

## Conference Paper

# Scientific Criminal Investigation Legal Studies in the Police Investigation Process

Aprilia Bhirini Slamet<sup>1</sup>, Sumali<sup>1\*</sup>, Cindy Monique<sup>2</sup><sup>1</sup>University Muhammadiyah Malang<sup>2</sup>University of Brawijaya**ORCID**Aprilia Bhirini Slamet: <https://orcid.org/0000-0003-1002-3823>**Abstract.**

Scientific Criminal Investigation can be a method in the investigation process carried out by investigators to prove evidence in proving criminal cases. Process of the Scientific Criminal Investigation method in proving it can minimize errors with fast, precise, and accurate examinations. The investigation process of scientific evidence by investigators also needs to be supported by technical assistance from several branches of forensic science. This study aims to obtain a description of the method of Scientific Criminal Investigation in the disclosure of criminal acts using quantitative methods. The application of the Scientific Criminal Investigation Method in the evidentiary process has a role in uncovering evidence and evidence in criminal cases following the Criminal Procedure Code, namely through letter evidence, instructions, and expert statements. Thus, proving a case using the Scientific Criminal Investigation method is a breakthrough in the evidentiary process of proving a criminal case. In this way, the Scientific Criminal Investigation Method becomes a reference for investigators in the process of proving criminal cases because scientific crime studies are also supported by increasing and sophisticated sciences, including the special tools created.

**Keywords:** scientific criminal investigation, investigation, evidenceCorresponding Author: Sumali;  
email: [sumaliumm@gmail.com](mailto:sumaliumm@gmail.com)

Published: 4 October 2022

Publishing services provided by  
Knowledge E

© Aprilia Bhirini Slamet et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the INCLAR Conference Committee.

## 1. INTRODUCTION

Efforts to create order, security, and peace within the community are one of the efforts to take action after a violation of the law, namely by trying to enforce the law. Article 1 paragraph (3) of the 1945 Constitution of the Republic of Indonesia reads "The State of Indonesia is the State of Law". Thus, this provision is by what is contained in the meaning of government by law, including the values of justice contained therein. In the current era of development and progress in the field of science and technology, in that development, not a few of the results of the impact have a negative impact, therefore with the state of the process for an adjustment that occurs can lead to crime in the form of a criminal act. The law also regulates procedures and procedures for

**OPEN ACCESS**

resolving criminal cases. One of the procedures in the settlement of criminal cases is an investigation. [1]

The right effort in uncovering criminal acts is the evidentiary process, investigators are at the stage of the Indonesian Police, namely efforts to find and collect evidence in the investigation. The proof stage is an effort that plays an important role in the examination process in court. Therefore, it is through this stage of evidence that determines the fate of the defendant, and whether the defendant is released from his sentence. Therefore, in carrying out the evidentiary process, one must be careful, be careful and always be vigilant in assessing and considering the value of evidence.[2]

Aspects in evidence starting from the investigation stage are useful for finding and determining an event that is suspected of being a criminal act and aims to determine the conduct of an investigation. While this investigative process is useful in determining to find and collect evidence, with the evidence it will be easy to make light of a criminal case.

The Scientific Criminal Investigation method is one of the impacts of technological developments that are developing rapidly at this time with criminal cases that are progressing every year. The Scientific Criminal Investigation method has been stated in article 34 and article 35 of the Regulation of the Head of the State Police of the Republic of Indonesia Number 6 of 2019 concerning the investigation of criminal acts. Article 34 states that "Investigators in carrying out criminal investigations are supported by technical assistance in investigations for scientific proof. Thus, the technical assistance for this investigation is included in article 34, namely:[3]

1. Forensic laboratories are used if investigators require examination and testing of evidence that must receive special handling and/or treatment.
2. Identification is used if the investigator requires certainty of the identity of the suspect or witness or non-criminal victim as evidence.
3. A forensic code of conduct is used if an investigator requires examination of a suspect or witness or victim who must receive special physical treatment or treatment.
4. Forensic psychology is used when the investigator requires examination of a suspect or witness or victim who must receive special psychological treatment or treatment and,
5. Digital forensics is used if investigators require examination and testing of digital evidence that must receive special handling and/or treatment.

To be able to tackle criminal crimes that are traditional and modern crimes with advances in science and technology, it is necessary to apply the Scientific Criminal Investigation method, with Scientific Criminal Investigation method used by the Indonesian police in uncovering criminal crime cases by applying science and technology summarized by analysis, criminalistic.[4]

The Scientific Criminal Investigation method is carried out by examining evidence in the management of the crime scene, which is interesting because it takes an important role to be where this method is applied, namely in the forensic laboratory paper. The use of the Scientific Criminal Investigation Method is very easy and useful in helping investigators in terms of proving a crime because not all criminal acts can be revealed easily.

