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EXPERT EVIDENCE AND COMPETENCE STANDARDS IN INDONESIAN CRIMINAL PROCEDURE: REVISITING KUHAP, THE DRAFT KUHAP, AND LAW NO. 2 OF 2017

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Abstract. *The role of experts in the criminal justice system constitutes an important instrument for ensuring objectivity in the evidentiary process; however, regulatory ambiguities remain concerning the limits of expert authority, certification requirements, regulatory synchronization, and legal protection within the Criminal Procedure Code, the Draft Criminal Procedure Code, and Law Number 2 of 2017 on Construction Services. This study aims to examine the position and role of experts in Indonesian criminal law based on these regulations in order to provide greater legal certainty and enhanced protection for expert witnesses. The research employs a normative juridical method using statutory and comparative approaches. The findings reveal persistent ambiguities across the examined regulations, including the absence of clear provisions defining the scope of expert authority in criminal proceedings, uncertainty regarding the function of experts in providing technical recommendations, unclear requirements for special certification particularly in cases where experts possess practical expertise without formal certification the lack of synchronization between KUHAP, RUU-KUHAP, and the Construction Services Law. The study underscores the need for clearer, harmonized regulations governing expert testimony to ensure legal certainty, professional accountability, and effective protection for experts within Indonesia's criminal justice system.*

Keywords: *Criminal Procedure Code; Criminal Justice System; Expert Witness Protection; Legal Certainty; Regulatory Harmonization.*

1. Introduction

In the criminal justice system, the role of experts is a crucial component of the evidentiary process, particularly when a case involves technical or scientific aspects beyond the legal competence of law enforcement officers. The presence of experts is expected to provide objective explanations that enable judges to understand the context of a case comprehensively (Hamzah, 2006). However, in practice, the regulations concerning the status, authority, and legal protection of experts still leave many unresolved normative issues. The role of academics in the state is highly vital, as they not only contribute to the field of education but also constitute an essential pillar of national development in Indonesia, including in advancing science, urgent information,

and theory creation. In this context, the author, as an academic, contributes scientific knowledge by exploring several analytical studies on experts in the perspective of Indonesian criminal law with reference to the Criminal Procedure Code (*Kitab Undang Undang Hukum Pidana*/KUHAP), the Draft Criminal Procedure Code (*Rancangan Kitab Undang Undang Huku Pidana*/RUU-KUHAP), and Law Number 2 of 2017 on Construction Services.

Existing scholarship has yet to comprehensively examine the regulatory disharmony and lack of synchronization concerning expert witnesses within the framework of Indonesian criminal law, by analyzing and comparing the relevant provisions in KUHAP, RUU-KUHAP, and Law Number 2 of 2017 on Construction Services, both normatively and in terms of practical implications for the justice system. Therefore, the purpose of this research is to examine and explore in depth the disharmony and synchronization of the role of experts in Indonesian criminal law by comparing the regulatory frameworks of KUHAP, RUU-KUHAP, and Law Number 2 of 2017, from both normative and practical perspectives.

The Criminal Procedure Code (*Kitab Undang Undang Hukum Pidana/*KUHAP), as the primary instrument governing criminal procedure in Indonesia, contains only general normative provisions on expert testimony, without specifically detailing the limits of technical authority or the procedures for appointing experts (Muladi, 2010; Soerjono, 2014). As a result, practical uncertainties often arise among law enforcement officers and experts regarding the scope of their duties whether experts are limited to providing testimony or are permitted to design, supervise, or evaluate technical aspects of a case.

Expert testimony in the Indonesian criminal justice system is one of the recognized forms of evidence and plays a significant role in the evidentiary process. Article 1 point 28 of KUHAP defines expert testimony as "a statement given by a person possessing special expertise regarding a matter necessary to clarify a criminal case for the purpose of examination." This definition carries important implications for the judicial examination process. As explained by Andi Hamzah in his book Hukum Acara Pidana Indonesia, expert testimony serves as an explanation of existing evidence to assist the court in properly interpreting that evidence (Hamzah, 2006; Ward, 2009). Therefore, expert testimony functions to verify or clarify matters that may not be easily understood by laypersons, including judges.

Furthermore, Article 183 of KUHAP states: "A judge shall not impose a sentence upon a person unless at least two legal pieces of evidence convince him that a criminal act has truly occurred and that the defendant is guilty of committing it." Article 183 regulates the evidentiary requirements needed to impose criminal liability, including testimonial evidence from two witnesses, the suspect's confession, or documentary evidence. This provision reflects the principle of evidentiary legality (nullum crimen nulla poena sine lege), which demands normative certainty and sufficient evidence before a judge may reach a decision (Soekanto & Mamudji, 2010; Kotsoglou & Biedermann, 2022). By establishing witness testimony, confession, and documents as primary forms of evidence, Article 183 serves as lex specialis to prevent verdicts based solely on presumption or speculation.

From a theoretical perspective, Article 183 can be analyzed within the framework of the theory of evidence, which distinguishes between primary and secondary evidence.

Muladi (2002) emphasizes that witness testimony, as primary evidence, must undergo credibility testing through cross-examination, whereas a suspect's confession is often considered less reliable unless supported by other evidence. Thus, documentary evidence plays a crucial role in reinforcing material facts.

The problem becomes even more complex in terms of certification: KUHAP does not require experts to possess formal certification, allowing experienced but uncertified individuals to be appointed, while certified individuals may not necessarily be competent due to insufficient practical experience (Setiawan, 2018). The Draft Criminal Procedure Code (RUU-KUHAP), as an effort to reform KUHAP, attempts to address these gaps. However, despite offering clearer provisions regarding experts, the draft still fails to comprehensively address issues such as the limits of technical authority, appointment mechanisms, and adequate legal protection (Muladi, 2002; Stockdale & Jackson, 2016).

