the impugned techniques in an involuntary manner violates the prescribed boundaries of privacy." The Supreme Court has finally settled the conflicts regarding impugned techniques such as Narco analysis, Brain mapping and Polygraph test by

stating as “cruel, inhuman and degrading treatment”. The court also contented that right to self-incrimination is available to a person during investigation as well as in trial stage. Even though there is no express provision for the admissibility for the techniques like Narco analysis, Brain mapping etc., and the court settled the case subject to the condition that prior consent of the accused or the suspect is necessary for undergoing these tests.

7.0 Development of Forensic Institutions

The application of Forensic Science in investigation of criminal cases started in India in 1897 with the establishment of first Central Fingerprint Bureau of India started in Kolkata. Thereafter, several FSLs under State and Central Government have been established in various parts of the Country. However, some of the Institutions were started in India before that.

- The first Chemical Laboratory was established at the then Madras presidency during 1849. Thereafter, similar laboratories established at Calcutta in 1853, Agra in 1864 and in Bombay in 1870.
- Anthropometric Bureau for maintaining Bertillon’s system of personal identification details of criminals was established at Calcutta in 1892.
- William Herschel was the District Collector in Hooghly District in Bengal introduced thumb impressions of native of contractors. Later in 1897 the first Finger Print Bureau was established at Kolkata with Edward Richard Henry at Kolkata.
- The first Department of Explosive was established at Nagpur in 1898. Later regional offices at Calcutta, Agra, Bombay, Gwalior and Madras were opened.
- The first Government Examiner of Questioned Document was established at Shimla in 1906 for identifying the handwriting on certain secret documents.
- Realizing the importance of blood and seminal stains examinations in India, Serology Department was set up in 1910 at Kolkata. Later, after independence, this was renamed as Office of the Serologist and Chemical Examiner to the Govt. of India.

- To identify the criminals through foot prints examination from the crime scene, a foot print section was established at West Bengal under Crime Investigation Department. In 1917, a Note Forgery Section was set up under CID, Govt. of Bengal.
- A Ballistic Laboratory for the examination of fire arms was set up in 1930 under Kolkata Police. Similarly, a scientific section for examination of bullets, fire arms, cartridges etc., used for committing crime were set up under this institution.
- In 1952, the first Forensic Science Laboratory was established at Kolkata.
- The first Central Finger Print Bureau was established at Shimla in 1905.
- During 1956, Central Detective Training School (CDTS) was established at Kolkata during 1957. Later in 1965 second CFSL was also established at Hyderabad.
- Central Forensic Institute was set up at Calcutta with the establishment of CDTS & CFSL.

Presently, there are 37 State and 7 Central Forensic Science Laboratories and 29 Finger Bureaux are functioning in the country. In addition to these, several regional laboratories and Mobile Laboratories in various districts have been established. Department of Biotechnology under Ministry of Science and Technology established an Advanced Center for DNA Finger Printing and Diagnostics in Hyderabad. DNA profiling facilities in criminal cases are being available in CFSL Hyderabad, CFSL Kolkata and Center for Cellular and Molecular Biology in Hyderabad. In addition to these, some private institutions are also conducting various scientific analysis.

8.0 Important Issues on Forensic Techniques

As per present status, there are 4500 Forensic personnel including nearly 3000 Forensic Scientists are working in various Laboratories in the country. There are many Institutions in the country where various courses of Forensic Science are conducting. But the demands of forensic analysis reports are increasing. Thousands of cases in various courts as well as in Police Stations are pending for want of Forensic analysis/Chemical analysis reports. The numbers of DNA analysis are increasing every year, but the facilities are available in a few laboratories.

