Leveraging AI-Evidence in Money Laundering Cases in Mexico: its Rules of Evidence (according to SCJN's resolutions)

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Abstract

[Purpose] To analyze the admissibility of AI-generated evidence in money laundering cases in Mexico, with an emphasis on how this type of evidence might be evaluated under existing SCJN resolutions.

[Methodology/approach/design] This research uses a qualitative methodology, utilizing a comprehensive literature review of the SCJN's judicial resolutions regarding evidence in money laundering cases. While no cases involving AI-generated evidence were found, the research examines current legal principles to anticipate how such evidence might be evaluated under the Mexican legal system.

[Findings] The research shows that, although the SCJN has not yet addressed cases involving AI-generated evidence, existing legal guidelines provide a foundation for determining its admissibility. These findings provide a structured approach for the potential future evaluation of AI evidence in Mexican courts.

[Practical implications] The findings of this research can help legal professionals, including judges and lawyers, understand how AI-generated evidence can be evaluated under the current legal framework. These findings will help shape future legal practices regarding the use of AI in the collection of evidence in money laundering cases.

[Originality/value] This paper is among the first to explore the admissibility of AI-generated evidence within the Mexican legal system, providing valuable insights for legal professionals and policymakers on how AI technology aligns with legal evidentiary standards in money laundering cases.

Keywords: AI-generated evidence. Money laundering. SCJN resolutions. Legal framework. Mexican Law.

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INTRODUCTION

Innovative technologies have emerged as significant disruptors, game-changers that brings a whole new level of impact and profoundly influencing the market dynamics and operational process (SMITH, 2022). These advancements are not only transforming markets and operations as we know them, but they are also "impacting financial crime by increasing its complexity (AKARTUNA, JOHNSON & THORNTON, 2023)." For instance, new technologies such as AI are not only being used by criminals but are also being used by authorities to prevent and combat money laundering more effectively (SOLDATOS, 2022).

The techniques used to "clean" criminal profits are constantly evolving (BJERREGAARD & KIRCHMAIER, 2019). Money laundering is a major problem for countries[1]. Criminals obtain money through dishonest means and want to use it without revealing that it's dirty money. They will need to make the money look legitimate by hiding where it originally came from. Since it is often cash that needs to be hidden, the criminal may look for businesses that deal in legitimate cash transactions to make his illicit proceeds appear legitimate (COX, 2014). This process of "cleaning up" dirty money is what is known as "laundering"- disguising illegal profits to make them appear legitimate (GERBANS, UNGER, GETZNER & FERWERDA, 2022).

The Financial Action Task Force ("FAFT")[2] reported in 2021 that AI and machine learning technologies applied to big data can improve monitoring and reporting of suspicious transactions, improve customer risk assessment, and reduce reliance on human review (FAFT, 2021). These technologies promise to make anti-money laundering efforts more rapidly, more economical, and more effective. Big data management and analytics solutions are the technological advances that enable the development of AI systems in the financial sector, thereby facilitating their use in anti-money laundering (SOLDATOS, 2022).

This research evaluates a particular technological-legal development: the integration of artificial intelligence in money laundering prevention and detection

[1] In the year 2020, the High-Level Panel on International Financial Accountability, Transparence, and Integrity for Achieving the 2030 Agenda for Sustainable Development (FACTI), a United Nations initiative, estate that money laundering represents 2.7% of the Gross Domestic Product (GDP), underlining the magnitude of its impact of national economies (FAFT, 2021).

[2] The FATF is an independent organization, inter-governmental, formed by multiple governments, which purpose is to develop and promote policies to combat the global financial system from illicit financial activities, particularly money laundering and terrorist financing (OECD, 2019).

scenarios, its results presented as evidence in court money laundering cases. It aims to show how evidence obtained by means of AI may or may not pass the test of legality in a court of law in Mexico. The discussion will focus on the factors that can affect the validity and reliability of AI-generated evidence, as established by the SCJN, through the review of resolutions issued by the court in relation to evidence presented in money laundering cases in Mexico. Therefore, the evolving jurisprudence on evidence is essential to determine the evolution of legal development, regardless of its nature.

The purpose of this article is to provide an analysis of the admissibility of evidence produced or obtained through AI in the context of money laundering trial proceedings in Mexico in the SCJN. This analysis purpose is to illustrate that while international treaties and statutes serve as important channels for the transfer of legal principles into a legal system, litigation plays an equally important role. Therefore, the development of case law is essential to determine the evolution of legal development, whatever it may be. This study aims to analyze the admissibility of evidence generated and collected by AI systems within the Mexican legal framework through the SCJN's resolutions. The challenges faced by courts in admitting AI-generated evidence related to money laundering. Data collection in this research is based on a comprehensive literature review of SCJN's resolutions to rationalize the evolving role of evidence obtained by AI in the Mexican legal context.