In the criminal justice system, expert testimony plays a crucial role in clarifying technical or scientific matters that cannot be understood by laypersons, including judges and prosecutors. Article 1 point 42 of RUU-KUHAP defines who may be considered an expert in criminal proceedings. This article emphasizes that an expert is an individual with knowledge or skills relevant to the case under investigation. Article 1-point 42a of RUU-KUHAP states that expertise must be supported by academic qualifications or specific certifications, indicating that an expert must possess formal educational foundations relevant to the subject matter. Article 1-point 42b introduces the requirement of practical experience and specialized skills directly related to the criminal incident. This experience may include practical field expertise or prior involvement in similar cases.

In the context of evidence, expert testimony is recognized as a valid evidentiary tool. Article 1 point 43 of RUU-KUHAP states: "Expert testimony is a form of evidence in criminal cases provided at the stages of investigation, inquiry, prosecution, and/or trial." According to Kristyanti (2020), written expert statements constitute documentary evidence, whereas oral statements delivered in court are classified as testimonial evidence. The construction services sector is highly susceptible to building failures that may cause significant economic, social, or public safety losses. Therefore, professional and accountable mechanisms are necessary for evaluating such failures. Article 61 of Law Number 2 of 2017 provides the legal basis for expert assessors who are authorized to provide valid and objective technical opinions.

Conversely, Law Number 2 of 2017 on Construction Services regulates the qualifications and certification of construction experts. Unfortunately, there is still no clear synchronization between this law and KUHAP or RUU-KUHAP, particularly regarding how construction experts may provide testimony in criminal cases (Afriyanti, 2025). The lack of harmonization among these legal instruments results in several normative gaps: (1) undefined limits of expert authority; (2) inconsistent certification requirements; (3) absence of legal protection frameworks or sanctions for erroneous expert testimony; and (4) no synchronization mechanisms among relevant regulations (Rengkung, 2017). These gaps weaken the legitimacy of expert testimony and risk undermining the integrity of judicial proceedings. Empirical phenomena show that these uncertainties can significantly impact judicial decisions. For example, in cases involving engineering failures in infrastructure projects, the credibility of "field experts" lacking formal certification is often questioned, prompting judges to postpone verdicts until certified foreign experts are brought in resulting in higher costs and delays (Saktia, 2013).

The limited number of comprehensive studies analyzing the normative and practical aspects of KUHAP, RUU-KUHAP, and Law Number 2 of 2017 creates a regulatory void that may disadvantage both experts and the judicial process as a whole. Therefore, a critical and comparative analysis of these three instruments is essential to clarify the position, authority, and legal protection of experts in the context of Indonesian criminal law. Given the importance of expert roles and the regulatory complexities involved, this research is necessary to explore normatively and practically the position, authority, and legal protection of experts under KUHAP, RUU-KUHAP, and Law Number 2 of 2017. This comparative study is expected to provide recommendations for improving regulations so that expert functions in criminal justice are supported by legal certainty and ensure substantive justice for all parties.

This study aims to explore the position and role of experts in Indonesian criminal law based on KUHAP, RUU-KUHAP, and Law Number 2 of 2017, with the goal of providing greater legal certainty and enhanced protection for expert witnesses. Based on the background described above, the central issue of this research is the absence of studies that thoroughly examine the disharmony and synchronization of the role of experts in the perspective of Indonesian criminal law by comparing the regulatory provisions within KUHAP, RUU-KUHAP, and Law Number 2 of 2017 on Construction Services both normatively and in terms of judicial practice.

From this issue, the main research question is formulated as follows:

RQ1: How do the provisions of the Criminal Procedure Code (KUHAP) regulate expert testimony in criminal justice proceedings in Indonesia?

RQ3: How do the provisions of the Draft Criminal Procedure Code (RUU-KUHAP) regulate expert testimony in criminal justice proceedings in Indonesia?

RQ3: How do the provisions of Law Number 2 of 2017 regulate expert testimony in criminal justice proceedings in Indonesia?

2. Research Methods

This study employs a normative legal research method, which is a research approach based on literature studies involving primary and secondary legal materials to understand the applicable legal norms. According to Soerjono Soekanto and Sri Mamudji (2010), normative legal research is conducted through the examination of library materials or secondary data, which serve as the main source for legal analysis. The secondary data used in this research consist of several categories. First, primary legal materials, including statutory regulations such as the Criminal Procedure Code (KUHAP), the Draft Criminal Procedure Code (RUU-KUHAP), and Law Number 2 of 2017 on Construction Services. Second, secondary legal materials, comprising legal doctrines, scholarly opinions, textbooks, journal articles, and research reports related to expert testimony and criminal procedure law. Third, tertiary legal materials, such as legal dictionaries, encyclopedias, and other reference materials, are used to support conceptual clarity. All data are analyzed qualitatively to obtain systematic and coherent legal arguments.

The main objective of this research is to analyze the concept and legal position of "experts" within Indonesian criminal law, particularly as regulated in the Criminal Procedure Code (KUHAP), the Draft Criminal Procedure Code (RUU-KUHAP), and Law Number 2 of 2017 on Construction Services.

This study applies several normative approaches in accordance with the framework proposed by Marzuki (2005). First, the statute approach is used to examine legal provisions concerning expert testimony as regulated in the Criminal Procedure Code (KUHAP), the Draft Criminal Procedure Code (RUU-KUHAP), and the Construction Services Law. Second, the conceptual approach is employed to analyze the legal concept of "expert testimony" from the perspective of criminal law. Third, a limited comparative approach is used to review the regulation of experts within the criminal justice systems of other countries as comparative references.

3. Results and Discussion

3.1. Regulation of Expert Testimony under the Indonesian Criminal Procedure Code (KUHAP)

Before the enactment of the Criminal Procedure Code (*Kitab Undang Undang Hukum Pidana*/KUHAP), Indonesia's criminal procedure system still relied on Dutch colonial regulations, namely the Herziene Inlandsch Reglement (HIR) and Rechtsreglement Buitengewesten (RBg). These regulations were implemented dualistically, with HIR applied in Java and Madura, while RBg applied outside those regions. This dual system was considered incompatible with the spirit of independence and the legal needs of the Indonesian nation. According to Yuspin and Ajlin (2022), the continued use of colonial legal frameworks was largely due to the absence of a comprehensive national criminal procedure system in the early period following independence.

