



**FAKULTAS HUKUM**  
UNIVERSITAS MUSLIM INDONESIA

***Al-Ishlah: Jurnal Ilmiah Hukum***

P-ISSN: 1410-9328 || E-ISSN: 2614-0071

<https://jurnal.fh.umi.ac.id/index.php/ishlah/article/view/v28n1-1>

Vol. 28 Issue 2 : June 2025 – November 2025.

Published Online: Juni - November, 2025



#### Article Title

## **The Legal Status of Fingerprints as Indicative Evidence in the Investigation of Murder Cases**

#### Author (s)

##### **Lisa Meiriska**

Magister of Law, Universitas Muslim Indonesia, Indonesia

Email: [lisa.meiriska@umi.ac.id](mailto:lisa.meiriska@umi.ac.id)

##### **Mulyati Pawennei**

Faculty of Law, Universitas Muslim Indonesia, Indonesia

Email: [mulyati.pawennei@umi.ac.id](mailto:mulyati.pawennei@umi.ac.id)

##### **Aan Aswari**

Faculty of Law, Universitas Muslim Indonesia, Indonesia

Email: [aan.aswari@umi.ac.id](mailto:aan.aswari@umi.ac.id)

#### How to cite:

Meiriska, L., Pawennei, M., & Aswari, A. (2025). The Legal Status of Fingerprints as Indicative Evidence in the Investigation of Murder Cases. *Al-Ishlah: Jurnal Ilmiah Hukum*, 28(2), 92-105.

**ABSTRACT**

*This study examines the position and obstacles in the use of fingerprints (dactyloscopy) as evidence in the investigation of murder cases within the jurisdiction of the Bone District Police. Drawing upon Soerjono Soekanto's theory of law enforcement and the provisions of the Indonesian Criminal Procedure Code (KUHP), fingerprints are positioned as indicative evidence as well as expert testimony capable of scientifically linking the perpetrator, victim, and criminal event at the crime scene. The research employs an empirical (socio-legal) approach through field observations, case-file studies, and interviews with investigators, fingerprint experts, and related parties, complemented by normative analysis of legislation and relevant literature. The findings indicate that fingerprints possess strong probative value and function as a scientific backbone of evidence, particularly with the support of the INAFIS system and biometric databases. However, their effectiveness is often hindered by the absence of specific regulations on dactyloscopy, limited facilities and infrastructure, uneven technical competence among investigators, the suboptimal biometric database, and crime-scene contamination caused by community, weather, and environmental factors. The study concludes that strengthening regulations, enhancing investigators' capacity, improving forensic infrastructure, and increasing public legal awareness are essential to optimize the role of dactyloscopy and prevent error in persona in criminal law enforcement.*

**Keywords:** *Fingerprints (Dactyloscopy); Indicative Evidence; Murder Investigation; INAFIS*

---

**INTRODUCTION**

According to Soerjono Soekanto, law enforcement is influenced by several interrelated factors: the legal substance itself, law enforcement officers, supporting facilities and infrastructure, the community or social environment in which the law operates, and cultural factors. Law, in essence, reflects human behavior within society. Humans naturally live together, adapt, and harmonize their conduct with their social group, thereby creating order and stability (Wijaya, K. Arman, & Arta, 2023). This order is then manifested in the form of legal norms that must be obeyed by every member of society.

From the perspective of religious teachings, particularly Islam, murder is considered a major sin and is strictly prohibited except for justified reasons. The Qur'an states: "Do not kill the soul which Allah has forbidden, except by right. And whoever is killed unjustly, We have given his heir authority, but let him not exceed limits in killing; indeed, he is supported." This verse affirms the sanctity of human life, indicating that any unlawful deprivation of life is forbidden and must be accounted for both morally and legally.

In a state governed by law, the prohibition of murder is translated into positive criminal law. The implementation of criminal law is carried out through the law enforcement mechanism, one of which takes place in the criminal justice process. Handling criminal cases, particularly murder, always begins with an investigation to uncover facts and evidence that can lead to the perpetrator. The study of crime and its inherent problems is essentially an examination of human behavior and social dynamics.

Crime, including murder, is a social phenomenon that can disturb public order if not addressed seriously. Such acts violate religious and moral norms and constitute

offenses that may result in property damage, physical injury, or loss of life. Therefore, law enforcement in murder cases demands accurate and accountable evidence (Hartono & Aprinisa, 2021).

