

LEGAL VALIDITY OF THE USE OF GRAPHONOMY AS AN EVIDENTIARY INSTRUMENT IN BUSINESS DISPUTES IN THE DIGITAL AGE

Melki T. Tunggati

Universitas Bina Taruna Gorontalo

melkitunggati@gmail.com

ABSTRACT

Business disputes involving document and signature forgery are increasingly becoming a concern in the digital era, where technology makes it easier to manipulate documents electronically. One method used to prove the authenticity of documents is graphonomy, which analyzes handwriting and signatures to identify forgeries. However, the acceptance of graphonomy as evidence in the Indonesian legal system, especially in digital business disputes, still faces various challenges. This study aims to examine the legal validity of the use of graphonomy in proving business disputes in the digital era as well as the associated challenges and solutions. The results of the study indicate that graphonomy has the potential to be accepted as valid evidence in Indonesian courts. However, the main challenges faced are the lack of clear regulations regarding the use of graphonomy in the digital context, as well as advances in forgery technology that make graphonomic analysis increasingly complex. In addition, the credibility of graphonomists is also an important issue, especially in terms of the reliability of the methods used in analyzing digital signatures. As a solution, it is recommended to develop clearer legal standards and standardized procedures regarding the use of graphonomy in digital documents. Increasing judges' and lawyers' understanding of graphonomy is also an important step towards increasing the acceptance of this method in court. Thus, graphonomy can become a credible and effective evidence in resolving business disputes involving digital documents.

Keywords: *Graphonomy; Proof; Business Disputes; Digital Age*

INTRODUCTION

In the increasingly developing digital era, business transactions are not only carried out directly but also through various digital platforms. However, this development also increases the risk of document forgery, especially in business contracts, signatures, and letters of agreement. Document forgery is one form of crime that often occurs in business disputes, either in the form of forgery of signatures or changes to the contents of documents without the knowledge of the parties concerned. To overcome this problem, graphonomic analysis, the science that studies handwriting and signatures to identify the authenticity of a document, is increasingly gaining attention as an instrument of evidence in legal processes.

Graphonomy is one of the forensic science groups, which is used to uncover a criminal act of forgery of documents, letters and signatures. This science is often referred to as forensic graphonomy, which is a part of criminal law that studies, identifies, analyzes, evaluates and knows a person's personality through handwriting which is used for the benefit of the courts, especially in criminal investigations¹. According to Ni Luh Nova Febriani in her research, graphonomy is the art of studying handwriting. Because handwriting comes from the human brain, what is poured into the writing is the fruit of his thoughts. These human thoughts can

¹Firganefi, & Fardiansyah, A. I. (2014). *Hukum dan Kriminalistik*. Bandar Lampung: Justice Publisher.

provide a picture or reflect human personality. Therefore, the form, writing style, and characters in each person are not the same².

In Germany, graphonomy is used in financial cases to uncover forged signatures and business documents. Banks and insurance companies use this method to detect forged signatures in suspicious financial transactions. In the United States, the Federal Bureau of Investigation (FBI) and forensic agencies in the United States use graphonomy to investigate fraud, document forgery, and corporate crime. In business disputes, handwriting analysis is often used in cases of contract disputes and the validity of legal documents³. The use of graphonomy in handling business disputes in various countries is a signal that this method can be adopted and utilized by countries that have not yet implemented it.

Although graphonomy has been widely used in forensics and investigations, its validity as evidence in court is still debated. Some legal systems recognize graphonomy as valid evidence, while others still consider its reliability and objectivity aspects. This is due to the possibility of differences in interpretation between graphonomy experts and the limitations of methods in dealing with increasingly complex digital signature forgeries. Therefore, it is important to examine the legal validity of the use of graphonomy in proving business disputes, especially in the context of law in the increasingly dynamic digital era.

For example, in the case decided by the Medan District Court Number:1367/Pid.B/2024/PN.Mdn against the defendants Yansen (66) and Meliana Jusman (66) where the trial was led by M. Nazir, SH., MH as the chief judge and two member judges, namely Efrata Happy Tarigan, SH., MH and Khairulludin, SH., MH. The two defendants who are husband and wife were charged with forging a signature on behalf of Hok Kim as Director of CV Pelita Indah which caused losses of up to IDR 583 billion. However, in the verdict, the actions of the two defendants were proven to exist, but were categorized as neither a civil act nor a criminal act. Therefore, the Judge requested that the position and dignity of the two defendants be restored, by issuing a Decision of Acquittal from Legal Charges (*onslag van rechtavervolging*)⁴. On the other hand, Alvin Lim, an Advocate and founder of LQ Indonesia Law Firm, in Wartasidik.co questioned the acquittal verdict which was considered beyond reason, because if the acquittal verdict means that the act is proven but not a criminal act, it means that the judge believes that the couple was proven to have committed the act of falsifying documents but the act was not a criminal act⁵. Currently the case is under cassation examination at the Supreme Court of the Republic of Indonesia.

Several acts of document forgery also occur in the civil realm, one example of which is in a case decided by the Bandung High Court Number: 256/PDT/2020/PT.BDG. This case began with the creation of a Deed of Transfer of Rights and Power of Attorney by Notary C on November 30, 2009, involving parties A and B. However, B denied ever signing the deed or knowing A or Notary C. There were indications of forgery of the signature and identity of the person appearing by the party claiming to be B, so that the deed was considered invalid. Party B felt aggrieved and sued the Bekasi District Court, which was then decided by the Bandung High Court (Decision No. 256/PDT/2020/PT.BDG). The Bandung High Court Decision No.

²Febriani, N. L. (2018). *Analisis Pembuktian Tindak Pidana Pemalsuan Surat Dan Tanda Tangan Dengan Menggunakan Ilmu Bantu Grafonomi Forensik*. Bandar Lampung: Fakultas Hukum Universitas Lampung.

³Suhandi, A. (2020). *Perkembangan Ilmu Grafonomi Dalam Sengketa Ekonomi*. Mataram: Starmedia Publishing.