Therefore, as the author has described the background, the author will examine the Legal Study of Scientific Criminal Investigation in the Police Investigation Process.

## 2. METHODOLOGY/ MATERIALS

This writing uses the normative juridical method, which is an approach based on the main legal material by examining theories, concepts, legal principles, and legislation related to this research. In connection with the Scientific Criminal Investigation method in the process of investigating a crime, the authors focus on the nature of normative research, which will be supported by empirical research to obtain more accurate or valid data.

## 3. RESULTS AND DISCUSSIONS

The process of handling criminal cases in the process of all activities from the investigation to the final decision pronounced in front of the trial by the judge is closely related to evidence or can even be said to be an activity to prove. According to Adami Chazawi, although this statement cannot be accepted in its entirety, considering that the evidentiary law that is explicitly stated in the Criminal Procedure Code only focuses on the evidentiary process that occurs at trial, from the phrases shown by the Criminal Procedure Code in the process of handling criminal cases, starting from the investigation. until the investigation is a tiered process and is assessed by the fulfillment of the requirements for evidence activities.[5]

Scientific evidence in the process of investigating criminal cases regarding the most reliable evidence and being a mainstay in the criminal justice process, especially in

the disclosure of criminal cases or even perpetrators in the investigation process.[3] In the evidence system according to forensic science or criminalistic science, it is known that there is evidence of a crime scene triangle (triangle crime scene), namely the link between the victim, the evidence, and the perpetrator. This triangle of evidence is triangle-shaped as a result of the reciprocal relationship (interrelation) between the victim, the perpetrator, and the tools that were in contact with each other at the time of the crime.[6] here's a picture from the Crime Scene Triangle

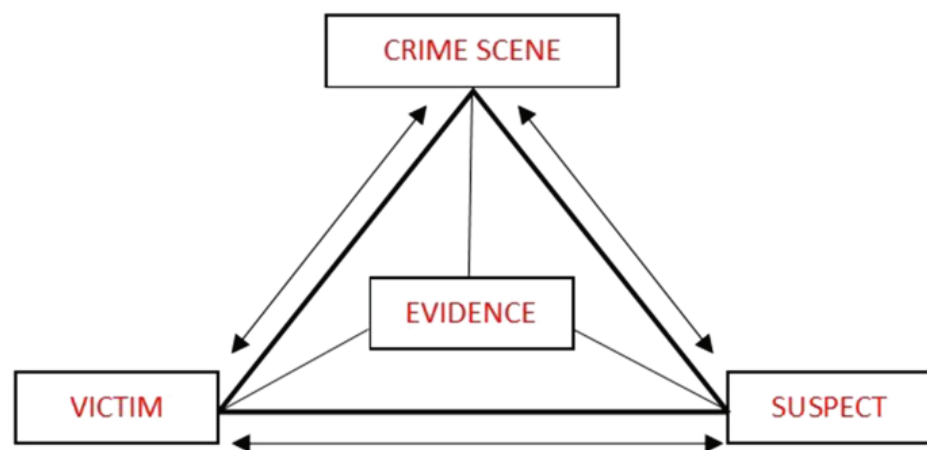


Figure 1

The evidentiary process is a context in which evidence only exists or can be obtained from evidence and evidence. Therefore, harmony and accuracy in the accuracy of the evidence collected and prepared, and assessed by investigators, are very influential on the evidentiary process at trial. In the process of handling criminal cases through the criminal justice process, it can be said that effective and appropriate means are according to the target or by what is expected, accuracy in the results is needed, besides that, it also requires completeness in disclosing facts through the quality of evidence that has been and was presented in court.[7] Therefore, Scientific Criminal Investigation plays a role in making the quality and accuracy of the evidence collected by investigators be delegated in evidence at trial.