The pursuit of material truth in criminal cases is not easy. Often, events present limitations in available evidence and witness testimony, requiring investigators to work harder to uncover what actually occurred. Article 1(2) of the Indonesian Criminal Procedure Code (KUHAP) defines investigation as a series of actions taken by investigators to seek and gather evidence to clarify a criminal act and identify the suspect. Article 183 of KUHAP stipulates that a judge may not convict unless at least two legal pieces of evidence and the judge's conviction are obtained, while Article 184 identifies the types of legal evidence: witness testimony, expert testimony, documents, indications, and the defendant's statement (Kasidin, 2021).

These evidentiary categories constitute the primary instruments for assessing the truth of claims in a case. In practice, investigators utilize various methods to find and strengthen evidence, one of which is fingerprint analysis or dactyloscopy. This discipline studies the ridge patterns on fingertips left on objects at the crime scene (TKP). Historically, dactyloscopy was developed by Francis Galton and Sir William Herschell in the late 19th century, demonstrating that fingerprints are permanent, distinct, varied, and easy to record, making them highly effective for identity verification.

Normatively, the use of fingerprints in investigations has a legal basis. Article 7(1)(a) of KUHAP authorizes investigators to take fingerprints and photographs of individuals. Law No. 2/2002 on the Indonesian National Police also affirms the police authority to retrieve fingerprints. In civil registration, Law No. 23/2006 in conjunction with Law No. 24/2013 regulates biometric recording, including fingerprints, for electronic ID card issuance. This legal framework expands the national biometric database, which can be used for identification in criminal investigations (Rumpang, Rahman & Natsir, 2021).

Fingerprints offer scientific advantages not possessed by other evidence. Biologically, fingerprints form at around four months of fetal development and remain unchanged throughout life. Ridge patterns differ across individuals—even identical twins—and do not change except for proportional growth. This unique and permanent nature makes fingerprints a highly reliable means of identification, making it difficult for perpetrators, witnesses, or victims to deny matches (Winata, 2022).

These strengths position dactyloscopy as an important tool for solving various crimes, including murder, which typically leaves traces at the crime scene. Offenders often do not realize that every touch may leave latent fingerprints that can be detected, lifted, and analyzed. Such latent prints are then compared with fingerprint data stored by the police or civil registry, aiding in identifying suspects (Adang & Oner, 2021).

Under Indonesian law, investigative authority is primarily vested in police investigators as regulated in Article 6 of KUHAP. Police officers appointed as investigators must meet rank requirements further governed by government regulations. Investigators' qualifications and professionalism are crucial in utilizing forensic identification technologies, including fingerprint examination, so that results can be accounted for as indicative evidence (Hutahaeen & Indarti, 2019).

Government Regulation No. 27/1983 on the Implementation of KUHAP affirms that criminal cases must be proven using lawful evidence. Fingerprints found outside the primary crime scene—such as on objects at another location—may still be used as evidence if their logical connection to the criminal event and perpetrator can be explained. Investigators, prosecutors, and judges must construct a coherent evidentiary narrative.

Murder is classified as a crime against life as regulated in Chapter XIX of Book II of the Indonesian Criminal Code (KUHP), spanning Articles 338–350. It is generally a material offense, considered complete when death occurs. The element of fault may involve intent (*dolus*) or negligence (*culpa*), with severe sanctions due to the high value placed on human life (Mentari, 2020).

Murder cases in Bone Regency highlight the urgency of effective law enforcement. Data from the Bone Police show 10 murder cases over the past three years: 5 in 2023, 3 in 2024, and 2 in 2025. One notable case occurred in November 2023, when a victim was found dead at home with sharp-force injuries. Witnesses observed the perpetrator leaving the scene holding a machete, and several objects near the incident were collected as evidence, including potential fingerprints.

This case illustrates the importance of fingerprint science for uncovering the true perpetrator and reconstructing events. When witness testimonies diverge or conflict, matching fingerprints can serve as strong indicative evidence directing investigators toward the correct suspect. The role of fingerprints becomes crucial, particularly when linked with other evidence such as witness statements, medical reports, and physical objects found at the crime scene.