⁴Indonesia, M. A. (2024). *Putusan Pengadilan Negeri Medan Nomor: 1367/Pid.B/2024/PN.Mdn terhadap terdakwa Yansen dan Meliana Jusman*. Diambil kembali dari www.putusan3.mahkamahagung.go.id: <https://putusan3.mahkamahagung.go.id/direktori/index/pengadilan/pn-medan/kategori/pidana-umum-1/page/2.html>

⁵WARTASIDIK. (2024, 11 18). *Pertanyakan Kualitas Serta Integritas Hakim di Pengadilan Negeri Medan, Alvin Lim: Jangan Lacurkan Kemuliaan Hakim*. Diambil kembali dari www.wartasidik.co: <https://wartasidik.co/pertanyakan-kualitas-serta-integritas-hakim-di-pengadilan-negeri-medan-alvin-lim-jangan-lacurkan-kemuliaan-hakim/>

256/PDT/2020/PT.BDG stated that the Deed of Transfer of Rights and Power of Attorney made by Notary C was declared null and void by law⁶.

Regulations on the use of graphonomy in business law in Indonesia still need to be clarified. The Electronic Information and Transactions Law (UU ITE), Law Number 8 of 1981 concerning Criminal Procedure Law/KUHAP and the Civil Code (KUHPerdata) have outlined evidence and electronic evidence as well as written documents, but have not specifically accommodated the role of graphonomy in legal evidence. This raises questions about the extent to which courts can accept graphonomic analysis as valid evidence in business disputes, and what standards should be applied in assessing the validity of graphonomic analysis results. Thus, this study aims to explore the legal validity of the use of graphonomy as an instrument of evidence in business disputes in the digital era. This study is expected to provide a deeper understanding of the position of graphonomy in the Indonesian legal system, the challenges faced in its use, and solutions that can be applied to ensure that this method can be recognized as credible and accountable evidence in court.

METHOD

This study uses normative legal research. The normative legal research method is a research approach that focuses on the study of legal norms or rules written in various laws and regulations, doctrines, and court decisions. Peter Mahmud Marzuki explains that normative legal research is research conducted by reviewing legal documents and understanding legal concepts based on applicable norms. This approach aims to find legal rules that can be used as a basis for resolving legal problems⁷. The approaches used in this research include the statute approach, the legal concept analysis approach (The Analytical and Conceptual Approach)⁸. The statute approach is carried out by analyzing and reviewing laws and regulations, while the legal concept analysis approach is an approach to understanding legal concepts that develop in theories, doctrines, or the thoughts of legal experts. This approach helps in building systematic legal arguments⁹. The sources of legal materials consist of primary legal materials (such as laws, government regulations, court decisions), secondary legal materials (books, journals, and expert opinions), and tertiary legal materials (legal dictionaries, encyclopedias) related to the legal issues being studied. The technique of collecting legal materials is carried out through document or literature studies, while the analysis of legal materials is carried out using the method of interpretation and legal argumentation to find solutions to a legal problem systematically.

ANALYSIS AND DISCUSSION

Business disputes refer to conflicts or disputes that arise between business actors due to differences in contract interpretation, breach of obligations, or disputes over economic transactions that occur in the context of business activities. Business disputes can occur in various industrial sectors and have significant implications for economic stability, corporate reputation, and the relationships between the parties involved¹⁰. The concept of business

⁶Fauzal, N. D. (2021). Akibat Perbuatan Melawan Hukum Pemalsuan Tanda Tangan Oleh Penghadap Dalam Akta Notaris (Studi Kasus Putusan Pt Bandung Nomor 256/PDT/2020/PT.BDG). *Indonesian Notary*, 3(2), 194-211.

⁷Marzuki, P. M. (2017). *Penelitian Hukum: Edisi Revisi*. Jakarta: Prenada Media Group.

⁸Rosidi, A., Zainuddin, M., & Arifiana, I. (2024). Metode Dalam Penelitian Hukum Normatif Dan Sosiologis (Field Research). *Journal Law and Government*, 2(1), 46-58.

⁹Marzuki, P. M. *op.cit*.

¹⁰Kurniawan, I. G., Samsithawrati, P. A., Dharmawan, N. K., Disantara, F. P., & Chansrakaeo, R. (2025). Legal Reform in Business Dispute Resolution: A Study of Legal Pluralism in Indonesia, Vietnam, and Thailand. *The Journal of Law and Legal*

disputes is not only related to the identification and handling of conflicts, but also includes resolution strategies through various existing mechanisms. A strategic approach in choosing a resolution method must consider the characteristics of the dispute, the need for speed, cost efficiency, and the expected legal certainty, so that an optimal and sustainable solution is created in the business world¹¹.

Along with the rapid development of business in the digital era, the characteristics of business disputes have undergone significant transformations where electronic transactions, virtual contracts, and online platform-based trading create new complexities that require an adaptive dispute resolution approach. Business disputes in the digital era are a phenomenon that emerges as a direct result of digital transformation that fundamentally changes the procedures for implementing business activities and resolving disputes. Digital transformation has a significant impact on the dispute resolution process, where the use of information and communication technology allows the formation of a dispute resolution mechanism that integrates the use of artificial intelligence (AI), digital-based tools, and blockchain technology to increase efficiency, transparency, and speed of the dispute resolution process¹². The concept of business disputes in the digital era not only reflects changes in traditional dispute resolution methods, but also signifies the integration of technology in all aspects of the legal process¹³.

The digitalization of business dispute resolution also presents its own challenges, including in terms of data security, the validity of electronic evidence, and differences in regulations between countries. The need to adapt the legal system to technological advances requires new regulations that are specific to the use of digital technology in dispute resolution so that the principles of justice and legal certainty are maintained¹⁴. The challenge of the validity aspect of electronic evidence is crucial to be adjusted in Indonesian regulations, considering that the existence of evidence is a determining factor in creating justice for the disputing parties. In the digital era, companies and dispute resolution institutions need to adapt a new approach that does not only rely on verbal and narrative aspects, but also graphic elements that support the validity of evidence such as document authenticity, digital signatures and digital certificate designs¹⁵.