After gaining independence, Indonesia faced significant challenges in developing a national criminal justice system that aligned with Pancasila values and societal needs. The drafting of KUHAP began with the formation of a legislative drafting committee consisting of legal experts and practitioners tasked with preparing a law that could replace the colonial procedural system. The drafting process took considerable time because it had to address various issues, including the protection of human rights and the efficiency of criminal justice procedures.

Following an extensive process, KUHAP was officially enacted in 1981 through Law Number 8 of 1981. KUHAP was designed to replace HIR and RBg, with the primary objective of strengthening human rights protections and introducing a more modern and equitable criminal justice system. KUHAP adopted several principles from the adversarial system, such as the right of suspects to obtain legal counsel from the investigation stage and the requirement of at least two valid pieces of evidence before a conviction can be rendered. However, in practice, the implementation of KUHAP has faced ongoing challenges, including misuse of detention authority and the absence of sanctions for procedural violations committed by law enforcement officials (Yuspin & Ajlin, 2022).

The Criminal Procedure Code (KUHAP), first promulgated in 1981, represents a legal instrument aimed at structuring the procedures for implementing criminal law in Indonesia. Since its enactment, KUHAP has undergone various changes and reforms that

reflect social dynamics and evolving legal theories. The historical process of its formulation and application cannot be separated from the transformation of Indonesia's legal system after independence, which retained aspects of Dutch legal heritage while adapting to Indonesia's social and political realities (Kawengian, 2016; Rengkung, 2017).

Historically, the implementation of KUHAP stemmed from the need to create a criminal procedure system that was more transparent and just. KUHAP regulates various aspects of criminal proceedings, from investigation, prosecution, and trial, to execution. The implementation of KUHAP, rooted in principles of human rights and substantive justice, faced significant challenges in its early stages, particularly those related to administrative capacity and disparities in implementation across regions (Sulistyowati, 2016; Kristyanti, 2020).

According to Prasetyo (2019), although KUHAP introduced significant reforms, persistent issues remain, such as slow judicial processes and unequal enforcement of law between regions. This indicates that although KUHAP succeeded in integrating fundamental human rights principles, substantial implementation challenges continue to exist. In this context, KUHAP grapples with a dilemma between ensuring firm law enforcement and safeguarding individual rights.

Efforts to revise the KUHAP both those that have been undertaken and those still in progress demonstrate the state's commitment to adapting to contemporary developments, including technological advancements and international standards in criminal justice (Selang, 2012; Wahid, 2022). One notable reform initiative involves improving public access to judicial information and enhancing accountability among law enforcement officers involved at every stage of criminal proceedings. Since the early 2000s, Indonesia has attempted to revise KUHAP to strengthen human rights protections and align with developments in international criminal law. However, the new Draft Criminal Procedure Code (RUU-KUHAP) has not yet been enacted, and challenges in the implementation of the existing KUHAP continue to persist. Proposed reforms include strengthening the rights of suspects, ensuring adherence to fair trial principles, and enhancing the accountability of law enforcement authorities (Sulistyowati, 2008).

Philosophically, the Indonesian Criminal Procedure Code (KUHAP) was born from efforts to reform the national criminal justice system by upholding the values of justice, human rights protection, and legal certainty. In this context, KUHAP is not merely understood as a set of procedural rules, but rather as a manifestation of the national legal philosophy that seeks to free itself from colonial legal legacy (Marbun, 2015). KUHAP embodies the principles of legality, the presumption of innocence, and due process of law, which constitute the core pillars of a constitutional state. The application of the principle of presumption of innocence in KUHAP reflects philosophical values that place humans as dignified legal subjects. This principle asserts that the state must not treat an individual as a criminal without lawful proof obtained through proper procedures (Hidayat, 2017). Thus, KUHAP serves as an instrument to control the power of the state so that it does not act arbitrarily against its citizens.

Furthermore, KUHAP contains principles of balance between the authority of law enforcement agencies and the protection of the rights of suspects or defendants. This philosophy is rooted in the school of progressive legal thought, which emphasizes that law must serve substantive justice, not merely procedural formality (Lubis, 2019).

Therefore, KUHAP regulates legal assistance, the right to remain silent, and the right to legal remedies, all grounded in respect for human dignity.

KUHAP was also formulated within the philosophical framework of Pancasila, particularly the second and fifth principles: "Just and civilized humanity" and "Social justice for all Indonesian people." In this regard, criminal procedural law must not only function as a repressive tool but also as a rehabilitative and restorative instrument (Susanti, 2021). This is reflected in the growing discourse on restorative justice, which has begun to be accommodated in Indonesian criminal justice practice as a complement to the philosophical values embodied in KUHAP. Thus, from a philosophical perspective, KUHAP is not merely a compilation of procedural norms but a reflection of the Indonesian nation's worldview that upholds justice, humanity, and the supremacy of law. The challenge ahead lies in ensuring that these philosophical values are genuinely implemented in legal practice that is fair and non-discriminatory (Putra et lal. 2017; Alamri, 2017).

The Indonesian Criminal Procedure Code (KUHAP), enacted through Law Number 8 of 1981, marked a transition from the colonial-era HIR system to a national criminal justice system that places greater emphasis on human rights (Muladi, 2002). According to Soekanto (2010), with the implementation of KUHAP, Indonesia adopted fundamental principles of modern judicial processes such as procedural transparency, integrated examination, and legal certainty guarantees. Normatively, KUHAP serves as *lex specialis* that comprehensively regulates the stages of investigation, inquiry, prosecution, and execution of criminal decisions, replacing the previous generic norms governing criminal procedure.

One of the most fundamental breakthroughs of KUHAP is the recognition of the presumption of innocence as stipulated in Article 8 paragraph (1), which states that "every person shall be presumed innocent until a court decision declares their guilt with permanent legal force." Saroinsong (2023) argues that this provision aligns with the *fair trial* principles of the International Covenant on Civil and Political Rights (ICCPR), which Indonesia ratified in 2005. Afriyanti (2025) adds that this principle obliges law enforcement officers to base every action on valid evidence, thereby minimizing the potential for arbitrary measures during the investigation stage.