Based on this discussion, fingerprints clearly play an essential role as identifying evidence and indicative proof in murder investigations. Nevertheless, various challenges remain, including limitations in fingerprint databases, operational standards, and judicial assessment of fingerprint evidence. This raises the question of how fingerprints are positioned within Indonesia's criminal evidentiary system, particularly in murder investigations within the jurisdiction of the Bone Police.

For these reasons, research on the legal standing of fingerprints as indicative evidence in murder investigations is important to provide both juridical and practical insights into how fingerprints are used, evaluated, and optimized in enforcing the law against homicide.

## METHOD

The research method employed is an empirical or socio-legal approach, namely a legal research method that examines legal norms alongside their practical application in the field. This study focuses on how fingerprints function in the investigation and evidentiary process of murder cases, with particular emphasis on the use of dactyloscopy in concrete cases. The research was conducted within the jurisdiction of the Bone District Police (Polres Bone) and, when relevant, in forensic institutions associated with fingerprint analysis, such as the Forensic Laboratory of the South Sulawesi Regional Police and forensic units at hospitals cooperating with the police, enabling the researcher to directly observe the process of collecting and processing fingerprint evidence.

The data consist of primary and secondary sources. Primary data were obtained through field observations of investigative procedures and the use of fingerprints in murder cases, in-depth interviews with investigators, prosecutors, and fingerprint experts, as well as questionnaires to obtain a broader overview of patterns and effectiveness in fingerprint utilization. Secondary data were derived from legislation, court decisions, scholarly literature, official reports, and other documents relevant to the evidentiary process and the use of fingerprints. The research population includes all murder cases within the Bone Police jurisdiction that employ fingerprints as part of the evidentiary set, while the sample was selected purposively, consisting of several representative murder cases, the investigators handling them, fingerprint experts involved, and suspects or witnesses related to those cases.

Data collection techniques included in-depth interviews, observation, and document study, combined with a literature review to strengthen theoretical and normative foundations. The collected data were analyzed qualitatively using thematic and content analysis to identify patterns, challenges, and forms of fingerprint utilization as indicative evidence, and quantitatively—through simple descriptive statistics—to examine frequencies and trends in fingerprint use in murder investigations. This combined analytical approach is expected to provide a comprehensive and in-depth depiction of the position and role of fingerprints in murder investigations within the jurisdiction of the Bone District Police.

## RESULT AND DISCUSSION

### A. The Strength of Fingerprints (Dactyloscopy) as Evidence in the Criminal Investigation Process

The role of fingerprints in the criminal investigation process, particularly in murder cases, holds a highly significant position because they serve as a scientific basis for accurately identifying both victims and perpetrators (Asma & Taha, 2022). At the Bone District Police (Polres Bone), the use of dactyloscopy is understood not merely as a technical police procedure but as an integral part of the evidentiary system aimed at presenting material truth before the law. Fingerprints discovered at the Crime Scene (TKP) can directly connect the perpetrator, victim, and criminal act, functioning as a bridge between forensic facts and the legal construction of proof in court.

From the perspective of criminal procedural law, fingerprints serve a dual function: on one hand, they strengthen indicative evidence; on the other, their examination results are presented as expert testimony. These two functions give fingerprints a strategic position within the structure of evidence as regulated in Article 184(1) of the Indonesian Criminal Procedure Code (KUHP). However, errors in identifying fingerprints may lead to serious legal consequences, including an indictment being declared null and void under Article 143(3) KUHP and the case file being returned to investigators for reinvestigation. Thus, the accuracy of dactyloscopy is an absolute requirement to prevent *error in persona* in the law enforcement process (Abdullah & Mutalib, 2023).

Operationally, the investigative process begins with the initial actions at the crime scene: securing the location, documenting the condition through photography and sketches, inventorying potential evidence, and examining witnesses or the victim (if

alive). At this stage, investigators cooperate with the identification unit to trace biological and physical traces left behind, including latent fingerprints on object surfaces. All findings are then compiled into an Official Investigation Report (BAP), forming the basis for the public prosecutor to construct the indictment (Abdullah, 2023).

The success of investigators largely depends on their ability to maintain the authenticity of the crime scene. Any alteration, damage, or negligence in securing the scene can erase fingerprints or other traces such as bloodstains, hair, or footprints. Therefore, the first action at the crime scene must prioritize the principle of *status quo* by placing police lines and restricting access to unauthorized individuals (Rasiwan, 2025). In this context, fingerprints discovered at the scene are subsequently lifted and documented through fingerprint collection reports, photographic reports, and crime scene investigation reports, all of which qualify as documentary evidence and expert testimony under Article 184 KUHP.