Based on these problems and challenges, the application of graphonomy science is an option that can be integrated into the business dispute resolution process through the use of technology that provides visual evidence and structured digital information. For example, digital platforms such as those studied in research on the legal certainty of digital signatures show that clear graphical presentation of documents and optimal readability can support the understanding of the parties involved and minimize ambiguity in the evidence submitted¹⁶. Graphonomy has significant uses in business dispute resolution as a forensic evidence tool to verify the authenticity of signatures on disputed contracts, agreements, powers of attorney, or other business instruments.

Conceptually, graphonomy is a science based on the relationship between a person's subconscious mind. The existence of this related relationship produces handwriting that

Reform, 6(2), 69-116.

¹¹Permatasari, A. D. (2022). Comparison Of Arbitration Dispute Resolution In Business Between Indonesia And United States Of America. *Journal of Private and Commercial Law*, 6(2), 183-200.

¹²Fausi, A., & Setiawati, D. (2023). Perkembangan Penyelesaian Sengketa Bisnis di Era Digital. *Borobudur Law and Society Journal (BLASTAL)*, 2(5), 188-195.

¹³Aulia, J., Rosyadi, A. R., & Mustika, D. A. (2023). Dinamika Hukum Dagang Internasional Dan Politik Hukum Dalam Menyelesaikan Sengketa Bisnis Yang Terkait Dengan Teknologi Dan Kekayaan Intelektual. *Yustisi*, 10(1), 326-331.

¹⁴Supriyadi, A. P., Amnesti, S. K., & Zulaicha, S. (2021). The Online-Based Economical Dispute Resolution for 4.0 Industry in the New Normal Era. *Jurisdictie: Jurnal Hukum dan Syariah*, 12(2), 145-169.

¹⁵Tektona, R. I., & Laoly, S. R. (2023). Kepastian Hukum Tanda Tangan Digital Pada Platform Privyid Di Indonesia. *ACTA DIURNAL: Jurnal Ilmu Hukum Kenotariatan (ACTA)*, 6(2), 245-253.

¹⁶*Ibid*.

reflects a person's subconscious mind. As is known, the form of handwriting can also be used to recognize a person's character or personality, mental condition. With handwriting, several things can be known, including: social skills, thinking style, achievements, work habits, honesty. Handwriting analysis today has been done using a computer program, by analyzing several features including letter size, Baseline writing slope, Spacing between words and between letters in a word, and pen pressure¹⁷.

Graphonomics plays a vital role in detecting forged documents and signatures. This science allows graphology analysts to identify the authenticity of handwriting and signatures based on various aspects, such as pen pressure, letter slope, rhythm of movement, and other unique patterns that are difficult to imitate perfectly. In many legal and business cases, forged signatures are often used to defraud financial institutions, alter the contents of contract documents, or disburse funds illegally. With graphonomic analysis, experts can compare the signature in question with genuine samples to detect discrepancies that may indicate forgery.

In addition, graphonomy is also used in forensic investigations to analyze documents suspected of being forged, such as agreements, checks, or deeds of ownership. In the banking and legal worlds, signature verification using graphonomy methods helps reduce the risk of fraud and protect the rights of individuals and companies from illegal practices. Law enforcement agencies often work with graphonomists to uncover crimes related to document forgery, ensure the validity of evidence in court, and support a more accurate and fair legal process. With the development of technology, graphonomic analysis is now also supported by sophisticated software that increases the accuracy in identifying forged signatures and documents.

Cases of document and signature forgery are rampant in Indonesia. Based on a summary of court ruling data in 2024 related to cases of letter/document forgery, 583 cases were found to have received court decisions. Of the total number, there were 428 cases processed at the first level (District Court), 138 cases processed at the Appellate level (High Court), 15 cases processed for cassation (Supreme Court), and 2 cases in the judicial review process (Supreme Court)¹⁸. The data exposure is also described in the table below:

¹⁷Gunadi, I. G., & Harjoko, A. (2012). Telaah Metode-Metode Pendeteksi Kebohongan. *IJCCS (Indonesian Journal of Computing and Cybernetics System)*, 6(2), 35-46.

¹⁸Indonesia, M. A. (2024). *Data Putusan Pengadilan Atas Kasus Pemalsuan Dokumen/Surat Tahun 2024*. Diambil kembali dari [www.putusan3.mahkamahagung.go.id](https://putusan3.mahkamahagung.go.id): https://putusan3.mahkamahagung.go.id/search.html?q=pemalsuan%20akta%20otentik&t_put=2024&cat=831e9b81731822f84869929d684e4a2c



Of the total number of cases of forgery of letters or documents that have been explained above, they are dominated by disputes in the business world. In addition to the case examples in Medan District Court Number: 1367/Pid.B/2024/PN.Mdn with the defendants Yansen and Meliana Jusman, who have been decided onslag or freed from all legal charges, there is also a case of document falsification that has gone through a long process in the judicial institution as stated in the Supreme Court Decision Number: 277 K/Pid/2024 with convicts Rochmad Herdito and Wahid Budiman for the act of falsifying and/or enlarging the List of Fixed Receivables of PT Alam Galaxy which does not comply with the Financial Report of the 2016 Extraordinary General Meeting of Shareholders, and the Extraordinary General Meeting of Shareholders for the Approval of the 2019 Financial Report which resulted in PT Alam Galaxy going bankrupt or being declared bankrupt. Previously, this case had been decided at the first instance court in the Surabaya District Court Decision Number 1827/Pid.B/2022/PN SBY, which was appealed to the Surabaya High Court, but the Surabaya High Court instead upheld the Surabaya District Court Decision in the SURABAYA High Court Decision Number 782/PID/2023/PT SBY¹⁹.