The nature of the research objectives requires the application of a qualitative research methodology within the field of legal sciences, specifically the assessment of recent and ongoing litigation in the SCJN. This will include the study of court decisions and laws related to money laundering. Using a qualitative research methodology that uses direct observations of the judicial decisions of the Mexican SCJN. The qualitative research method is the collection of retrieved data (in this case, jurisprudence) to evaluate and uncover the key provisions that inform such data (UGWU & EZE, 2023). This approach explores how the intersection of law and technology may affect the treatment of AI-generated evidence in Mexican courts.

It is important to highlight that this research was conducted solely using the database of the SCJN, since its rulings represent the final instance in the Mexican judicial system. Unfortunately, no resolutions involving evidence obtained through AI were found. Principles based on SCJN resolutions detailing how the SCJN evaluates the admissibility of evidence in money laundering cases were obtained. These principles can serve as a guideline as to how the SCJN's judges are likely to rule on the admissibility of evidence obtained through AI in money laundering cases. The guideline can provide practical guidance to lawyers, judges, and legislators, in determining the admissibility of AI evidence in money

laundering cases. Nevertheless, there are indications that certain governmental authorities and universities in Mexico are beginning to use artificial intelligence as a tool to prevent and combat money laundering as it will be presented.

In this sense, it is important to begin in Section I with an examination of the theoretical framework of money laundering on a global scale. Followed by Section II explains the background of money laundering in México, followed by approaches to prevent, and combat money laundering in México and how artificial intelligence can be an effective tool to do so. This Section includes an analysis of the historical background of AI, identifying its characteristics, content, and nature and how it can be use in the prevention and counteract of money laundering in Mexico. Importantly, an analysis of the current state of the art is essential to understand the existing knowledge about AI. This preliminary assessment is a fundamental step for the subsequent examination of legal precedents regarding AI and the admissibility of evidence resulting from its application in legal proceedings in Mexico. Section III presents the relevant statutory provisions in Mexican Law, as well as the rules of evidence as applied on Mexican courts through its resolutions.

BACKGROUND

Money Laundering in the World

Global money laundering is difficult to measure due to the secretive nature of its operations. The estimated amount of money laundered globally in one year is 2-5% of global GPD, or $800 billion-trillion US dollars (LISANAWATE, & KEHINDE, 2022)." The United Nations reveals that approximately US$1 trillion is paid in bribes each year and $2.6 trillion is embezzled through corruption, which together represent five percent of the global GDP each year (UNITED NATIONS, 2018). The true figure is difficult to determine because criminals operate in the darkness.

According to the FAFT, money laundering is defined as "the process of concealing the illegal source of criminal proceeds in order to legitimize the proceeds of crime" (OECD, 2019). Consequently, criminal, in their efforts to hide their illicit funds, may seek to influence over financial institutions, including regulatory authorities and regulated companies, to avoid detection of their illegal actions (BARONE, MASCIANARO & SCHNEIDER, 2022). This highlights the fundamental link between corruption and money laundering. Money laundering not only promotes corruption as criminals seek to hide their proceeds, but also has a negative impact on a country's economy by "increasing the size of the informal economy and obstructing tax collection" (KHELIL, KHLIF & ACHEK, 2023).

Money laundering generally involves 3 key steps: placements, layering, and integration (KUTE, PRADHAN, SHUKLA & ALAMRI, 2021). Placement

refers to the introduction of cash into the financial system. Layering implicates complex financial transactions designed to conceal the illicit origin of the cash. Finally, integration includes acquiring assets using the laundered proceeds. Some experts argue that this process often necessitates "complex business arrangements or cross-border transactions" (PATEL & THAKKAR, 2012) to hide the trail of the original source of the money.

Due to its greater impact on both the economy and society, money laundering has become a central focus in studies of large-scale international corruption, often referred as mega-corruption (ISOLAURI & AMMER, 2023). Today, instances of money laundering encompass various sectors, if not all, including but not limited to real estate transactions, loans, and credit activities, as well as the provision of professional services, and the acquisition or use of air, sea, or land vehicles, along with transactions involving precious stones and jewels, among others (ENR, 2023). Several organizations have been established to combat money laundering on a global scale. Among these organizations is the Financial Action Task ("FATF"), whose main goal is to "standardize anti-money laundering regulations (COX, 2014)." More than "200 nations and jurisdictions have pledged to adopt the FATF's standards, contributing to a unified global strategy to combat organized crime, corruption, and terrorism" (FAFT, 2024).