Biologically and criminologically, fingerprints possess unique, permanent characteristics that differ from one person to another. The notion that no two individuals in the world share identical fingerprints is not merely an assumption but has been scientifically proven through numerous studies. This uniqueness makes fingerprints a highly reliable form of individual identity. From a law enforcement standpoint, their permanence—from fetal development until death—provides high evidentiary value, minimizing the possibility of error when examinations are conducted correctly (Meliala et al., 2023).

Reinhard Hutagaol explains that fingerprints are essentially thickened and thinned skin ridges on the fingertips, forming distinct patterns. Even when someone suffers cuts or abrasions, once the skin regenerates, the papillary pattern generally returns to its original form, except in extreme cases such as severe burns that destroy the tissue (Winata, 2022). This explanation demonstrates that although certain factors may affect fingerprint clarity, the basic pattern forming a person's identity can typically still be analyzed.

The scientific study of fingerprints for identification purposes is known as dactyloscopy. This discipline focuses on observing and classifying the papillary ridge patterns on the fingertips and toes for purposes of personal recognition. Galton broadly categorized fingerprint patterns into three types: arch, loop, and whorl. This classification helps experts describe and compare fingerprint patterns for forensic identification (Himamunanto & Setyawan, 2024).

**Figure 1. Basic Fingerprint Patterns: Arch, Loop, and Whorl**



Fingerprint patterns are also a form of biological variation that reveals differences based on sex, race, and even among identical twins. Dermatoglyphic research shows that males generally possess more whorl patterns, whereas females more frequently exhibit simpler arch patterns (Robby & Kurniawan, 2019). These variations make fingerprints not only relevant for identifying crime perpetrators, but also useful in certain medical studies, including the detection of genetic disorders. For law enforcement, such distinctions enrich the data pool and help reduce the likelihood of misidentification.

In murder investigations, fingerprint collection must be carried out systematically. Investigators may take fingerprints from the victim's body, objects attached to the victim, items surrounding the victim, or other objects at the crime scene suspected of being touched by the perpetrator. Two important concepts are recognized here: *identify* and *individualized*. *Identify* refers to placing an object within a certain category, whereas *individualized* denotes specific uniqueness that confirms no two objects are exactly the same—not even identical twins. This principle underpins the criminological maxim: “there is no crime without leaving a trace” (Rifai, Ali, & Mahfud, 2019).

The fingerprint identification process lies entirely within the authority of law enforcement officers, particularly investigators of the Criminal Investigation Unit of the Indonesian Police (Polri) in the identification division. Officers are authorized to receive reports, secure the crime scene, search for information and physical evidence, make arrests, conduct searches, take fingerprints, and photograph individuals as stipulated in Article 7(1) of the Criminal Procedure Code (KUHP). If the identities of the victim or perpetrator are already known, fingerprints are collected as administrative data and attached to the official investigation report (BAP). However, if the identity remains unknown, fingerprints become the primary starting point for tracing identity through comparison with police fingerprint archives or population databases (Mardona & Yenti, 2019).

The initial handling of cases at Polres Bone is carried out by the Police Service Center (SPK), which is responsible for taking the first action at the crime scene and placing police lines. Afterward, crime scene investigators together with the identification team perform photography, measurement, lifting of latent fingerprints, and the collection of other evidence. If the perpetrator is not caught in the act and their identity is still

unclear, latent fingerprints found at the scene become crucial materials to compare with fingerprints from suspects or police databases.

In murder cases in Bone, latent fingerprints discovered at the crime scene are connected with data stored in police archives and the national biometric database. The use of the AK-23 fingerprint card and the INAFIS (Indonesia Automatic Fingerprint Identification System) enables rapid and accurate fingerprint matching. Every individual whose fingerprints are recorded for civil or law enforcement purposes is stored in the national database, facilitating the tracking and identification process when a crime occurs.