Thousands of dead bodies are still remaining to be identified properly due to the lack of facilities. Similarly thousands of cases in determining paternity and identifying the accused persons in criminal cases are waiting for DNA analysis. Facility of DNA profiling, anthropological work pertaining to skeletal analysis, facial superimposition and reconstruction etc., are available in Central and State Laboratories. Even though there are hundreds of Medical Colleges and similar institutions in various parts of the country, these facilities are not available. If these institutions also equipped with these facilities, that will benefit to the Scientific Investigation. Reporting of Cybercrime cases are being increased every year. Involvement of criminals in such activities is also increases. To prevent these Cybercrimes, establishment of Cyber Forensic Laboratories in various parts of India is inevitable.

Due to the lack of training for collection, packaging, preservation and forwarding of materials from the scene of crime, the samples collected cannot be subjected to forensic analysis. This lead to the failure of prosecution cases in the court of law. Lack of research in some areas of Forensic Science, lack of well-defined code of ethics and non-availability of data bases affects adversely to the reliability of forensic evidences. Most of the Forensic Science Laboratories/Chemical Laboratories are under the Government Sector or Police Departments. State FSLs are under the direct control of Home Department of the State. Due to these reasons, the courts as well as people suspect the reports from the FSLs.

At present, in India, there are 7 to 8 lakh of cases are pending for want of forensic science reports from FSLs. Nearly 10% of total cases reported are referred to FSLs in every year. If more cases are referred to FSLs for examination, pendency of cases will be maximum, it will be difficult to dealt with the present system of Forensic Institutions. Reporting of Cybercrimes as well as cases under IT act are increasing rapidly with the increase of Science and Technology.

9.0 Conclusion

The analysis of above presentation reveals that forensic science plays an important role in investigation of Criminal cases in modern era for tracing of the accused and to find the real facts of the

case. As the criminals are using modern technology in committing offences, the Police also equipped with modern technique to prevent such crimes. The present scenario of investigating crimes in India is in a pathetic condition. The rate of conviction is very poor, but reporting of crime cases are increasing day by day. The prosecution spends lakhs of rupees for investigation purposes and trial in a court, but accused in many heinous crime cases were acquitted due to lack of evidence. Not only this causes wastage of public money, but also causes dangerous criminals goes out free. Therefore, investigators should adopt scientific technology for the investigation of crime cases. But the decision of Supreme Court in Selvi Vs State of Karnataka is not in favor to scientific technology. Latest techniques such as Brain mapping, Narco analysis and Polygraph test were not thoroughly considered by the court. If no direct evidence is available, the investigating agency becomes difficult to trace the accused without application of modern techniques. If every tool of the investigation is considered as violation of article 20(3) and 21 of the Constitution of India, the investigation agencies will be forced to accept another option of custodial violence. Hence the court should embrace the scientific techniques in investigation of crime cases.

References

- [1] Saumitra Basu,; *The History of Forensic Science in India* published by Routledge Taylor & Francis.
- [2] John Jayasekhar, A Mapping Indian Forensic Science Research: A Schematic study of Indian Forensic Science Literature during the period 1975 to 2010, (2015).
- [3] Parag Agarwal, Admissibility of Scientific Evidence Under Indian Laws in Criminal Justice System of India.
- [4] James. W. Osterburg & Richard. H. Ward, *Criminal Investigation: A Method for Reconstructing the Past*, (6th edn), anderson publishing.
- [5] B R Sharma, Forensic Science in Criminal Investigation and Trials, (6th edn) 2020.
- [6] Rekha Khandelwall, *The importance of Forensic Science in Criminal Justice*, © 2019 JETIR Vol.6 Issue 2.

- [7] Gowsia Farooq Khan and Sheeba Ahad, *Role of forensic science in criminal investigation: Admissibility in Indian legal system and future perspective*, March 2018 IJARSE. Vol.7, Special Issue No. 04.
- [8] Tewari. R K, Ravikumar. K V (2000), *History and Development in Forensic Science in India*.
- [9] Prachi Kathane, Anshu Singhi, J R Gaur, Kewal Krishnan, *The development, status and future of forensics in India*, Forensic Science International Reports 3 (2021).
- [10] John Jayasekhar, *A Mapping Indian Forensic Science Research: A schematic study of Indian Forensic Science Literature during the period 1975 to 2010*, (2015).