The purpose of using this method is to assist in the judicial process, especially in terms of proof, so that evidence that is difficult to find can only be obtained using the ordinary procedural law method. With the use of other methods in finding the evidence, it is hoped that the court can produce the right decision according to the crime level committed, so that the law can be enforced.[8] In addition, its function is to help find material truth, because its application can scientifically provide an overview of an event

that is considered to contain a criminal act. Its role as an effort to solve criminal cases is very large, such as determining the authenticity of writing or document, identifying victims of crime or disasters, and finding suspects for certain crimes.[9] So this can be said with the collaboration of science used in revealing the truth in the evidentiary process. The science that helps the practice and technique of this investigation and prosecution function provides the completeness and fulfillment of the data or evidence needed.[10]

The role of criminalistic science that is applied in Indonesia by referring to terms that are often used in the practice of Scientific Criminal Investigation that develops in other countries.[11] In the Indonesian Criminal Procedure Code, the handling of criminal cases from investigation to evidence is left to law enforcement, therefore the authority is given to summon experts to help uncover crimes as a form of applying the criminalistic method or Scientific Crime Investigation.[12] The Criminal Procedure Code also recognizes several terms in this regard, as in the following articles: Article 7 paragraph (1) that investigators because of their obligations have the authority, one of which is to take fingerprints and take pictures of someone, bring in the necessary experts in connection with the examination of the case. In terms of the objectivity of the trial, the presiding judge of the trial may request expert testimony and may also request that new materials be submitted by the interested parties by article 180 of the Criminal Procedure Code.

Scientific Criminal Investigation is a process to find crimes through techniques and procedures learned through criminalistic science as a scientific investigation and/or criminal investigator using various disciplines known as forensic science.[13] The process with the Science Criminal Investigation method is to identify physical evidence found by investigators so that the results will be useful in the evidentiary agenda at trial as evidence. With the existence of the Scientific Criminal Investigation method, the facts that will be revealed in court are not always purely about legal issues who are experts from law enforcement. But in reality, many legal events are closely related to science outside the law, therefore the Scientific Criminal Investigation method is appropriate and presents the accuracy of the results of the evidence that will be used as evidence in court.

The existence of a Scientific Criminal Investigation carried out by experts in their field is very important in the investigation process so that its role can clarify and strengthen the evidentiary process at trial. Scientific Criminal Investigation is an expert competency needed in the process of handling criminal cases, which depends on the type and level of the regulated crime. For example, regarding the general crime of murder, it is certain to always need experts in conducting criminal investigations through experts who analyze

the cause of death and speculation regarding the death of the victim from the crime of murder. This is very closely related to the evidence that will be found by investigators in the investigation process, which requires expertise from these experts to be able to identify evidence so that it can make light of the existence of a crime and can assist in efforts to find suspects.

So that the relationship between evidence and Scientific Criminal Investigation is the role of Scientific Criminal Investigation which can explain the evidence mentioned above through an investigation with research on evidence by experts so that the accuracy of the evidence produced from this Scientific Criminal Investigation method. can be scientifically guaranteed. In addition, even this evidence can be used as evidence presented at the trial which can function as evidence in the form of letters, instructions, and expert statements which have been explained by Article 184 of the Criminal Procedure Code if presented at the trial together with the submission by the experts.

Regarding Strength in terms of proof of evidence, it is very appropriate when it is discussed through the types of evidence. So that it is clearer how an item can be valuable in evidence. Various kinds of evidence can also be viewed from the type of use in evidence and how to identify them through Scientific Criminal Investigation.[14]

The role of Scientific Criminal Investigation in providing guarantees for the truth value of a piece of evidence is a method of scientific investigation carried out by experts to obtain evidence that supports evidence at trial, scientific examination of physical evidence can provide a high value. More for the material truth in every criminal act whose truth should be revealed immediately.

Scientific Criminal Investigation has many advantages, one of which is:

1. Fast, precise, and accurate examination supported by special tools that have been internationally standardized so that the use of the Scientific Criminal Investigation method is an appropriate step for a fast evidentiary process.
2. Minimize errors in the evidentiary process, so that the Scientific Criminal Investigation process becomes the best process in the evidence process

With the application of the Scientific Criminal Investigation, the disclosure of cases using old methods that used intervention, violence, and so on was abandoned, because it was seen that it was a sadistic and inhuman thing.[15]

In addition, with the application of the Scientific Criminal Investigation method, the examination becomes fast, precise, and accurate. Because it uses special tools that support the examination of evidence or the processing of the crime scene. This scientific

investigation or Scientific Criminal Investigation uses science that develops according to the times.

The application of Scientific Criminal Investigation can also be a reference to reducing or minimizing errors that often occur when processing evidence, such as incomplete data. In addition, the weakness of this method is that many people do not know about Scientific Criminal Investigation, all they know is that the verification process is carried out by the police and their internal examination only knows that the autopsy step is carried out by the doctor.