According to an interview with BRIPKA Hamsah, S.Sos, an investigator of the Resum Unit at Polres Bone, fingerprint collection is carried out through two mechanisms: general (administrative) collection and criminal collection. General collection is related to population or employment administration, whereas criminal collection is performed on individuals suspected of involvement in a crime. All fingerprint collection results are entered into the AK-23 card, which then becomes part of the police database. This database serves as a reference when investigators need comparison material for latent fingerprints found at the crime scene.

The interview also explained the technical equipment used in fingerprint identification at the crime scene, including standard powder, magnetic powder, fingerprint brushes, special ink, AK-23 forms, lifters, and gloves. Procedurally, identification officers search for and lift latent fingerprints at the crime scene, take fingerprints of corpses when necessary, collect fingerprints from the victim's family or other relevant parties so that their traces are not mistaken for the perpetrator's, and take fingerprints from individuals suspected of involvement. This demonstrates that dactyloscopy is not performed arbitrarily but follows strict operational standards to ensure that results are admissible in court.

From the perspective of the theory of legal effectiveness, fingerprints will function optimally as evidence only when the collection procedures are followed, the results are interpreted by competent experts, and their use is accepted by law enforcement officials and the community as valid evidence. However, in legal terms, fingerprints do not stand alone. Article 183 of KUHAP stipulates that a judge may impose a criminal sentence only if, with at least two valid pieces of evidence, the judge is convinced that a crime truly occurred and that the defendant is the perpetrator. This means that regardless of how scientifically strong fingerprint evidence may be, it must still be supported by other evidence and the judge's conviction.

In procedural law, fingerprints are categorized as indicative evidence derived from documents and expert testimony. Therefore, they are usually combined with witness statements, *visum et repertum*, crime reconstruction, or the defendant's confession. The strength of fingerprint evidence lies in its ability to bridge the gap between factual events at the crime scene and the legal construction of the indictment and the final judgment. Here, the harmony between forensic science and criminal law dogmatics becomes particularly relevant.

In the murder case involving a victim with the initials HD in Bone Regency, fingerprints became one of the central pillars of evidence against the suspect KM. After crime scene processing at the victim's house on Jalan Ahmad Yani, investigators found

various pieces of evidence, including a machete sheath and other objects believed to have been touched by the perpetrator. Latent fingerprints lifted from these objects were then compared with KM's fingerprints stored on their AK-23 card and in the INAFIS system. The matching results showed strong compatibility, which was further supported by witness testimony, physical evidence, and the *visum et repertum*.

**Figure 2. Fingerprint Identification Data of Suspect KM**



Advancements in fingerprint identification technology through INAFIS have made the comparison process faster and more accurate. This system compiles all fingerprint records obtained from population administration processes as well as law-enforcement procedures. When a latent fingerprint is entered into the system, the software searches for matches among millions of stored data points and produces a list of the most likely candidates. At the Bone District Police (Polres Bone), this practice has proven effective in accelerating the identification of the perpetrator in the HD murder case, enabling investigators to promptly carry out the arrest and conduct further examination.

The evidentiary process was then strengthened by the *visum et repertum* issued by Tenriawaru Regional General Hospital, which detailed the sharp-force injuries on the victim's body—from the face, neck, and shoulders to the back. The injury descriptions, consistent with the use of a sharp weapon, combined with the discovery of a machete sheath and witness testimony stating that the perpetrator was seen holding a machete, formed a coherent chain linking the perpetrator to the weapon and the resulting harm. The fingerprints found on the physical evidence served as a scientific anchor that was difficult to refute within this chain of proof.

Ultimately, the congruence between witness statements, fingerprint identification results, physical evidence, *visum et repertum*, and the defendant's testimony led the judge to conclude that KM was legally and convincingly proven to have committed premeditated murder under Article 340 of the Indonesian Criminal Code (KUHP), as well as theft under Article 362 KUHP. Within this evidentiary

construction, fingerprints did not function as a standalone form of proof but rather as the scientific backbone that reinforced and confirmed other evidence. Without fingerprint support, the evidentiary process might still have proceeded, but it would not have been as strong or assertive as when dactyloscopy was optimally utilized.

From the foregoing explanation, it can be concluded that the evidentiary strength of fingerprints (dactyloscopy) in the investigation of criminal acts is highly fundamental, particularly in murder cases. Scientifically, fingerprints provide unique, permanent, and virtually impossible-to-forge identity markers. Legally, fingerprints function as indicative evidence (*petunjuk*) and expert testimony which—when combined with other evidence and meeting the standards of Article 183 KUHAP—can provide the judge with strong conviction. Thus, fingerprints occupy a central position in modern law enforcement, although they must still be placed within a holistic evidentiary framework and not treated as a solitary basis for proof.