As a mechanism for controlling law enforcement authorities, KUHAP introduced the pretrial institution (*praperadilan*) as regulated in Articles 77–83. Simanjuntak (2017) notes that the purpose of pretrial proceedings is to provide an effective remedy for suspects to challenge unlawful arrests, detentions, or seizures. However, in practice, many pretrial petitions are processed merely on formal grounds without examining the substantive basis of the detention (Simanjuntak, 2017). Saroinsong (2023) emphasizes the need to strengthen the authority of pretrial judges to ensure that the institution functions as a genuinely independent oversight mechanism, rather than a mere procedural formality. From the perspective of the theory of state power, KUHAP is viewed as an instrument of control and limitation that places law enforcement authorities within a strict normative framework. Sulistyowati (2008) explains that KUHAP formalizes the authority of the police and the prosecution through regulated procedures such as detention authorization and time limits for investigations, thereby preventing abuses of power.

Structurally, KUHAP applies the theory of an integrated legal system by dividing the criminal process into sequential stages preliminary inquiry, investigation, prosecution, trial, and execution—each of which is interconnected yet characterized by distinct duties and functions (Barda Nawawi Arief, 2016). This division aligns with the concept of separation of powers within the criminal justice system, positioning judges as guardians of independence and fairness in judicial proceedings. Within the framework of harmonizing national norms with international standards (international law harmonization theory), KUHAP must continuously be aligned with instruments such as the ICCPR and the Convention Against Torture. Saroinsong (2023) highlights the urgency of revising KUHAP to strengthen the right to legal assistance from the earliest stage of investigation and to accommodate mechanisms for compensation for victims of procedural violations.

Article 1(27) of KUHAP defines expert testimony as "information provided by a person who possesses special expertise regarding matters necessary to clarify a criminal case for the purpose of examination" (Law Number 8/1981). Conceptually, this provision acknowledges that not all technical or scientific matters such as forensics, ballistics, or financial analysis can be addressed by judges or investigators, thus requiring professional opinions grounded in scientific methodology and experience (Butt & Nathaniel, 2024). In recent Indonesian judicial practice, there has been a significant increase in the use of expert testimony, particularly from criminal law academics, to explain the normative significance and interpretation of KUHAP provisions themselves. Both the prosecution and the defense frequently summon the same criminal law scholars, hoping that their opinions will influence judicial reasoning, even though studies show that their actual impact on verdicts tends to be minimal.

Procedurally, KUHAP requires expert testimony to be submitted in written form (papers/ade et pulverem) and presented in court for cross-examination (Article 132 paragraphs 1–4, KUHAP). According to Butt and Nathaniel (2024), the absence of formal guidelines on expert qualifications such as minimum standards for education, professional experience, or institutional accreditation has led to inconsistent quality and an increased risk of bias, given that these requirements are neither regulated in the KUHAP nor in its implementing regulations.

Furthermore, advancements in forensic methodology and scientific knowledge create new challenges: how to ensure that expert testimony remains objective and evidence-based rather than serving as rhetorical support for the party that presents the expert (Butt & Nathaniel, 2024). Without a binding code of ethics or certification authority, experts may face conflicts of interest becoming "disguised advocates" which undermines the legitimacy of the judicial process.

To enhance the clarity and accountability of expert testimony, a revision of the KUHAP is necessary to incorporate formal criteria for expert qualifications such as education, licensing, and professional experience along with mandatory disclosure of potential conflicts of interest and the establishment of an independent accreditation body and a code of ethics to safeguard the integrity of expert opinions (Butt & Nathaniel, 2024). Furthermore, harmonizing national legal norms with international best practices, including the Daubert standard in the United States and pan-European models, would significantly strengthen the credibility of expert testimony as reliable and accountable evidence within the criminal justice system.

The wording of Article 1(28), particularly when interpreted in relation to experts possessing "special expertise," warrants deeper scholarly and institutional analysis. Moreover, the requirement for experts to hold specific certifications, as proposed in the Draft KUHAP (RUU KUHAP), must be subjected to critical evaluation. This is important because certain types of expertise (such as highly practical or informal skills) may not be accompanied by formal certificates, and therefore the certification requirement must be harmonized to ensure KUHAP's improvement and applicability.

Furthermore, Article 183 of KUHAP stipulates that "Judges shall not impose a criminal sentence upon a person unless at least two lawful pieces of evidence and the judge's conviction establish that a criminal act truly occurred and that the defendant is guilty of committing it." This provision highlights the characteristics of the negative statutory proof system (*negatief wettelijke bewijs theory*), which requires a minimum of two lawful pieces of evidence before a conviction may be rendered, thereby ensuring legality and legal certainty in criminal proceedings (KUHAP, Article 183). From the perspective of contemporary evidence theory, Butt and Nathaniel (2024) discuss how the "two pieces of evidence" standard functions as a normative filter to uphold the principle of a fair trial. They emphasize that this minimum requirement compels investigators and prosecutors to present evidence more systematically and transparently, reducing the risk of wrongful convictions based solely on judicial intuition or external pressure.

The element of judicial conviction (*conviction raisonnée*) becomes a crucial component of Article 183. Butt and Nathaniel (2024) explain that although the negative statutory system places emphasis on evidence, the judge's reasoned conviction regarding the quality and relevance of the evidence remains essential to reach the standard of *beyond reasonable doubt*. Thus, judges must not only verify the existence of evidence but also examine its consistency and probative value in constructing the factual narrative established during trial. In practice, the implementation of Article 183 faces obstacles such as the lack of adequate documentary evidence and difficulties in presenting credible witnesses in court. Dixon and Gill (2002) observe that in many cases particularly those involving corruption and organized crime key witnesses are reluctant to testify due to the risk of intimidation, thereby compelling judges to rely heavily on documentary evidence, which may not always be sufficient to meet the requirement of two lawful pieces of evidence.