The concept of the application of the Scientific Criminal Investigation method in criminal evidence is related to the provisions that recognize the strength of proof of the results of the Scientific Criminal Investigation. This concept is needed to be applied as a positive law because it can be understood the lack of regulation regarding Scientific Criminal investigations in Indonesia. After all, in the Criminal Procedure Code the regulation regarding Scientific Criminal Investigation is only generally regarding judicial and judicial medicine that examines fake documents or signatures. Because perhaps one of the reasons is the establishment of the Criminal Procedure Code which has been established since 1981. So this reform needs to be carried out to provide a strong foundation for the application and practice of using the Scientific Criminal Investigation method in the process of handling criminal cases.

#### 4. CONCLUSION AND RECOMMENDATION

The function of the application of Scientific Criminal Investigation is carried out by examining evidence by combining the doctrines contained in criminalistic scholarship, which at first was transformed into evidence, even more so as evidence from expert statements, letters, or instructions. By carrying out investigations using Scientific Criminal Investigation, it can support the independence and impartiality of the judiciary, so that Scientific Criminal Investigation can become a solid piece of evidence and has the strength of its own proof.

Based on the conclusion made above, the recommendations are offered here. In the scientific investigation stage, there is a need for further development to implement Scientific Criminal Investigation and the need to update the existing regulations in criminal procedural law, especially those relating to the law of evidence and scientific-based investigations so that every effort to enforce the law can run by the development of society.

## References

- [1] Prasetyo SN. "DISKRESI DALAM PENYELESAIAN PERKARA PIDANA DI TINGKATAN PENYIDIKAN(Studi di Kepolisian Resort Probolinggo Sektor Banyu Anyar)," Law, 2007, [Online]. Available: [https://scholar.google.com/citations?view\\_op=view\\_citation&hl=id&user=u1JxAdsAAAAJ&citation\\_for\\_view=u1JxAdsAAAAJ:u-x6o8ySG0sC](https://scholar.google.com/citations?view_op=view_citation&hl=id&user=u1JxAdsAAAAJ&citation_for_view=u1JxAdsAAAAJ:u-x6o8ySG0sC)
- [2] Harahap MY. Pembahasan Permasalahan dan Penerapan KUHAP: Pemeriksaan Sidang Pengadilan, Banding, Kasasi, dan Peninjauan Kembali, Cetakan 8. Jakarta: Sinar Grafika, 2006.
- [3] Warman A, Syukri Akub M, Heryani W. "Aditya Warman Efektivitas Penerapan Scientific Crime Investigation Terhadap Pembuktian Dalam Perkara Pidana."
- [4] Wahyuni R. "Peran Laboratorium Forensik Dalam Pengolahan Tempat Kejadian Perkara Dalam Rangka Scientific Crime Investigation (Sci)."
- [5] Chazawi A. Hukum Pembuktian Tindak Pidana Korupsi. Malang: Bayumedia; 2013.
- [6] Sativa R, Tirtayasa Raya No J, Baru K, Selatan J. Scientific Investigation dalam Penyidikan Tindak Pidana Pembunuhan. Volume 15. J. Ilmu Kepol; 2021.
- [7] Setiana DR. Kontribusi Scientific Crime Investigation dalam Proses Penanganan Perkara Pidana. Universitas Brawijaya; 2016.
- [8] Rosa D. Fungsi dan Peran Laboratorium Forensik dalam Mengungkap Sebab-sebab Kematian Korban Tindak Pidana Pembunuhan (Studi pada Laboratorium Forensik Cabang Semarang). Universitas Negeri Saemarang; 2011.
- [9] Indries, Penerapan Ilmu Kedokteran Forensik Dalam Proses Penyidikan. Jakarta: Sagung Seto; 2008.
- [10] Soeparmono R. Keterangan Ahli & Visum et repertum dalam Aspek Hukum Acara Pidana. Bandung: Mandar Maju; 2002.
- [11] Lokas R. "Barang Bukti dan Alat Bukti Berdasarkan Kitab Undang-undang Hukum Acara Pidana," Lex Crim., vol. II/No.3, pp. 45–46, 2013.
- [12] Abdussalam, Forensik. Jakarta: Restu Agung; 2006.
- [13] Barama M. Satu Saksi Bukan Saksi dalam Perkara Pidana. Karya Ilmiah. Manado: Fakultas Hukum Universitas Sam Ratulangi; 2011. pp. 17–8.
- [14] Hariani EE. Prosedur Dasar Penanganan Bukti Digital dalam Computer Crime Computer Related Crime. Manaj. Invetigasi Tindak Krim; 2014.
- [15] A. dan A. L. T. Mun'im, "Penerapan Ilmu Kedokteran Kehakiman dalam Proses Penyidikan Perkara," Karya Unpra, 1982.