#### **B. Obstacles in the Fingerprint (Dactyloscopy) Investigation Process as Evidence in Murder Cases**

Obstacles in the use of fingerprints as evidence in murder investigations cannot be separated from the interaction between law and law-enforcement officers. In line with Soerjono Soekanto's perspective, the law is meaningless without the officers who enforce it, and conversely, law-enforcement officers lose direction without a clear normative foundation. In this context, the Indonesian National Police (Polri) holds a central position as the "filter" between investigation and prosecution; therefore, any obstacle faced by the police in utilizing dactyloscopy directly affects the achievement of criminal law-enforcement objectives.

Crime, including murder, is a form of deviant behavior that never disappears from society. Criminal acts must be addressed through firm legal instruments, including scientific proof using fingerprints. However, in practice at the Bone District Police, the use of dactyloscopy to reveal the identity of murder perpetrators does not always run smoothly. Multiple obstacles arise—stemming from normative, technical, institutional, and social aspects—thereby reducing the effectiveness of fingerprints as indicative evidence.

Soerjono Soekanto's theory of legal effectiveness identifies five factors influencing the success of law enforcement: legal factors (regulations), law-enforcement officers, facilities and infrastructure, society, and culture. These factors can serve as an analytical framework for understanding the obstacles that arise in the fingerprint investigation process at Polres Bone. In other words, the difficulties encountered by investigators are not merely technical issues at the crime scene but reflect broader structural and cultural problems.

From the legal-regulatory standpoint, KUHAP indeed provides authority for investigators to take and photograph fingerprints (including Article 7 paragraph (1) letter f and provisions under the Police Law). However, to date, no specific legislation comprehensively regulates dactyloscopy as a distinct legal regime. The draft law on dactyloscopy remains conceptual. This regulatory vacuum causes identification procedures to depend on internal SOPs, habits, and the interpretation of each police unit, thereby creating inconsistent standards and potential evidentiary disputes in court.

Moreover, normatively, fingerprints are not positioned as a standalone category of evidence. They are subsumed within indicative evidence (*petunjuk*) and expert testimony. Article 183 KUHAP mandates that judges may impose a sentence only if, with at least two valid types of evidence, they obtain conviction that the defendant is the perpetrator. Consequently, even highly robust scientific fingerprint results may lose legal weight if not supported by witness statements, other physical evidence, or a convincing chain of events. In practice, this becomes an obstacle when fingerprints are the only relatively “clean” evidence available.

The factor of law-enforcement officers also contributes significantly to existing obstacles. R. Sosilo and M. Karjadi note recurring investigative errors, such as ignoring seemingly trivial objects that actually contain crucial traces, modifying the crime scene excessively until it is no longer original, or creating details inconsistent with the facts. Inaccuracies in constructing the event chronology lead to a BAP that does not reflect reality. When investigators focus on one aspect while overlooking others, significant fingerprint evidence may be missed or damaged.

Technical limitations and insufficient investigative experience at the crime scene also form substantial obstacles. Lifting latent fingerprints requires precision, technical mastery, and understanding of the surface characteristics of objects. Investigators who are not well-trained may inadvertently erase or damage papillary ridges when touching, moving, or cleaning surfaces. From the perspective of legal effectiveness, such capacity limitations represent structural barriers that weaken the enforcement of existing legal norms.

Technical obstacles at the crime scene are explicitly acknowledged by AIPDA A. Muh. Akri Tenri Bali, a Fingerprint Specialist at INAFIS Polres Bone. According to him, fingerprints found at crime scenes are often incomplete or unclear—scratched, covered in dust, mixed with stains, or overlapping with other prints. These conditions make identification difficult, as experts require clear papillary patterns to match the print with comparative data. Here, the quality of physical traces becomes decisive for the success of dactyloscopy.

Societal factors constitute some of the most apparent obstacles. Public curiosity about a murder often drives residents to gather around the crime scene even before officers arrive. Many unknowingly enter sterile areas, touch objects near the victim, or move items with the intention of “helping.” As a result, the crime scene becomes contaminated, and the authenticity of traces—including the perpetrator’s latent fingerprints—becomes extremely difficult to preserve.