According to the FAFT, criminals accumulate significant amounts of money through various illicit activities, such as "drug trafficking, human trafficking, sexual exploitation, terrorism, extortion, kidnapping, and fraud, among others, representing a serious threat to the integrity of financial institutions and the economy (FAFT, 2023)." If left unchecked, money laundering can undermine "social, integrity and economic stability" (U.S. DEPARTMENT OF STATE, 2001), highlighting the need to combat it effectively.

Money laundering offense, in accordance with the 1988 Vienna Convention, also protects legal interests such as public health, life, physical integrity, and property affected by drug trafficking and organized crime activities, national security, and the stability and healthy development of the national economy, as well as the preservation of human rights and public security (AMPARO DIRECTO 617/2011).

Given the wide scope of money laundering on a global scale, international organizations have intensified their efforts to combat this illicit activity. These organizations include the United Nations, the World Bank, the Organization for Economic Co-operation and Development ("OECD"), the International Monetary Fund, and the Basel Committee (ZAPATA, MORENO-BRID & GARRY, 2016). In Latin America and the Caribbean, significant efforts have been made by the Financial Action Task Force of South America ("GAFISUD") and the Caribbean Financial Action Task Force ("CFATF") (ZAPATA et al., 2016). These

organizations play an important role in the fight against money laundering and contribute to the formulation of policies and guidelines aimed at its prevention. On a national scale, each country has its own national institutions, which includes courts and judicial systems, police forces and financial regulators that work to prevent and counteract money laundering.

Approaches to prevent and counteract money laundering in Mexico

The United States is one of the most popular destinations for money laundering, primarily because of the strength of its currency (PATEL & THAKKAR, 2012). Although Mexico does not have the same currency as the United States, its attractiveness for money laundering might come from its border with the United States which facilitates international transactions and offshore arrangements. An example of this is the HSBC case in December 2012 (TILLEN, BILLINGS & KOSSK, 2013), which highlights the importance of reviewing anti-money laundering ("AML") and combating the financing of terrorism ("CFT") reports in relation to global transactions. This is particularly relevant for transfers of proceeds from drug trafficking activities between Mexico and the United States.

Due to its proximity to the United States, the funds laundered through the Mexican financial system originate primarily from two sources: narcotics trafficking and fraudulent schemes involving tax evasion or capital flight (GARCÍA, 1999). Over the years, the tax, regulatory and judicial authorities have worked to implement and strengthen a robust anti-money laundering system (ENR, 2023). The Mexican authorities have called on the banking industry to cooperate in preventing the illicit use of the financial system and to report any suspicious activity or transactions.

Mexico is a member of various international organizations that participate in a coordinated manner in the prevention and fight against money laundering, among them (Banco de México, 2021): the Financial Action Task Force, Basel Committee on Banking Supervision ("BCBS"), United Nations through its Office on Drugs and Crime: Money Laundering, Process of Crime and the Financing to Terrorism, Model Regulations Concerning Laundering Offenses Connected with Illicit Drug Trafficking and Related Serious Offenses of the Inter-American Drug Abuse Control Commission (LEYVA, 2013), Eggmont Group of Financial Intelligence Units, World Bank, the International Monetary Fund, United National Convention against Transnational Organized Crimes, United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, and United Nations against Corruption.

In recent years, the Mexican government has prioritized the fight against organized crime by weakening its financial structures (ENR, 2023). Mexico has

been a member of the FATF since 2000 (ENR, 2023). As a member, Mexico actively participates in global efforts to combat money laundering, terrorist financing, and the financing of proliferation activities, in accordance with the objectives of the FATF (FAFT, 2024). Following the FAFT guidelines, Mexico issued the National Money Laundering and Terrorist Financing Risk Assessment ("ENR") which establishes guidelines for AML and CFT and is published every year.

In particular, according to the 2023 ENR, Mexico notably lacks a defined methodology or set of guidelines to effectively quantify the volume of illicit funds generated domestically, relying primarily on estimates (ENR, 2024). In this regard, statistics from 2019 to 2021 show an estimated amount of $41,943,618,029.01 Mexican pesos[3] in identified illicit resources, highlighting that this amount merely represents only a fraction of the total illicit wealth within the country. It is important to acknowledge that the entry of illicit resources into Mexico occurs primarily through money laundering activities, often linked to activities related to the United States (ENR, 2023).