According to the author, in the case of the Yansen-Meliana couple (Medan District Court Decision No. 1367/Pid.B/2024/PN.Mdn), although the forgery of signatures was factually proven (loss of Rp583 billion), the judge categorized the act as neither criminal nor civil, so that he issued a verdict of *onslag van rechtsvervolging*. This evidentiary approach is problematic because Article 263 of the Criminal Code clearly regulates forgery of letters as a criminal act if it meets the objective elements (creation/forgery of letters) and subjective (intent to cause rights/losses). Ignoring the findings of evidence of forgery contradicts Article 183 of the Criminal Procedure Code which requires a judge's conviction based on at least two valid pieces of evidence. This decision also ignores the principle of *fiat justitia ruat caelum* (justice is upheld even if the sky falls), because even if the act is proven, there are no legal consequences. Meanwhile, in the case of Rochmad Herdito-Wahid Budiman (Supreme Court Decision No. 277 K/Pid/2024), unlike the first case, the falsification of PT Alam Galaxy's financial documents was comprehensively proven through the discrepancy between the Fixed Receivables List and the GMS Financial Report, which resulted in bankruptcy. The decisions of the Surabaya District Court and Surabaya High Court which were upheld by the Supreme

¹⁹*Ibid.*

Court showed consistency in the application of Article 263 of the Criminal Code, where the evidence (false financial documents) met the elements of formal proof (Article 184 of the Criminal Procedure Code) and material (real loss). This decision reflects compliance with the principle of *unus testis nullus testis* (one piece of evidence is not enough), based on various evidence such as documents and expert testimony.

Another controversy over a criminal forgery case also occurred in Decision Number: 2834/Pid.B/2020/PN.SBY. This case began with the alleged forgery of KH's signature in the General Meeting of Shareholders (RUPS) document of PT HSJ, including the share sale and purchase letter and changes in the board of directors, which resulted in material losses of IDR 226.5 billion. Investigators found evidence of forgery through a Criminalistics Laboratory test, including KH's signature made with a color computer printer and a non-identical signature. However, the Surabaya District Court (Decision No. 2834/Pid.B/2020/PN.SBY) decided that the defendant (AS) was free (*vrijspraak*) because he was not considered to have fulfilled the elements of Article 263 paragraph (1) of the Criminal Code, although the findings of forgery were not considered in the decision²⁰. According to the author, in terms of evidentiary law, this decision is controversial because it ignores the key evidence (forged signature) which is valid according to Article 184 of the Criminal Procedure Code, even though the findings fulfill the objective elements (forgery of letters) and subjective (*bijkomend oogmerk* - intention to issue rights) in Article 263 of the Criminal Code. The judge should consider all evidence, including expert testimony and instructions, to achieve material truth. An acquittal without considering evidence of forgery is contrary to the principle of *iudex iudicare debet secundum allegata et probata* (the judge is obliged to decide based on facts and evidence). In addition, the Notary as the maker of the deed should be further investigated regarding involvement in a criminal act (Article 55 of the Criminal Code) because he authorized the problematic document.

In a civil dispute, as described in the contents of the Bandung High Court Decision No. 256/PDT/2020/PT.BDG which states that the Deed of Transfer of Rights and Power of Attorney made by Notary C is declared null and void because it was proven that there was forgery of the signature and identity of the person appearing by the party claiming to be B. The court is of the opinion that the deed does not meet the requirements for a valid agreement (Article 1320 of the Civil Code), especially the element of "lawful cause," so that it is considered never to have existed legally. Notary C cannot be held accountable because he has not been proven to be involved in the forgery, considering that his task is only to record the statements of the parties (Article 15 UUJN). The injured party B is entitled to compensation from the perpetrator of the forgery based on Article 1365 of the Civil Code concerning unlawful acts²¹. According to the author, in civil evidence law, an authentic deed has perfect formal and material evidentiary force (Article 1868 of the Civil Code). However, if it is proven that there is a forgery of the signature, the deed can be canceled by law because it does not meet the objective requirements of the agreement, namely "a lawful cause" (Article 1320 of the Civil Code). A notary cannot be held accountable as long as there is no evidence of involvement in the forgery, because his duties are limited to recording the will of the parties (Article 15 of the UUJN). Proving forgery is the burden of the injured party (B), according to the principle of *actori incumbit probatio* (whoever sues, he is the one who is obliged to prove).

The increasing number of forgery cases that are acquitted despite being factually proven (as in some of the court rulings above) shows the need for legal reform to strengthen certainty and justice. The need to affirm the standard of proof in regulations so that judges cannot

²⁰Merah, K. B. (2022). Putusan Bebas Terhadap Tindak Pidana Pemalsuan Surat Pada Rapat Umum Pemegang Saham (Studi Kasus Putusan Nomor 2834/Pid.B/2020/Pn Sby). *Journal of Economic & Business Law Review (JEBLR)*, 2(1), 31-47.

²¹Fauzal, N. D. (2021). Akibat Perbuatan Melawan Hukum Pemalsuan Tanda Tangan Oleh Penghadap Dalam Akta Notaris (Studi Kasus Putusan Pt Bandung Nomor 256/PDT/2020/PT.BDG). *Indonesian Notary*, 3(2), 194-211.

ignore valid evidence of forgery (for example, by requiring explicit consideration of laboratory findings). The need for graphonomy that can help the working mechanism of the courts in providing evidence is urgent. The use of graphonomy in legal evidence also helps judges, prosecutors, and investigators in ensuring the validity of documents that serve as evidence, so as to prevent errors in decision making. In addition, along with the increasing cases of document forgery in business transactions, state administration, and banking, graphonomy is increasingly becoming an important tool in supporting legal justice and maintaining the integrity of official documents.

Legal Validity of Using Graphonomic Analysis as an Instrument of Evidence in Resolving Business Disputes in the Digital Era According to the Legal System in Indonesia

1. The Concept of Legal Validity in the Use of Graphonomy

In the Great Dictionary of the Indonesian Language, validity is the nature of being true according to existing evidence, logical thinking, or legal force; valid nature; authenticity. Validity is the Legal Certainty of the existence of a specific norm. A norm is valid is a statement that assumes the existence of the norm and assumes that the norm has *binding force* on the person whose behavior is regulated. Rules are laws, and laws that are valid are norms. So law is a norm that provides sanctions²². The validity of a norm, according to Hans Kelsen in Nurul and Andi, must meet the following requirements: first, the norm must be part of a norm system. Second, the norm system must run effectively. The validity of the norm in turn will create what is called a norm hierarchy which in Hans Kelsen's thinking is called the "*Stufenbau theory*". Every norm in order to be a valid norm must be declared valid and must not conflict with the norm above it²³.