Crime-scene contamination by the community includes touching surfaces previously touched by the perpetrator, covering latent prints with new ones, shifting objects that were originally crucial for reconstructing the sequence of events, or disrupting the chain of custody. From an evidentiary standpoint, altered object positions or lost contextual integrity undermine the probative value of fingerprints in court, reducing legal effectiveness as described by Soerjono Soekanto.

Another community-related obstacle is the reluctance of witnesses or suspects to provide comparative fingerprints. Although Article 7 paragraph (1) letter f KUHAP authorizes investigators to take fingerprints, resistance in the field often slows the process, especially when individuals do not understand the legal basis and perceive

such actions as invasions of privacy. Furthermore, not all residents have their fingerprints recorded in police or population databases, making it difficult to find comparable data even when latent prints are successfully obtained.

Environmental factors (weather) also pose significant challenges. Rain occurring after or during the crime can wash away fingerprints left on exposed surfaces, especially outdoor objects. Strong winds may move lightweight items, deposit new layers of dust, or shift evidence positions. In some cases, local flooding or water accumulation may damage the crime scene. These conditions highlight that law enforcement is inherently affected by natural limitations that influence the preservation of physical traces.

Beyond weather, the presence of animals around the crime scene can disrupt fingerprint identification. A victim's body left for too long may be disturbed by wild animals or insects, damaging tissue needed for fingerprint retrieval or other forensic analysis. Domestic animals or roaming wildlife may also topple, move, or step on evidence. In legal effectiveness theory, such environmental factors fall within facilities and natural conditions beyond human control but significantly affecting law-enforcement processes.

Another obstacle relates to the facilities and infrastructure supporting dactyloscopy. At the district police level, forensic laboratory facilities are often limited, requiring fingerprint samples to be sent to better-equipped labs—such as those at the regional police (Polda) or the central INAFIS. This transfer requires time and administrative procedures, which can delay investigations. Limited equipment such as specialized powders, high-resolution cameras, or fingerprint-lifting devices also affects the quality of identification results.

Issues related to data and information systems also form major obstacles. The national fingerprint database, ideally integrated with population administration systems, is not yet fully complete or evenly developed. In some areas, especially those far from urban centers, residents' fingerprint records are incomplete. Consequently, when a latent print from the crime scene is entered into the system, the search results may not clearly point to an identifiable individual, reducing the effectiveness of INAFIS technology.

Obstacles also arise from the behavior of the perpetrators themselves. Offenders with prior criminal experience or familiarity with the justice system are often more careful and may attempt to eliminate traces—such as using gloves, burning evidence, applying chemicals to surfaces, or mutilating and moving the victim's body. When perpetrators intentionally remove or minimize their fingerprints, investigators must rely on alternative evidence that may not be as strong, complicating the evidentiary process.

## CONCLUSION AND SUGGESTIONS

Fingerprint evidence (dactyloscopy) holds a very strong and strategic position as a means of proof in criminal investigations, particularly in murder cases, because it is unique, permanent, and capable of scientifically linking the perpetrator, the victim, and the criminal act at the crime scene. The biological advantages of fingerprints—which are never identical between individuals and remain relatively unchanged

throughout a person's life—provide high probative value when processed correctly through dactyloscopic methods, both as indicative evidence (*petunjuk*) and as expert testimony, as accommodated under Article 184 of the Indonesian Criminal Procedure Code (KUHP). Nevertheless, this strength can only be fully optimized if the integrity of the crime scene is preserved, the collection and processing of fingerprints are carried out professionally and accurately, and the results are integrated with other forms of evidence to form a complete and convincing evidentiary chain before the court. Therefore, it is essential to enhance investigators' competence in forensic dactyloscopy, strengthen identification facilities and infrastructure, develop an integrated national biometric database, establish specific regulations regarding fingerprint identification standards, and increase public awareness about maintaining the sterility of crime scenes. These measures are necessary to maximize the effectiveness of dactyloscopy as evidence and to prevent *error in persona* in the enforcement of criminal law.