3.2. Regulation of Expert Testimony in the Draft Criminal Procedure Code

Article 42(a) of the Draft Criminal Procedure Code (*Rancangan Undang Undang Kitab Undang Undang Hukum Pidana*/RUU KUHAP) states: "knowledge in a specific field as evidenced by an academic diploma or certain certificates; and/or." O'Brien (2016) emphasizes that formal recognition of expertise through diplomas or certificates facilitates administrative and substantive certainty in judicial practice. He explains that the scientific basis for validating formal credentials helps bridge the gap between scientific knowledge and legal application, enabling judges to assess expert evidence systematically and consistently.

DeMatteo et al. (2019) demonstrate that academic degrees reflect deep understanding of theoretical frameworks and methodologies, supported by the rigorous peer-review nature of higher education. They argue that university degrees serve as objective benchmarks of conceptual competence, reducing subjective debates regarding

educational background. Cutler and Kovera (2015) highlight the importance of professional certification in assessing specific practical skills, such as digital forensics or forensic accounting. Their empirical study shows that certificates issued by accredited institutions significantly increase judicial confidence in expert testimony, particularly in cases requiring highly technical expertise.

Cutler and Kovera (2015) also emphasize unequal access to certification, especially for professionals in remote regions or low-income communities. They propose subsidies or partnerships with accredited training institutions to ensure that Article 42(a) does not become a barrier for competent experts with limited financial resources.

Manurung (2022) compare models of expert qualification testing in the United States, especially after the *Daubert* decision, which emphasizes "testable methodology" and "known error rates." They propose that the RUU KUHAP incorporate similar principles by requiring methodological evidence supporting the diploma or certificate submitted as the basis for expert opinion. Lopatka (2016), in *Economic Expert Evidence*, emphasizes that the economic or statistical relevance of expert testimony is frequently misunderstood in courtroom settings. He argues that the mere presentation of diplomas and certificates must be accompanied by a substantive assessment of whether the claimed expertise is contextually relevant to the case at hand for instance, whether a qualification in statistics is genuinely applicable to the interpretation of the defendant's financial data.

Article 1 number 42(a) of the RUU KUHAP illustrates that an expert must possess formal educational background in the relevant field, indicating mastery over crucial theories and concepts required for courtroom explanation. For instance, a forensic expert appearing in a homicide case must hold a formal degree in forensic medicine or general medicine to demonstrate sufficient theoretical foundation for real-world application. However, Article 42(a)(1) rigidly states that the only proof of competence is a diploma or certificate. In practice, many experts have decades of field experience but no formal certificates due to informal industry structures. This rigid formulation disregards competence based on real-world experience and professional reputation (Asshiddiqie, 2007). For example, a tire repair specialist who is widely recognized within the local automotive community for his expertise including the ability to address complex issues such as run-flat and high-pressure tubeless tires may nonetheless lack formal mechanical diplomas or forensic certifications. Under Article 42(a), his technical testimony would be rejected solely due to the absence of formal credentials, even though his knowledge could be crucial in uncovering the cause of a traffic accident. Excluding such non-formally trained expert risks depriving the court of practical insights needed to establish material facts (Hanafi & Pamuji, 2019).

In several countries, such as the United States, qualifications based on "training on the job" and "peer recognition" are also accepted as expert foundations (Federal Rules of Evidence, Rule 702). This model allows a tire repair specialist recognized by an automotive technicians' association to serve as a vehicle-forensic expert (Luthfi, 2025). To ensure inclusiveness and fairness, Article 42(a)(1) should be revised to include provisions such as "professional experience in a specific field supported by professional association recommendations or documented fieldwork." This would ensure that non-formal expertise remains measurable and objectively verifiable. O'Brien (2016) agree that Article 42(a) needs additional mechanisms such as periodic reassessment and expert registry maintenance. They also recommend administrative or criminal sanctions for

forged documents and suggest promoting transparency of diplomas and certificates through standardized digital platforms.

Article 42(b) reads: "experience and special skills related to the criminal event." Article 42(b)(1) underscores the importance of recognizing experience and specialized skills acquired through direct field practice, not merely through formal diplomas or certificates. According to Expert Witness, practical expertise includes "knowledge, skills, and experience possessed by someone that are not commonly known by laypersons but highly relevant to the technical aspects of a case."

Narratives of individuals who have become "experts by experience" highlight that direct, practice-based knowledge such as that acquired by profilers who develop investigative strategies through sustained field engagement can constitute a strong foundation for courtroom testimony (DeMatteo et al., 2019). Expertise obtained solely from academic theory is often insufficient to understand field dynamics such as suspect behavior patterns or modus operandi. Expert Witness highlights that special skills such as crime scene analysis or trace pattern interpretation can only be refined through repeated practice in real-case environments. The Narratives of Experts by Experience study in 2023 shows that experience-based experts such as former offenders turned rehabilitation consultants often explain criminal patterns more effectively than purely academic experts (John et al., 1981; Umboh, 2013).

Despite its value, practical experience poses challenges in measurement and verification. Expert Witness proposes using case portfolios and peer testimonials as tools for verifying prior experience. By integrating Articles 42(a) and 42(b), the approach envisaged by the Draft KUHAP (RUU KUHAP) reflects an ideal model that combines formal qualifications with substantive field experience. DeMatteo et al. (2019) underscore the importance of "dual credentialing," namely the recognition of both formal certification and documented professional practice, as a minimum standard for validating expert competence. By accommodating field expertise, judges gain a more holistic understanding of case facts, resulting in more accurate decisions. Expert Witness notes that practically experienced experts significantly enhance judicial confidence when evaluating forensic and technical evidence. Based on both sources, it is necessary to add a verification provision, such as experience and special skills must be proven by a case portfolio, professional association recommendations, or peer evaluation documents. This ensures a balanced approach between formal credentials and recognition of real-world expertise (Mwirigi, 2024).

Article 43 states: "Expert Testimony is evidence in criminal cases in the form of statements given by Experts at the Investigation, Inquiry, Prosecution, and/or Court Examination stages." Expert testimony refers to statements provided by individuals possessing specialized knowledge to clarify technical or scientific aspects of a criminal case. According to the Encyclopedia of Crime and Punishment (2024), expert testimony assists judges in understanding non-common facts, such as forensic analyses or interpretations of digital data.