The legal validity of using graphonomy as an instrument of evidence in business disputes in the digital era depends on the recognition and acceptance of such evidence in the Indonesian legal system. In Indonesian civil law, evidence is regulated in Article 1866 of the Civil Code which includes written evidence, witnesses, allegations, confessions, and oaths. Meanwhile, in civil procedural law, evidence is regulated in Article 164 HIR and Article 284 RBg. In the context of criminal law, evidence is the core of a criminal trial, because what is sought is material truth. The evidence has begun since the investigation stage in order to find out whether or not an investigation can be carried out in order to clarify a crime and find the suspect. Evidence is one of the quite important stages in a trial²⁴. Valid evidence in criminal trials according to Article 184 of the Criminal Procedure Code is: Witness Statements, Expert Statements, Letters, Instructions and Defendant Statements²⁵. On the other hand, Article 5 of Law Number 1 of 2024 concerning Electronic Information and Transactions (ITE Law) states that electronic information and documents and their printouts are valid legal evidence as an extension of evidence in Indonesian procedural law, provided that an electronic system is used in accordance with the provisions of the law, unless otherwise regulated in separate regulations. The evidence that is emphasized in criminal procedural law, as well as in the context of civil procedural law and the legality of electronic evidence in the ITE Law has formal evidentiary

²²Asshiddiqie, J., & Safa'at, M. A. (2006). *Teori Hans Kelsen Tentang Hukum*. Jakarta: Setjen & Kepaniteraan MK-RI.

²³Jannah, N. M., & Syafrani, A. (2020). Validitas Hukum Permendag Nomor 29 Tahun 2019 Tentang Ketentuan Ekspor Dan Impor Hewan Dan Produk Hewan Terhadap Eksistensi Undang-Undang Jaminan Produk Halal Indonesia. *Journal of Legal Reserch*, 2(1), 191-210.

²⁴Ismatullah, R. (2024). Penerapan Alat Bukti Petunjuk Oleh Hakim Dalam Menentukan Kesalahan Pelaku Tindak Pidana Pembunuhan. *JiHT: Jurnal Ilmu Hukum Toposantaro*, 1(3), 242-256.

²⁵Solahuddin. (2010). *KUHAP Kitab Undang-Undang Hukum Pidana dan KUHAP Kitab Undang-Undang Hukum Acara Pidana*. Jakarta: Visimedia.

force, where formal evidentiary force also applies as evidence for all interested parties, not only parties directly involved²⁶.

Although not explicitly mentioned in the provisions of civil procedure law or criminal procedure law, graphonomy can be categorized as part of expert evidence used to test the authenticity of a document or signature in a business dispute. In the context of the courts, graphonomy is often used to prove whether a signature or handwriting in a business document has been forged. However, its validity still depends on the validity of the method used by the graphonomist and whether the court recognizes the results of the analysis as valid and credible evidence. Therefore, graphonomy needs to meet scientific standards that can be accounted for before the law.

2. Recognition of Graphonomy as Evidence in Court

In Indonesia, courts often seek expert opinions in cases involving forgery of business documents. Article 184 paragraph (1) of the Criminal Procedure Code states that expert testimony is a valid form of evidence. Article 1 point 28 of Law Number 8 of 1981 concerning Criminal Procedure Law (KUHAP), that expert testimony is information provided by a person who has special expertise on matters required to clarify a criminal case for the purpose of examination. Expert testimony is something new in Indonesian Criminal Procedure Law. This is an acknowledgement that with the advancement of technology, a judge cannot know everything, therefore the assistance of an expert is needed²⁷. Meanwhile, from the aspect of civil evidence, expert witnesses have strong legality in the civil evidence system based on the provisions of Article 154 HIR (*Herzien Inlandsch Reglement*), which gives the judge the authority to summon expert witnesses to provide technical information that requires special expertise²⁸. Therefore, the results of graphonomic analysis presented by a forensic expert can be used in court as supporting evidence. However, its validity must still be tested through other evidence that supports the validity of the claim.

In practice, judges have the freedom to assess whether the evidence presented has sufficient evidentiary force or not. The judge's belief in proving civil cases is closely related to the concept of formal truth adopted in civil procedural law. Formal truth does not require the judge to decide the case with his belief, but is sufficient based on the existing evidence and is valid according to the law²⁹. Meanwhile, the evidence in criminal cases, has very clearly adopted a negative evidentiary system (*negative wettelijke*) which states: the judge may not sentence someone to a crime unless with at least two valid pieces of evidence he obtains the conviction that a crime really occurred and that the defendant is guilty of committing it. It can be said that the judge's conviction will not arise when there are not yet two valid pieces of evidence³⁰. In some cases, judges may consider the results of graphonomic analysis as one of the bases for a decision, but in other cases, judges may ignore this evidence if it is considered less convincing or not supported by other evidence. This shows that although graphonomy can be used in business disputes, its application still depends on the judge's interpretation and does not have absolute status as the main evidence.

²⁶Santoso, A. M. (2023). The Evidentiary Proof Of The Electronic General Meeting Minuta In The E-Asy Ksei Platform Concerning Financial Services Authority Regulation Number 16/POJK.04/2020. *Unram Law Review (Ulrev)*, 7(1), 62-79.

²⁷Alamri, H. (2017). Kedudukan Keterangan Ahli Sebagai Alat Bukti Menurut Kitab Undang-Undang Hukum Acara Pidana. *Lex Privatum*, 5(1), 31-38.

²⁸Jati, C. N. (2013). Kajian Kekuatan Pembuktian Saksi Ahli Sebagai Alat Bukti Dalam Pemeriksaan Sengketa Perdata (Studi Perkara Nomor : 19/Pdt.G./2011/Pn.Ska). *Jurnal Verstek*, 1(2), 58-67.