In 2020, money laundering accounted for "approximately 1.5% of Mexico's gross domestic product, although it is important to note that this figure may be higher (SÁNCHEZ, 2020)." Approximately, "US$4.4 billion or 7.6% of the remittances sent to Mexico in 2022, may have originated from organized crime[4]." From November 2013 to February 2024, the Financial Intelligence Unit (UIF *for its acronym in Spanish*)[5] received more than 62,441,551 reports related to money laundering[6]. Despite the government's efforts, money laundering in Mexico remains a serious problem that the country continues to struggle with.

[3] Approximately $2,501,691,948.59 US dollars (Forty-one billion, nine hundred forty-three million, six hundred eighteen thousand, twenty-nine pesos and one cent).

[4] According to the Mexican association Signos Vitales remittances could potentially serve to launder money acquired through drug trafficking. Retrieved from: https://www.forbes.com.mx/gobierno-niega-narcotrafico-remesas-lavar-dinero-eu/

[5] The Financial Intelligence Unit in Mexico is the national central body that receives and analyzes reports on financial activities from vulnerable activities, analyzing financial transactions and data, and distributing intelligence reports to identify operations potentially associated with money laundering or terrorism financing. Retrieved from: https://uif.gob.mx/es/uif/quienes_somos

[6] Financial Intelligence Unit. Request for information to the Transparency Unit with number 33002632400941. Notices made by Financial Institutions of risky operations that could be of resources of illicit origin.

Artificial Intelligence in Money laundering Prevention and Counteract in Mexico

Malicious behavior in money laundering crimes often results from a series of transactions extending over several months or years, requiring the development of tools to help institutions manage and filter large amounts of information (BO LI, SINGH & WANG, 2022). The proliferation of money laundering has been facilitated by IA using machine learning algorithms (CANHOTO, 2021). However, AI can also serve as an effective tool for making the identification of money laundering more efficient. By incorporating both standard monetary regulations and the expertise of human analysts, IA can improve the speed and accuracy of detecting illicit activity.

The EU's new Artificial Intelligence Act describes AI as "a rapidly evolving technology that offers significant economic and social benefits across multiple sectors" (EUROPEAN PARLIAMENT, 2024). AI involves "the understanding of intelligent thought and action by computers systems" (BUCHANAN, 2016) and has the potential to "transform industries, public services, and society, by achieving or even better human levels of performance in terms of accuracy for various tasks" (ANGELOV, ARNOLD, SOARES, ATKINSON & JIANG, 2021). AI can improve operations, make predictions, and personalize services more effectively and capably than a human being. An AI system is defined as a "machine-based system that is designed to operate with variable degrees of autonomy, for a given set of human-defined objectives, or decisions and is capable of exhibiting adaptive behavior influencing the environments they interact with (EUROPEAN PARLIAMENT, 2024)." This means that these systems infer from the input they receive to generate outputs such as predictions, content, recommendations, or decisions that can impact both physical and virtual environments.

Based on this definition, it can be understood AI as a system that evolves using the information provided to it, generating results from that data. While AI holds great promise, there is still a significant challenge in the explainability of AI, as well as "a lack of expertise in understanding and operating AI" effectively (CANHOTO, 2021). It is important to highlight that AI is not bulletproof. In most cases, "AI relies on the accuracy of data sets to successfully identify money laundering and illicit activities (ALHAJERI & ALHASHEM, 2023)." If the training data contains false or incorrect information, the AI system may learn incorrect patterns, resulting in erroneous or misleading results. Thus, the accuracy and success of the AI system is directly dependent on the "quality of the input features (BO LI et al., 2022)."

In Mexico, the push for digital transformation in public administration and the promotion of innovation for social benefit led to a significant development on

April 30, 2018[7]. On that date, the Inter-Secretarial Commission for the Development of E-Government issued an official statement, at the request of the Secretary of Public Function. The statement proposed the creation of a subcommission specifically dedicated to AI and deep learning. The primary goal of this initiative was to aggregate large amounts of data to formulate predictive insights and identify trends through pattern analysis. Ultimately, these efforts were directed towards developing connectivity protocols through AI in Mexico.