At the investigation stage, expert testimony is often used to determine the initial direction of the inquiry, such as identifying biological traces or analyzing the structural aspects of a crime scene. Roberts and Stockdale (2018) show that early expert involvement improves investigative efficiency by reducing procedural errors. During the inquiry stage, investigators require deeper technical elaboration, such as digital forensic

analysis. Coen and Heffernan (2024) observe that expert testimony at this phase allows investigators to apply scientific methodologies to validate electronic evidence before filing the case.

At the prosecution stage, prosecutors rely on expert opinions to strengthen indictments, especially in cases involving complex scientific evidence. The study Evidence from Criminal Law Experts in Indonesian Criminal Trials (2023) found that indictments are more likely to be accepted by judges when accompanied by detailed and systematic forensic expert opinions. During court hearings, experts are presented to provide direct explanations and answer questions from judges, prosecutors, and defense counsel. Roberts and Stockdale (2018) emphasize the importance of high-quality expert presentation, including the expert's ability to simplify technical terms for judicial comprehension.

Despite its importance, expert testimony often faces scrutiny regarding potential bias, conflicts of interest, or methodological inaccuracies. Cossins (2013) found that in sexual violence cases, expert credibility may be questioned if research background or field experience lacks transparency. Coen and Heffernan (2010) propose procedural reforms such as judicial training in assessing expert testimony, standardized reporting formats, and more structured cross-examination mechanisms to safeguard the substantive truthfulness of expert statements.

3.3. Regulation of Expert Testimony under Law Number 2 of 2017 on Construction Services

Article 61 paragraph (1) stipulates that expert assessors referred to in Article 60 paragraph (2) must fulfill several cumulative requirements. First, they are required to possess a Work Competency Certificate at the expert level in a field that corresponds to the classification of the building product that has experienced a building failure. Second, expert assessors must have relevant professional experience as planners, executors, and/or supervisors in construction services in accordance with the classification of the failed building product. Third, they must be officially registered as expert assessors with the ministry responsible for administering governmental affairs in the field of construction services.

In the context of construction, an expert assessor is an individual who provides an official technical opinion concerning the causes of building failure or construction defects. Milroy (2017) emphasizes the importance of the status of "expert witness" to ensure that every technical conclusion can be scientifically and procedurally justified. The requirement under point (a) a Work Competency Certificate aligns with the Evaluator Competencies Assessment Tool (ECAT) developed by Manurung (2022), where professional certification serves as formal proof of capability, methodology, and a standardized assessment track record. Point (b) highlights practical experience whether as planner, executor, or supervisor which corresponds to the findings of Zheng et al. (2019) in "Competency Assessment for State Highway Agency Project Managers", showing that project management experience significantly influences the accuracy of risk estimation and structural failure mitigation. The requirement in point (c) for registration with the relevant ministry corresponds with the gatekeeping principle for expert witnesses described by Du (2017), where an official registry reduces risks of bias and conflicts of interest through administrative transparency and accountability.

Beyond certificates and technical experience, in the Competency Screening Test stresses the importance of soft skills communication, ethics, and critical analysis as integral components of an expert assessor's competency to ensure that assessment results are understandable and acceptable to all stakeholders. Priyambodo (2021) highlight challenges in validating certificates and experience portfolios, recommending an integrated electronic verification system (e.g., digital registries) to ensure document authenticity and prevent falsification that could undermine credibility. In construction disputes involving structural collapse or damage, expert assessors with substantial field experience have proven crucial in identifying defects in design or implementation. Zheng et al. (2019) note that assessment accuracy correlates significantly with relevant project experience, making Article 61(b) grounded on strong empirical justification. To optimize Article 61, it is recommended to include clauses on periodic evaluation for example, re-certification every five years and the creation of a national database of expert assessors containing certificates, project portfolios, and disciplinary records, as proposed by Milroy (2017) and Du (2017) for a sustainable registry model.

Article 61 paragraph (2) provides that an expert assessor referred to in paragraph (1) is entrusted with a series of substantive duties in relation to building failure assessment. These duties include determining the level of compliance with Safety, Security, Health, and Sustainability (SSHS) standards in the implementation of construction services, identifying the causes of the building failure, and assessing the extent of building collapse and/or non-functionality. In addition, the expert assessor is responsible for determining the party or parties liable for the building failure and is required to submit the results of the assessment to the Minister and the authority issuing the building permit within ninety working days from the commencement of the assignment. Furthermore, the expert assessor must provide policy recommendations to the Minister aimed at preventing future building failures.

Milroy (2017) asserts that an expert assessor does not merely provide technical opinions but also functions as a guardian of the quality of criminal or civil evidence, where every finding must be based on tested methodology and professional standards. Du (2017) adds that the duties of assessors must be designed to minimize bias and conflicts of interest so that each conclusion is scientifically and ethically defensible.

Mwirigi (2024), through the ECAT framework, emphasize multidimensional competency measurement: technical knowledge, application of safety standards, and sustainability. They show that compliance audits by expert assessors should use standardized checklists calibrated with local and international benchmarks.

In relation to determining the causes of building failure, Zheng et al. (2019), drawing on their study of state highway projects, show that accurate identification of structural failure depends on an integrated approach combining design analysis, field inspection, and forensic engineering. They stress the need for layered investigative protocols to correctly identify root causes, whether material, design, or execution-related.

Roberts and Stockdale (2018), in Explaining and Trusting Expert Evidence, further argue that the assessment of the degree of collapse or functional dysfunction must rely on quantitative methodologies, such as collapse indices or loss-of-function scales documented in forensic literature. The use of such measurable indicators enables

objective classification and ensures that expert conclusions are capable of replication and verification.

With respect to determining responsibility, Du (2017) underscores the value of a systematic "chain of responsibility" analysis that traces each phase of design, execution, and supervision. This approach is reinforced by Fernanda (2025) who contend that comprehensive audits of project documentation including contracts, change orders, and progress reports should form the evidentiary basis for attributing professional responsibility.

