

Utilization of Forensic Evidence in the Criminal Justice System

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Abstract. Changes in civilization and technological developments trigger criminal acts that have increasingly complex characteristics and are difficult to solve. Forensic evidence is one of the evidence that can be used to assist law enforcement officers in carrying out their duties, especially in the criminal justice system which is useful in disclosing a crime scientifically. This study aims to examine the concept of using forensic evidence or scientific evidence in an effort to uncover criminal events and how it relates to the criminal justice system. This study uses a normative method with a conceptual approach and an analytical approach to conceptually describe the position of forensic evidence in order to become a material that facilitates the performance of law enforcement in the criminal justice system. The results of the study indicate that the use of forensic evidence or scientific evidence in relation to the criminal justice system is an activity of examining evidence or matters relating to the occurrence of a crime or from the results of crime scene processing that will produce scientific instructions or information from investigative activities in the process of proving a crime.

Keywords: Forensic Evidence · Crime · Scientific · Criminal Justice System

1 Introduction

Forensic science works in the criminal justice system through the support it provides to the police, prosecutors and courts [1, 2]. The availability of forensic resources is limited and the demand for forensic services generally exceeds the available capacity of forensic service providers [3]. It is important to use forensics strategically so that the services provided to the police and courts can provide maximum benefit and ultimately serve the community [4], for example by completing criminal investigations quickly [5], achieving a high level of crime detection and reducing crime in general [6–9]. The role of forensic science is to apply science to physical evidence and produce findings that assist police and court investigations in achieving the value of justice. It is very important to understand that the value of forensic science is not only in the detection of perpetrators and the production of suspect evidence [10–14].

The importance of forensic evidence in criminal law is that it can provide important information about how crimes were committed and who committed them [15–17]. If the information is obtained in the evidentiary process, the evidence is used in the

trial [18]. Evidence is information accepted by the court that can be taken into account when determining the defendant's guilt or innocence [19]. Whether or not information is received, whether it is eyewitness testimony, photographs, physical objects, or scientifically produced information such as DNA, all depends on the arrangement of the evidentiary process [20–22]. Through forensic evidence, it is hoped that the police, prosecutors, and judges will not rely on the confessions of suspects or living witnesses in the investigation and settlement of a crime. This is because living witnesses can lie, so based on the testimony of these witnesses, the aim of upholding the truth in the process of a criminal case cannot be guaranteed [23–25]. In general, forensic science can be defined as the use or application of specialized knowledge for the benefit of law enforcement authorities and the judiciary.

Handling a criminal act in practice means not only applying criminal law, but also relating to other sciences, such as forensic science, especially in criminal acts that really require accuracy and efforts to disclose complicated criminal acts. For this reason, it is important to understand how important forensic evidence is to fulfill its role in the criminal justice system, especially in the investigation process and in proving difficult and complex crimes.

2 Method

This study uses a normative method with a conceptual approach and an analytical approach. This study uses secondary data in the form of legal materials such as legal regulations, the results of research and other scientific articles, especially related to the position and use of forensic evidence. Then qualitative analysis is carried out to provide answers to the issues that are important in this study.

3 Result and Discussion

The criminal justice system is often described as the institutions responsible for enforcing criminal law, including the legislature, the police, the courts, and the correctional system [26]. The overall picture of the criminal justice system reflects a system with three separate functions: police, courts and penitentiaries [27–29]. Each has their own role, but they are interconnected. In the field of forensics, the one-sided view of the criminal justice system dates back to a time when forensic services such as evidence gathering, death investigations, and psychiatric evaluations were almost entirely the responsibility of government agencies and the police.

In the UK, forensic services are provided by Forensic Science Services (FSS), a public non-law enforcement agency [30, 31]. The FSS has contracts for forensic investigations with law enforcement agencies in England, Wales, and even the Royal Canadian Mounted Police (RCMP) [32, 33]. In addition to medical care, public forensic services are also offered in Australia [34]. For example, the Queensland Medical Sciences and Forensics Service is responsible for conducting autopsies and forensic examinations at the John Tong Center in Brisbane [35, 36]. Each state has its own regional forensic center. However, law enforcement agencies in both countries continue to collect evidence and conduct certain types of forensic examinations. However, in the United States, many

criminalists work directly for state law enforcement agencies, creating a conflict of interest that must be carefully identified and managed [37]. In Australia and the UK, most government agencies providing forensic services are independent of law enforcement and oversight [38]. A judge is part of the criminal justice system responsible for making decisions and/or laws. This includes everything from prosecution to initial conviction, appeal, cassation, and retrial. Incarceration is part of the criminal justice system that deals with parole, imprisonment, treatment, rehabilitation, treatment, parole, and sometimes execution of convicted criminals [39].