This research has revealed the use of AI and machine learning in Mexico to prevent and combat illicit activities, including money laundering. Key Mexican authorities in this area, such as the Tax Administration Service (*SAT by its Spanish acronym*) and the Mexican National Banking and Securities Commission (CNBV *by its Spanish acronym)* have integrated AI into their internal operations.[8]

In 2018, the CNBV implemented RegTech2 and Sup Tech data architectures to improve the "accuracy, efficiency, and predictive capabilities of traditional money laundering methods (DI CASTRI, GRASSER & KULENKAMPFF, 2020)." This strategic initiative was a response to the scrutiny generated by numerous high-profile cases that revealed the significant risks of money laundering in Mexico, particularly those associated with "organized crime activities, such as drug trafficking, extortion, corruption, and tax evasion (DI CASTRI et al., 2020)." It highlighted the need for strong measures and revealed significant deficiencies in both internal anti-money laundering controls and external monitoring mechanisms. This CNBV prototype has the potential to revolutionize the fight against money laundering by automating manual tasks, using big data for deeper analysis, and using innovative machine learning models to detect previously unseen patterns of suspicious activity.

Other research has explored the use of AI to prevent and combat corruption in Mexico. Detecting tax evasion presents significant challenges, especially when

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[7] Crea SFP Subcomisión de Inteligencia Artificial y Deep Learning de la CIDGE, 2018, Gobierno de México, Availabe at: https://www.gob.mx/sfp/prensa/crea-sfp-subcomision-de-inteligencia-artificial-y-deep-learning-de-la-cidge

[8] IA es usada para detectar fraudes en pago de impuestos en 8 de cada 10 países de la OCDE; así la utiliza el SAT desde este año, Sebastían Díaz Mora, March 29, 2024, Retrieved from:

https://www.eleconomista.com.mx/sectorfinanciero/IA-es-usada-para-detectar-fraudes-en-pago-de-impuestos-en-8-de-cada-10-paises-de-la-OCDE-asi-la-utiliza-el-SAT-desde-este-ano-20240329-0009.html, CNBV inicia jornada de capacitación sobre Inteligencia Artificial para su personal, June 21, 2024, Retrieved from: https://www.gob.mx/cnbv/es/articulos/cnbv-inicia-jornada-de-capacitacion-sobre-inteligencia-artificial-para-su-personal?idiom=es

it comes to manually identifying suspicious transactions among enormous taxpayers' data. Computational and statistical techniques, such as those from network science and machine learning, can analyze transaction networks to identify patterns indicative of evasion. A review conducted in 2021 of Mexican taxable transactions from 2015 to 2018 found evidence of highly suspicious contributors that resembled evasion principal points, indicating previously undetected instances of tax evasion (GRANADOS & NICOLÁS-CARLOCK, 2021). This research highlights the potential of integrating advanced AI technologies with existing SAT practices to improve Mexico's response to tax evasion.

Another research conducted in 2022 focused on combating corruption in public procurement in Mexico (ALDANA, FALCÓN-CORTÉS & LARRALDE, 2022). By applying machine learning techniques to a dataset of Mexican public procurement contracts, the study aimed to detect and predict contracts with a high probability of corruption (ALDANA et al., 2022). The result was an easily implementable tool designed for agencies and government entities to support decision-making by identifying, predicting, and analyzing potential corruption in public procurement contracts.

Additionally, the Universidad Autónoma Chapingo ("UACh") conducted a study to identify networks of employers managing workers suspected of Income Tax evasion (UACh, 2020). Using machine learning techniques, UACh identified a set of potential evading employers and estimated effectively the potential amount of evasion. In another study, UNAM researchers, in collaboration with the Department of Network and Data Science, and the Central European University, analyzed a large dataset of anonymized digital invoices issued in Mexico from January 2015 to December 2018 to identify potential tax evaders (UNAM, 2020). The research acknowledges that these methods do not replace human decision-making or extensive tax investigations, but rather complement SAT's efforts with qualitative tools. Techniques such as network science and random forests were used for classification to improve the detection of potential tax evaders.

Building on the findings of the previous research, a subsequent study proposed the integration of AI to monitor and enforce taxpayer compliance to detect evasion patterns (PALOMINO, 2022). This initiative uses key databases such as the Mexican Taxpayer ID, the Digital Tax Invoice, and the Financial System database. Under Article 32-bis of the Federal Tax Code (1981), which establishes compliance standards for financial institutions, the study incorporates machine learning techniques developed by researchers at UNAM and the Department of Network and Data Science to perform network analysis to identify potential income tax evasion. The research provides a comprehensive strategy for

the SAT to identify tax evasion practices while preserving the rights of compliant taxpayers. This ensures the evidence-based identification of evaders without unjustly violating the taxpayers' rights.