Arini and Sujarwo (2021) further observe that reporting deadlines, such as the requirement to submit findings within 90 working days, function as internal quality control mechanisms. They recommend a standardized report format including an executive summary, methodology, key findings, and field data appendices. Milroy (2017) emphasizes that compliance with this deadline is crucial to prevent administrative stagnation and enable swift action by relevant authorities.

Finally, the formulation of preventive policy recommendations is highlighted as a core component of expert assessment. The SAGE Reference (2024), through its Competency Screening Test, stresses that experts must develop evidence-based recommendations ranging from revisions of technical standards to enhanced personnel training and strengthened field supervision frameworks to mitigate the risk of future failures. Milroy (2017) further asserts that such recommendations should be supported by both quantitative data and qualitative reasoning to ensure their credibility and utility for policymakers.

Article 61 paragraph (2) requires a comprehensive assessment, ranging from SSK3 compliance audits to national policy recommendations. Roberts and Stockdale (2018) highlight that such a framework requires standardized methodologies and continuous training to ensure expert assessor performance remains accurate and trustworthy. Therefore, Law Number 2/2017 can be optimized through the development of detailed technical guidelines and periodic re-certification programs for expert assessors.

4. Conclusion

The role of experts in Indonesia's criminal justice system is essential to ensuring objectivity and accuracy in the evidentiary process, particularly in cases requiring technical or scientific expertise. However, the Criminal Procedure Code (KUHAP) refers to "expert testimony" only in general terms, without detailing technical roles such as designing, supervising, or evaluating case-related matters. The Draft Criminal Procedure Code (RUU-KUHAP) begins to introduce provisions on certification and experience, yet it remains unclear to what extent experts may be involved beyond providing opinions. Meanwhile, the Construction Services Law (Law Number 2 of 2017) regulates the duties of expert assessors more explicitly, but these provisions are not integrated into criminal procedure practice, resulting in multiple interpretations of expert authority.

KUHAP does not require formal certification, allowing the use of non-certified experts, whereas the RUU-KUHAP restricts expert qualifications to those with diplomas or certificates—thus excluding "experts by experience." The Construction Services Law

requires a Work Competency Certificate and formal registration but does not provide mechanisms for recognizing non-formal expertise within criminal proceedings.

These three legal instruments operate separately: KUHAP for general criminal procedure, the RUU-KUHAP as a partial revision, and the Construction Services Law for the qualification of construction experts. Without a unified framework, the appointment and assessment of experts in criminal courts are often hindered by differing requirements and procedures.

There are no provisions offering protection or sanctions for experts involved in criminal proceedings, whether their testimony is challenged or they are summoned without clear procedures. As a result, the credibility of expert opinions and the legal certainty afforded to experts remain inadequately guaranteed.

Recommendations for improving and refining the relevant regulatory framework include the harmonization of norms through the establishment of unified guidelines governing expert criteria, appointment mechanisms, and protection measures applicable across all types of criminal cases. In addition, regulatory recognition of a dual-credentialing model encompassing both formal certification and demonstrable practical experience, such as professional portfolios and peer recommendations is essential to ensure that non-formal expertise remains objectively measurable. These reforms should be complemented by the establishment of an independent accreditation body and a national registry of experts to enable continuous verification, periodic re-certification, and effective enforcement of ethical standards. Finally, the regulatory framework should incorporate legal protection clauses that provide experts with limited immunity while simultaneously imposing sanctions for the misuse of expert testimony or the falsification of professional credentials.

5. References

Journals:

Afriyanti, D. (2025). Akuntabilitas dan standar profesi ahli forensik di indonesia: tinjauan yuridis terhadap kekuatan keterangan ahli di persidangan. *Causa: Jurnal Hukum dan Kewarganegaraan*, *15*(8), 121-130.

Alamri, H. (2017). Kedudukan Keterangan Ahli Sebagai Alat Bukti Menurut Kitab Undang-Undang Hukum Acara Pidana. *Lex Privatum*, *5*(1).

Arini, K. N., & Sujarwo, H. (2021). Kedudukan Saksi Ahli dalam Persidangan Perkara Pidana. *Syariati*, *7*(2), 541207.

Butt, S., & Nathaniel, A. (2024). Evidence from criminal law experts in Indonesian criminal trials: Usurping the judicial function? *The International Journal of Evidence & Proof*, *28*(2), 129–153.

Coen, M., & Heffernan, L. (2010). Juror comprehension of expert evidence: A reform agenda. *Criminal Law Review*, *3*, 195–211.

DeMatteo, D., Fishel, S., & Tansey, A. (2019). Expert evidence: The (unfulfilled) promise of Daubert. *Psychological Science in the Public Interest*, *20*(3), 129–134.

Dixon, L., & Gill, B. (2002). Changes in the standards for admitting expert evidence in federal civil cases since the Daubert decision. *Psychology, Public Policy, and Law*, *8*(3), 251.

Du, M. (2017). Legal control of expert witness bias. *The International Journal of Evidence & Proof*, *21*(1–2), 69–78.

Fernanda, T. (2025). Alat bukti dalam hukum acara pidana Indonesia. *Causa: Jurnal Hukum dan Kewarganegaraan*, *16*(1), 121-130.

Hanafi, H., & Pamuji, R. A. (2019). Urgensi Keterangan Ahli Sebagai Alat Bukti Berdasarkan Sistem Peradilan Pidana di Indonesia. *Al-Adl: Jurnal Hukum*, *11*(1), 81-90.

John J. Randolph, Terry Hicks, & Mason, David. (1981). The Competency Screening Test: A Replication and Extension. *Criminal Justice and Behavior,* 8(4), 512-525.

Kawengian, T. A. (2016). Peranan Keterangan Saksi Sebagai Salah Satu Alat Bukti Dalam Proses Pidana Menurut KUHAP. *Lex Privatum*, *4*(4).

Kotsoglou, K. N., & Biedermann, A. (2022). Inroads into the Ultimate Issue Rule? Structural Elements of Communication between Experts and Fact-Finders. *The Journal of Criminal Law*, *86*(4), 223-240.