Suffice it to say that today's criminal justice system consists of the following main branches: law enforcement, forensics, the judiciary, and prisons [40]. Law enforcement is part of the criminal justice system that deals with reported crimes [41]. Law enforcement agencies are tasked with monitoring compliance with the law and ensuring that citizens are acting legally, and investigating the nature and extent of illegal activities. In this capacity, they are supposed to investigate crime reports to find out what happened. When they believe a crime has occurred, law enforcement agencies attempt to identify and arrest the suspects. In some cases, this may also include the collection, delivery, and/or preservation of physical evidence by crime scene investigators. Forensic services refer to the aspect of the criminal justice system that deals with examining and interpreting physical evidence, behavior, and testimony [42, 43].

Forensic evidence is considered to be one of the most effective types of evidence obtained and analyzed in courtrooms [44, 45]. The term "forensic evidence" encompasses two different concepts and processes. The forensic component refers to the scientific process by which facts are produced. DNA extraction, testing, and population analysis is a good example. Hair, fiber and fingerprint analysis methods are another example [46]. The field of forensics includes several well-known disciplines, and the sciences dealing with product liability and environmental issues do not fit within these narrow boundaries [47]. Forensic evidence is considered to be one of the strongest forms of evidence obtained and examined in courtrooms [44, 45]. The term "forensic evidence" encompasses two different concepts and processes. The forensic component refers to the scientific process by which facts are produced. DNA extraction, testing, and population analysis is a good example. Research methods for hair, fibers, and fingerprints are another example [46]. The field of forensics includes several well-known disciplines, and the sciences dealing with product liability and environmental issues do not fit within these narrow boundaries [47].

Forensic science describes the science related to people, places, and things involved in criminal activity [22]. This discipline helps investigate and resolve legal cases. The word "forensic" comes from the Latin word "forensis," which means "public forum" [48]. In ancient Rome, the senate met in the forum, a public place where the political and political issues of the day were discussed and debated. More technically, "forensics" means "as applied to public or legal affairs [22]". For this reason, "forensic science" is an appropriate term for the investigative profession whose mission is to answer legal questions through reports and evidence [49, 50].

Although chemical, pharmaceutical, biological, and mechanical or electrical disputes have recurring scientific focus areas, there is less opportunity to discuss common methods that are accepted in court [2]. Criminal courts need criminal courts to provide a broad

overview of their methods. However, the legal issues are basically the same. The terms forensic evidence with the evidentiary component refers to separate procedures that are unique to legal proceedings. This legal procedure is separate and distinct from the scientific process of deciding whether to admit or reject evidence, including criminal evidence [51].

Forensic science involves the use of scientific theory in combination with the laboratory methods of more traditional academic natural sciences such as anthropology, DNA analysis, and geology [52]. Some forensic subjects, such as footprinting techniques or fingerprint analysis are rare. Contrast microscopes and other microscopic instruments are used in many disciplines to provide important results in the detection and prosecution of crime [53]. It is important to remember that forensics is used to obtain forensic evidence [54]. This is the forensic part in the form of court evidence that is intended as evidence. All this information is collected and produced to establish the essential facts of a criminal case and in the context of the latest technological developments or methods.

The method changes as science progresses. The legal system has gone through many such changes and will last much longer in the 21st century. An important aspect of the growing reliance on the scientific method as a basis for determining the facts of a situation is that it occurs rather than the method used [55]. Whether it is true or not will largely depend on the information-seeking theory used by information seekers. The debate about the use of criminology in criminal law usually revolves around the topic of criminology. Forensic evidence refers to facts or opinions that are proven or supported in a criminal case by one, usually more than one, piece of forensic evidence that is widely used in a trial [56].