²⁹Mathar, A. (2022). Penilaian Hakim Dalam Memutus Perkara Di Pengadilan Agama. *Aainul Haq: Jurnal Hukum Keluarga Islam*, 2(1), 1-19.

³⁰Gulo, N., & Gulo, C. D. (2024). Timbulnya Keyakinan Hakim dalam Hukum Pembuktian Perkara Pidana di Peradilan Indonesia. *UNES Law Review*, 6(3), 8115-8122.

3. Strengthening Regulation and Standardization of Graphonomy in Indonesian Law

To improve the legal validity of the use of graphonomy in resolving business disputes in the digital era, there needs to be clearer standardization regarding the methods and validity of graphonomic analysis in the Indonesian legal system. The government and related institutions can adopt international standards, such as the methods used in *Forensic Document Examination* (FDE) which are applied in many countries. In graphonomy, *Forensic Document Examination* (FDE) or what is known as forensic document examination can be associated with forensic handwriting examination. Forensic handwriting examination is an important part of the criminal justice system, which aims to determine whether a handwritten document can be attributed to a particular author by comparing it to known examples. Forensic handwriting examination involves comparing writing samples by a forensic document examiner (FDE) to determine whether the writing was written by the same person or not³¹.

In addition, strengthening the role of forensic experts in the legal process is also an important factor. Graphonomists must have high credibility and use analysis methods that can be tested scientifically. Certification institutions that recognize graphonomy expertise also need to be clarified so that the results of the analysis submitted in court have greater legal force. Certification of graphonomists in the Indonesian justice system is an urgent need considering their important role in document analysis, especially in cases involving forgery of signatures, handwriting, and other documents. Graphonomy, as the science that studies handwriting to identify the authenticity or characteristics of the writer, is often used in forensic investigations and trials. However, without clear certification standards, the validity and credibility of graphonomy analysis can be questioned. Courts need tested and certified graphonomists to be able to provide valid and reliable testimony, so that legal decisions can be made based on strong and accountable evidence.

In addition, certification of graphonomy experts will help ensure that experts involved in the justice system have competencies that meet international standards. In many developed countries, such as the United States and the United Kingdom, graphonomy certification is a primary requirement for an expert to testify in court. Indonesia can implement a similar system by establishing an official certification body that tests the skills and knowledge of graphonomy experts. With certification, the potential for misuse of graphonomy analysis by incompetent parties can be minimized, so that the justice system becomes fairer, more objective, and more professional in handling cases related to documents and signatures.

4. Implications for Business Disputes and the Justice System

The validity of graphonomy as evidence in business disputes has a major impact on the justice system and the resolution of legal cases in Indonesia. If graphonomy is more formally recognized in law, then the process of resolving disputes involving document forgery can be more efficient and accurate. Conversely, if its use is not supported by strong regulations, then the results of graphonomy analysis can be disputed and do not have sufficient evidentiary power. Therefore, the Indonesian legal system needs to adjust regulations related to graphonomy so that it can be used effectively in business disputes. This includes strengthening the role of experts in the justice system, increasing judges' understanding of graphonomy methods, and drafting more specific regulations regarding the use of graphonomy in cases of business document forgery, both in physical and digital forms.

Graphonomy has significant implications in business dispute resolution and the judicial system, especially in proving the authenticity of documents, contracts, and signatures that

³¹Hicklin, R. A., Eisenhart, L., Richetelli, N., & Eckenrode, B. A. (2022). Accuracy and Reliability of Forensic Handwriting Comparisons. *Proceedings of the National Academy of Sciences of the United State of America*, 119(32), 1-12.

form the basis of business transactions. In the business world, disputes often arise regarding the validity of agreements, statements, checks, or other documents that serve as evidence in legal proceedings. Without accurate graphonomic analysis, disputing parties can easily submit or refute written evidence without a strong basis. Therefore, the role of graphonomists is crucial in providing legal certainty and preventing forgery practices that can harm one party. By using scientific methods in analyzing handwriting and signature characteristics, graphonomists can help reveal the validity of documents, so that courts can make more objective and fair decisions.

In addition, the implications of graphonomy in the judicial system also include increasing accuracy in examining evidence and strengthening the evidentiary system in civil and criminal cases. In business disputes, the accuracy of graphonomic analysis can prevent document manipulation which is often used as a strategy to win a case. For example, in banking cases or asset sales transactions, the aggrieved party can challenge the validity of the signature in the agreement document. If there is no professional and certified graphonomic analysis, the court is at risk of making an inappropriate decision, which can have an impact on legal uncertainty. Therefore, the integration of graphonomy in the judicial system, through regulations governing the certification and competence of graphonomy experts, is an important step in increasing fairness, transparency, and accountability in legal processes related to business disputes.

Challenges and Solutions in Applying Graphonomy as Evidence in Business Disputes in the Digital Era

1. Key Challenges in Applying Graphonomics to Business Disputes in the Digital Age

One of the biggest challenges in applying graphonomy as evidence in business disputes in the digital era is the increasingly sophisticated advancement of technology. In the past, graphonomy was often used to analyze signatures and handwriting in physical documents. However, with the development of digital technology, documents and signatures can be easily modified using software, making them more difficult to analyze traditionally. Forgery of digital documents, such as using *deepfake* techniques or signature editing, creates new challenges that require more complex analysis methods.

The application of graphonomy in a digital context requires more specific expertise, especially in detecting digital forgeries that are difficult to recognize with traditional methods. In addition, graphics or digital signatures included in electronic documents can also be distorted by software, making it difficult to distinguish whether the signature is genuine or has been manipulated. This makes it difficult to accept graphonomy as valid evidence in the Indonesian legal system, which is generally more accustomed to physical analysis methods.