## REFERENCES

- Abdullah, H. Z. (2023). Fungsi Olah Tempat Kejadian Perkara (Tkp) Dalam Penyidikan (Studi di Polda Sultra). *Sultra Law Review*, 3007-3017.
- Abdullah, R. H., & Mutalib, A. (2023). *Hukum Acara Pidana*. Selat Media.
- Adang, C. P., & Oner, B. (2021). Penggunaan Sidik Jari Dalam Pembuktian Tindak Pidana Pembunuhan Pada Tahap Penyidikan (Studi Kasus Di Polrestabes Makassar). *Clavia*, 19(1), 51-60.
- Asma, N., & Taha, F. N. (2022). Kedudukan Sidik Jari Dalam Proses Penyidikan Tindak Pidana Di Kepolisian Resor Gorontalo Perspektif Hukum Islam. *Al-Mizan (e-Journal)*, 18(2), 163-186.
- Hartono, B., & Aprinisa, A. (2021). Implementasi Sanksi Pidana Pelaku Tindak Pidana Kejahatan Terhadap Nyawa Orang Lain Yang Direncanakan (Pembunuhan Berencana). *Jurnal Penelitian & Pengkajian Ilmiah Mahasiswa (JPPIM)*, 2(4), 31-44.
- Himamunanto, A. R., & Setyawan, G. C. (2024). Model Daktiloskopi Digital Berbasis Metode Komposisi PCA-Euclidean-HOG untuk menemukan Rumus Sidik Jari. *Jutisi: Jurnal Ilmiah Teknik Informatika dan Sistem Informasi*, 13(2), 1669-1677.
- Hutahaean, A., & Indarti, E. (2019). Lembaga Penyidik Dalam Sistem Peradilan Pidana Terpadu Di Indonesia. *Jurnal Legislasi Indonesia*, 16(1), 27-41.
- Kasidin, S. (2021). Kajian hukum tentang kekuatan alat bukti yang dipublikasikan oleh seorang ahli di luar pemeriksaan persidangan dihubungkan Pasal 184 KUHP. *FOCUS: Jurnal of Law*, 2(2), 1-20.
- Meliala, A. E., Prameswari, A. D., Widiasih, N., Ramadianto, A. S., Sumampouw, N. E. J., Fachruliansyah, I., ... & Saibih, J. (2023). *Buku ajar kriminologi forensik: Forensik sebagai studi kriminologi dan pelibatan disiplin lain dalam pengungkapan kejahatan*. Penerbit Salemba.
- Mentari, B. M. R. (2020). Saksi Pidana Pembunuhan Dalam Kitab Undang-Undang Hukum Pidana Dengan Hukum Islam. *Al-Ishlah: Jurnal Ilmiah Hukum*, 23(1), 1-38.

- Rasiwan, H. I., & SH, M. (2025). *Pengantar Hukum Forensik Indonesia*. Takaza Innovatix Labs.
- Rifai, M., Ali, D., & Mahfud, M. (2019). Kegunaan Sidik Jari Dalam Proses Investigasi Perkara Kriminal Untuk Mengetahui Identitas Korban Dan Yang Melakukan Perbuatan Pidana. *Syiah Kuala Law Journal*, 3(3), 330-347.
- Robby, M., & Kurniawan, B. (2019). Pola Sidik Jari Dan Sudut Axial Triradius Digital Pada Narapidana Laki-Laki. *Jurnal Kedokteran Ibnu Nafis*, 8(2), 1-8.
- Rumpang, A., Rahman, M. S., & Natsir, M. (2021). Identifikasi Sidik Jari Dalam Mengungkap Tindak Pidana Pencurian. *Jurnal Litigasi Amsir*, 9(1), 26-33.2
- Mardona, R., & Yenti, N. (2019). Fungsi Sidik Jari dalam Pengungkapan Tindak Pidana Pencurian di Reskrim Polresta Padang. *Normative Jurnal Ilmiah Hukum*, 7(2 November), 1-15.
- Wijaya, K. A., Arman, A., & Arta, O. C. (2023). Perspektif Sosiologi Terhadap Terhadap Efektivitas Penegakan Hukum Di Masyarakat. *Innovative: Journal Of Social Science Research*, 3(2), 5892-5900.
- Winata, F. B. (2022). Kekuatan Sidik Jari Sebagai Alat Bukti dalam Penyidikan Tindak Pidana Pencurian dengan Kekerasan. *Transformasi Hukum*, 1(1), 23-34.
- .