The body of forensic has an extensive list of disciplines that have been established [57]:

- a) Hair analysis.
- b) Fiber analysis.
- c) Analysis of glass fragments and glass chips.
- d) Soil analysis.
- e) Ballistic and tool marks.
- f) Fingerprint.
- g) Footwear.
- h) Tire tracks.
- i) Blood spatter analysis.
- j) DNA analysis.
- k) Forensic anthropology.
- 1) Forensic archeology.
- m) Forensic pathology.
- n) Odontology.
- o) Analysis of questionable documents.
- p) Psychiatry and forensic psychology.

A key concept in the use of forensic findings is crime scene awareness [58]. Although a crime scene may consist of the room or open space where the crime occurred, it usually refers to the scene of a crime, such as a sexual assault, assault or murder. The use of

the crime scene paradigm is not only a learning center for criminologists but also an important source and reference point for the analysis of many legal issues directly or indirectly related to the field of forensic evidence [59]. What types of material are commonly or commonly found at crime scenes that, if carefully examined by forensic experts, could provide valuable information that could lead to the arrest of the suspect and arrest a suspect [60].

Forensic evidence is used to reconstruct the events of a crime from beginning to end in the criminal justice process [61]. Given the strict legal and mandatory rules of evidence, such a reconstruction is often a difficult task for public prosecutors and lawyers. The use of criminology in criminal cases also includes some laboratory work to solve the problems of the complex reality of the case [62]. The information from these scientific sources must be current. The value of forensic evidence to the police and prosecutors lies in its ability to interpret various physical aspects of a crime scene and hopefully match a suspect with crime scene evidence and evidence [63]. In this regard, it is very important to understand that there are four scenes of crime in any criminal case, and each of them has its own rules and principles, namely [57]:

- a) Physical crime scene created and left behind by the offender.
- b) The crime scene material is collected by the crime scene police.
- c) Crime scene material that can be tested by the crime lab and the results of these tests.
- d) The court allows crime scene information to be used as evidence in accordance with the case and the rules of evidence.

The relative importance and focus of each subsequent crime scene depends on an understanding of the four key factors underlying all aspects of forensic science [57]:

- a) Recognition means the ability to understand what may be on the scene.
- b) The collection procedure means understanding and utilizing current ideas on the topic of the collection procedure.
- c) Testing procedures refer to understanding and utilizing current thinking on the subject of forensic laboratory testing.
- d) Requirements concerning experimental evidence mean proving and demonstrating the application of basic requirements and rules of evidence.

Crime scene documentation and the collection of physical evidence are important aspects of crime scene investigations and should, of course, be performed correctly [60]. Completing these crime scene investigations is necessary to maintain the integrity of the physical evidence and to achieve the final outcome of the criminal investigation. Scientific crime scene investigation is a process that not only encompasses the mechanical aspects of crime scene security, crime scene documentation, and the collection and preservation of physical evidence as mentioned above, but also requires and expects more dynamic approaches such as investigation by crime scene, research analysis, hypothesis development using crime scene links, physical evidence and reconstruction of people and crime scenes [60]. Even in environments where crime scene tasks are defined by level, anyone working at a crime scene needs to be aware of crime scene dynamics and the importance of combining hypotheses and development. The crime scene investigation is

based on scientific evidence, which means that the investigation is methodical, systematic and logical. Starting with crime scene processing and continuing with crime scene security, crime scene documentation, evidence identification, model enhancement, physical evidence collection, packaging and storage, artifact analysis, crime scene analysis and profiling, and finally crime scene construction.

4 Conclusion

Utilization of forensic evidence or scientific evidence in connection with the criminal justice system is scientifically performed or related to the occurrence of a crime or the examination of evidence obtained from the results of a crime scene, which produces instructions or information about investigative activities leading to criminal justice. Completion of evidence in criminal evidentiary proceedings. The use of forensic evidence eliminates the determination of innocent suspects in police investigations and protects defendants from wrongful convictions in court. Additionally, the presence of forensic evidence facilitates the ability of law enforcement agencies, whether police, prosecutors, or judges, to identify the events, victims, crime scenes, and perpetrators of a crime.

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