2. Limitations of Existing Legal and Regulatory Standards

In Indonesia, there are no clear regulations or standards regarding the use of graphonomy in digital case evidence. The Electronic Information and Transactions Law (UU ITE) does regulate the use of electronic documents and digital signatures, but does not provide a clear emphasis or procedure regarding the acceptance of graphonomic evidence in business disputes. This causes ambiguity in court, where graphonomy experts are required to provide an in-depth explanation of the methodology they use in analyzing digital signatures and how the results can be recognized as valid evidence.

Without clear guidelines or detailed legal standards, many courts still do not fully trust the results of graphonomic analysis, especially when digital evidence is involved. The Indonesian legal system, which is more accustomed to proving through physical evidence, is not fully prepared to face the challenges of digital evidence that requires different methods and

interpretations. This hampers the acceptance of graphonomy as an evidentiary instrument in business disputes, especially those involving digital technology.

3. The Problem of Reliability and Credibility of Graphomists

The reliability and credibility of graphonomists are also important challenges in the application of graphonomy as evidence in business disputes. The success of graphonomy in court depends largely on the extent to which the methods used by the expert can be tested and proven scientifically. Not all graphonomists have the same qualifications, and differences in the approach or tools used can affect the results of the analysis. In business disputes involving significant amounts of money or corporate reputation, inaccuracies or differences in results between experts can be the source of lengthy debates.

For example, if one graphonomy expert states that a signature on a document is forged, while another expert states that it is genuine, this can add complexity to the trial process. The court must evaluate the credibility of the expert, his experience, and the methods used in the analysis, which can influence the judge's decision to accept or reject graphonomy evidence as a basis for a verdict.

4. Developing Legal Standards for Digital Graphonomy

To address these challenges, the first solution that needs to be implemented is the development of clearer legal standards regarding the use of graphonomy in digital document analysis. More specific regulations regarding the admissibility of graphonomic evidence in the digital context are urgently needed so that it can be recognized in court. Policymakers in Indonesia can refer to international standards, such as the *Forensic Document Examination* (FDE), which has been adopted in many countries to validate graphonomic analysis in various cases. With clear regulations, graphonomists can operate with legally valid guidelines, which in turn increases the credibility and acceptance of this method in court.

Another solution is to introduce more in-depth training for graphonomists in identifying digitally manipulated signatures and documents. This will allow them to adapt to new technologies used in forgery and improve the accuracy of the analysis results. Authorities can also provide specific training on digital forgery and the application of graphonomy in the digital environment that is accessible to experts and professionals in the field.

5. Improving Judges' and Lawyers' Understanding of Graphonomy

In addition, the solution to this challenge is to improve the understanding of judges and lawyers regarding graphonomic methods and how these methods can be applied in business disputes. One way that can be done is by holding seminars or training for legal professionals, including judges, prosecutors, and lawyers, regarding the reliability and application of graphonomy in digital business disputes. A better understanding of graphonomic methodology will help judges in evaluating graphonomic evidence and making more appropriate and objective decisions.

In addition, lawyers must also understand how to use graphonomic evidence more effectively in court, as well as understand the limitations and advantages of this method. This training will ensure that all parties involved in the trial can work more efficiently and minimize conflicts regarding the credibility of the graphonomic evidence presented.

6. Preparation of Procedures for the Use of Graphonomy in Digital Forgery Cases

To improve the application of graphonomy, clear procedures need to be developed on how graphonomic evidence, especially in relation to digital forgery, can be accepted in legal proceedings. This procedure would involve standardizing graphonomic methods for verifying

the authenticity of documents and digital signatures. In addition, legal bodies such as the Supreme Court could establish specific guidelines governing how graphonomy is used in the examination of electronic documents and how the results of its analysis are considered in the broader legal context.

Thus, the acceptance of graphonomy as a valid evidence in business disputes can be better accepted and understood by the courts, experts, and the legal community in general. This can also increase public trust in the legal process in handling business disputes involving digital evidence.

CONCLUSION

In the study on the legal validity of the use of graphonomy as an instrument of evidence in business disputes in the digital era, it can be concluded that although graphonomy has great potential to be accepted as valid evidence in court, its application still faces significant challenges, such as the lack of clear regulations, advances in digital forgery technology, and limitations in the credibility and expertise of graphonomy experts. Therefore, to ensure that graphonomy is legally recognized in the Indonesian legal system, there needs to be clear standardization and development of specific regulations regarding the use of graphonomy in digital cases, as well as increasing the understanding of judges and legal professionals about the reliability of this method. In facing these challenges, solutions such as the development of legal standards for digital graphonomy, training for graphonomy experts, and the preparation of clear procedures for its use in court are needed so that graphonomy can be accepted as effective and credible evidence in resolving business disputes involving digital documents and signatures.

BIBLIOGRAFI

- Firganefi, & Fardiansyah, A. I. (2014). *Hukum dan Kriminalistik*. Bandar Lampung: Justice Publisher.
- Febriani, N. L. (2018). *Analisis Pembuktian Tindak Pidana Pemalsuan Surat Dan Tanda Tangan Dengan Menggunakan Ilmu Bantu Grafonomi Forensik*. Bandar Lampung: Fakultas Hukum Universitas Lampung.
- Suhandi, A. (2020). *Perkembangan Ilmu Grafonomi Dalam Sengketa Ekonomi*. Mataram: Starmedia Publishing.
- Indonesia, M. A. (2024). *Putusan Pengadilan Negeri Medan Nomor: 1367/Pid.B/2024/PN.Mdn terhadap terdakwa Yansen dan Meliana Jusman*. Diambil kembali dari [www.putusan3.mahkamahagung.go.id](http://putusan3.mahkamahagung.go.id): <https://putusan3.mahkamahagung.go.id/direktori/index/pengadilan/pn-medan/kategori/pidana-umum-1/page/2.html>
- Marzuki, P. M. (2017). *Penelitian Hukum: Edisi Revisi*. Jakarta: Prenada Media Group.
- Rosidi, A., Zainuddin, M., & Arifiana, I. (2024). Metode Dalam Penelitian Hukum Normatif Dan Sosiologis (Field Research). *Journal Law and Government*, 2(1), 46-58.
- Gunadi, I. G., & Harjoko, A. (2012). Telaah Metode-Metode Pendeteksi Kebohongan. *IJCCS (Indonesian Journal of Computing and Cybernetics System)*, 6(2), 35-46.
- WARTASIDIK. (2024, 11 18). *Pertanyakan Kualitas Serta Integritas Hakim di Pengadilan Negeri Medan, Alvin Lim: Jangan Lacurkan Kemuliaan Hakim*. Diambil kembali