Kristyanti, L. P. (2020). Saksi Ahli Sebagai Alat Bukti Dalam Hukum Acara Pidana Indonesia. *Kertha Semaya*, *8*(9).

Lopatka, J. E. (2016). Economic expert evidence: The understandable and the "huh?". *The Antitrust Bulletin*, *61*(3), 434-460.

Luthfi, F. (2025). Augmented Reality Evidence: A Study of The Validity of Virtual Evidence in Islamic Courts. *Jurnal Akta*, *12*(3), 959-974.

Manurung, E. H. (2022). Kontrak Konstruksi Infrastruktur Ditinjau Dari Perspektif Undang-Undang Nomor 2 Tahun 2017 Tentang Jasa Konstruksi. *Legal Studies Journal*, *2*(2).

Milroy, C. M. (2017). A brief history of the expert witness. *Academic forensic pathology*, *7*(4), 516-526.

Mwirigi, M. O. (2024). Developing and Validating the Evaluator Competencies Assessment Tool (ECAT) Cultural Competencies Subscale. *American Journal of Evaluation*, *45*(2), 280–291.

Priyambodo, M. A. (2021). Mekanisme Penyelesaian Sengketa Konstruksi Menurut Undang-Undang Nomor 2 Tahun 2017 Tentang Jasa Konstruksi. *Iblam Law Review*, *1*(3), 173-177.

Putra, A. W., Rozah, U., & Baskoro, B. D. (2017). Kajian tentang Penggunaan Keterangan Ahli Hukum Pidana dalam Praktik Pembuktian Perkara Pidana. *Diponegoro Law Journal*, *6*(2), 1-12.

Rengkung, F. J. (2017). Tanggung Jawab Hukum Terhadap Penyedia Barang Dan Jasa Dalam Pelaksanaan Jasa Konstruksi Berdasarkan Undang-Undang Nomor 2 Tahun 2017 Tentang Jasa Konstruksi. *Lex Crimen*, *6*(9).

Saktia, M. P. (2013). Implikasi Yuridis Perluasan Definisi Saksi Dan Keterangan Saksi Berdasarkan Putusan Mahkamah Konstitusi Nomor. *Verstek*, *1*(3).

Saroinsong, L. A. (2023). Asas Praduga Tak Bersalah (Presumption of Innocence) Dalam Perspektif Hak Asasi Manusia. *Lex Administratum*, *11*(1).

Selang, D. J. (2012). Kedudukan Keterangan Saksi Untuk Pencarian Kebenaran Material Dalam Perkara Pidana. *Lex Crimen*, *1*(2).

Setiawan, I. (2018). Tindak Pidana Perkosaan Dalam Tinjauan Hukum Pidana Indonesia. *Jurnal Ilmiah Galuh Justisi*, *6*(2), 227–239.

Shuman, D. W., & Sales, B. D. (1999). The impact of Daubert and its progeny on the admissibility of behavioral and social science evidence. *Psychology, Public Policy, and Law*, *5*(1), 3.

Stockdale, M., & Jackson, A. (2016). Expert evidence in criminal proceedings: Current challenges and opportunities. *The Journal of Criminal Law*, *80*(5), 344-363.

Sulistyowati, H. (2016). Paradigma Penegakan Hukum Lingkungan Berdasarkan Asas Kepastian Hukum, Kemanfaatan, dan Keadilan. *RECHTSTAAT*, *8*(1).

Umboh, P. J. (2013). Fungsi dan Manfaat Saksi Ahli Memberikan Keterangan dalam Proses Perkara Pidana. *Lex Crimen*, *2*(2).

Wahid, A. (2022). Keadilan Restoratif: Upaya Menemukan Keadilan Substantif. *Jurnal Ius Constituendum*, *7*(2), 307–321.

Ward, T. (2009). Usurping the role of the jury? Expert evidence and witness credibility in English criminal trials. *The International Journal of Evidence & Proof*, *13*(2), 83-101.

Yuspin, W., & Ajlin, A. (2022). History of the Implementation and Development of the Criminal Law (KUHP) of the Dutch Colonial Heritage in Indonesia. *International Journal of Social Science Research and Review*, *5*(9), 514–520

Zheng, C., Yuan, J., Li, L., & Skibniewski, M. J. (2019). Process-Based Identification of Critical Factors for Residual Value Risk in China' s Highway PPP Projects. *Advances in civil engineering*, *2019*(1), 5958904.

Books:

Arief, B. N. (2016). *Bunga rampai kebijakan hukum pidana*. Jakarta: Prenada Media.

Asshiddiqie, J. (2007). Pokok-pokok hukum tata negara Indonesia pasca reformasi. *(No Title)*.

Cutler, B. L., & Kovera, M. B. (2010/2015). *Evaluating Eyewitness Identification (Best Practices in Forensic Mental Health Assessments)*. Oxford: Oxford University Press.

Hamzah, A. (2006). *Hukum Acara Pidana Indonesia*. Jakarta: Sinar Grafika.

Marzuki, P. M. (2005). *Penelitian Hukum*. Jakarta: Kencana Prenada Media Group.

Muladi. (2002). *Hak Asasi Manusia dan Sistem Peradilan Pidana*. Semarang: Badan Penerbit Universitas Diponegoro.

Muladi. (2010). *Kapita Selekta Sistem Peradilan Pidana*. Semarang: Badan Penerbit Universitas Diponegoro.

O'brien, D. (2016). *An introduction to the theory of knowledge*. New York: John Wiley & Sons.

Roberts, P., & Stockdale, M. (Eds.). (2018). *Forensic science evidence and expert witness testimony: reliability through reform?*. Edward Elgar Publishing.

Simanjuntak, P. (2017). *Hukum Perdata Indonesia*. Jakarta: Kencana Prenada Media Group.

Soerjono, S. (2014). *Faktor-Faktor yang Mempengaruhi Penegakan Hukum*. Jakarta: Rajawali Press.

Soerjono, S., & Mamudji, S. (2010). *Penelitian Hukum Normatif Suatu Tinjauan Singkat*. Jakarta: Raja Grafindo Persada.