- dari www.wartasidik.co: <https://wartasidik.co/pertanyakan-kualitas-serta-integritas-hakim-di-pengadilan-negeri-medan-alvin-lim-jangan-lacurkan-kemuliaan-hakim/>
- Indonesia, M. A. (2024). *Data Putusan Pengadilan Atas Kasus Pemalsuan Dokumen/Surat Tahun 2024*. Diambil kembali dari [www.putusan3.mahkamahagung.go.id](http://putusan3.mahkamahagung.go.id): https://putusan3.mahkamahagung.go.id/search.html?q=pemalsuan%20akta%20otentik&t_put=2024&cat=831e9b81731822f84869929d684e4a2c
- Asshiddiqie, J., & Safa'at, M. A. (2006). *Teori Hans Kelsen Tentang Hukum*. Jakarta: Setjen & Kepaniteraan MK-RI.
- Jannah, N. M., & Syafrani, A. (2020). Validitas Hukum Permendag Nomor 29 Tahun 2019 Tentang Ketentuan Ekspor Dan Impor Hewan Dan Produk Hewan Terhadap Eksistensi Undang-Undang Jaminan Produk Halal Indonesia. *Journal of Legal Reserch*, 2(1), 191-210.
- Ismatullah, R. (2024). Penerapan Alat Bukti Petunjuk Oleh Hakim Dalam Menentukan Kesalahan Pelaku Tindak Pidana Pembunuhan. *JiHT: Jurnal Ilmu Hukum Toposantaro*, 1(3), 242-256.
- Solahuddin. (2010). *KUHP Kitab Undang-Undang Hukum Pidana dan KUHPA Kitab Undang-Undang Hukum Acara Pidana*. Jakarta: Visimedia.
- Alamri, H. (2017). Kedudukan Keterangan Ahli Sebagai Alat Bukti Menurut Kitab Undang-Undang Hukum Acara Pidana. *Lex Privatum*, 5(1), 31-38.
- Mathar, A. (2022). Penilaian Hakim Dalam Memutus Perkara Di Pengadilan Agama. *Aainul Haq: Jurnal Hukum Keluarga Islam*, 2(1), 1-19.
- Gulo, N., & Gulo, C. D. (2024). Timbulnya Keyakinan Hakim dalam Hukum Pembuktian Perkara Pidana di Peradilan Indonesia. *UNES Law Review*, 6(3), 8115-8122.
- Hicklin, R. A., Eisenhart, L., Richetelli, N., & Eckenrode, B. A. (2022). Accuracy and Reliability of Forensic Handwriting Comparisons. *Proceedings of the National Academy of Sciences of the United State of America*, 119(32), 1-12.
- Kurniawan, I. G., Samsithawrati, P. A., Dharmawan, N. K., Disantara, F. P., & Chansrakao, R. (2025). Legal Reform in Business Dispute Resolution: A Study of Legal Pluralism in Indonesia, Vietnam, and Thailand. *The Journal of Law and Legal Reform*, 6(2), 69-116.
- Permatasari, A. D. (2022). Comparison Of Arbitration Dispute Resolution In Business Between Indonesia And United States Of America. *Journal of Private and Commercial Law*, 6(2), 183-200.
- Fausi, A., & Setiawati, D. (2023). Perkembangan Penyelesaian Sengketa Bisnis di Era Digital. *Borobudur Law and Society Journal (BLASTAL)*, 2(5), 188-195.
- Aulia, J., Rosyadi, A. R., & Mustika, D. A. (2023). Dinamika Hukum Dagang Internasional Dan Politik Hukum Dalam Menyelesaikan Sengketa Bisnis Yang Terkait Dengan Teknologi Dan Kekayaan Intelektual. *Yustisi*, 10(1), 326-331.
- Supriyadi, A. P., Amnesti, S. K., & Zulaicha, S. (2021). The Online-Based Economical Dispute Resolution for 4.0 Industry in the New Normal Era. *Jurisdictie: Jurnal Hukum dan Syariah*, 12(2), 145-169.
- Tektona, R. I., & Laoly, S. R. (2023). Kepastian Hukum Tanda Tangan Digital Pada Platform

- Privyid Di Indonesia. *ACTA DIURNAL: Jurnal Ilmu Hukum Kenotariatan (ACTA)*, 6(2), 245-253.
- Fauzal, N. D. (2021). Akibat Perbuatan Melawan Hukum Pemalsuan Tanda Tangan Oleh Penghadap Dalam Akta Notaris (Studi Kasus Putusan Pt Bandung Nomor 256/PDT/2020/PT.BDG). *Indonesian Notary*, 3(2), 194-211.
- Jati, C. N. (2013). Kajian Kekuatan Pembuktian Saksi Ahli Sebagai Alat Bukti Dalam Pemeriksaan Sengketa Perdata (Studi Perkara Nomor : 19/Pdt.G./2011/Pn.Ska). *Jurnal Verstek*, 1(2), 58-67.
- Merah, K. B. (2022). Putusan Bebas Terhadap Tindak Pidana Pemalsuan Surat Pada Rapat Umum Pemegang Saham (Studi Kasus Putusan Nomor 2834/Pid.B/2020/Pn Sby). *Journal of Economic & Business Law Review (JEBLR)*, 2(1), 31-47.
- Santoso, A. M. (2023). THE EVIDENTIARY PROOF OF THE ELECTRONIC GENERAL MEETING MINUTA IN THE E-ASY KSEI PLATFORM CONCERNING FINANCIAL SERVICES AUTHORITY REGULATION NUMBER 16/POJK.04/2020. *Unram Law Review (Ulrev)*, 7(1), 62-79.