This body of research demonstrates that Mexican authorities and academics are using AI as a tool to prevent and counteract illicit activities. The results of these tools will eventually be used as evidence in court in money laundering cases in Mexico.

The European Union's new Artificial Intelligence Act categorizes AI systems into four different risk levels: unacceptable risk, high risk, limited risk, and minimal risk (EUROPEAN PARLIAMENT, 2024)." This classification implies different approval procedures might be necessary based on the type of AI and its associated risk level, as well as restrictions and safeguards to certain uses of it (EUROPEAN PARLIAMENT, 2024). When evaluating evidence generated by artificial intelligence, two key qualities must be considered: "validity and reliability (GRIMM, GROSSMAN & CORMACK, 2021)." Validity refers to the "accuracy and truthfulness of the AI-generated evidence, while reliability refers to the consistency of the AI's results under the same circumstances (GRIMM et al., 2021)." The challenge is to determine how to effectively measure these qualities effectively in AI systems. Ultimately, courts must determine the admissibility of such evidence, making it imperative for prosecutors to ensure its enforcement (STEIN, 2015).

Lawyers and judges face the challenge of determining whether AI-generated evidence should be considered admissible when presented in support of claims or defenses in money laundering cases. It is important to recognize that when judges lack scientific expertise, they encounter significant challenges in understanding and evaluating evidence (DIAMOND & LEMPERT, 2018).

LAW AND RULES OF EVIDENCE IN MEXICAN COURTS RESOULTIONS

The law of evidence is a "set of rules governing the judicial investigations into questions of fact, primarily in cases involving disputes (THAYER, 1889)." These rules concern the methods of determining unknown and often disputed facts in court. While they do not dictate the process of reasoning and argument, they do prescribe the way in which evidence must be presented. In essence, law of evidence provides a strong legal foundation to ensure legal certainty by defining the principles that should be considered when evaluating the admissibility and weight of evidence in a trial.

This section describes the legal basis for money laundering in Mexico and the current regulations regarding evidence. The second part of this section, presents and analyzes cases resolved by the SCJN involving evidence in money

laundering investigations in Mexico. These resolutions may serve as practical tools for future reference.

Mexican Law. Statutory Provisions related to Money Laundering

This section reviews the Mexican legal provisions relating to operations involving illicit proceeds. Under Article 73, Section XXI of the Mexican Federal Constitution (1917), the Congress of the Union has the "authority to enact laws relating to money laundering." This section also includes the provisions to regulate organized crime in Mexico related to money laundering. Mexico's National Development Plan acts as a strategic tool to identify national problems and proposing solutions over a six-year period. This plan demonstrates a "strong and effective commitment to combating organized crime and money laundering and incorporates international standards for preventing and combating money laundering (PND, 2019)."

On May 13, 1996 in the Official Gazette of the Federation a decree was published, in its preamble it established the crime of operations with resources of illicit origin. This decree specified the protection of "legal assets, including public health, life, physical integrity, and property, which are affected by the activities of drug trafficking and organized crime, as well as the national security, human rights, and public safety (AMPARO DIRECTO 617/2011)."

The Federal Law on the Prevention and Identification of Transactions of Illicit Resources (2012) in Mexico in its Article 12 estates that it "protects the financial system and the national economy through the implementation of measures and procedures aimed at the prevention and detection of illicit transactions, facilitated by inter-institutional coordination, with the overall goal of gathering actionable intelligence to investigate and prosecute crimes related to illicit proceeds, including the financial structures of criminal organizations, and to block the use of such proceeds for further financing."

According to the Mexican Federal Criminal Code (1931) in it Article 400 bis, engaging in various activities such as "acquisition, disposition, administration, custody, possession, exchange, conversion, deposit, withdrawal, transfer, transportation, or conveyance of resources, rights or goods within the Mexican territory, to or from foreign countries" constitutes money laundering. This occurs when individuals knowingly handle assets derived from or represent the proceeds of unlawful activities. In addition, according to the same article "concealing, attempting to conceal, or disguising the nature, origin, location destination, movement, ownership, or title of such resources, rights, or goods" is also considered money laundering when done with knowledge of their illicit origin or representation as proceeds of unlawful activities. The foregoing is punishable by imprisonment.

In a resolution of the SCJN, its First Chamber defines the crime of operations with resources of illicit origin as involving with "resources, rights or assets of any kind that are the product of an illicit activity, when there are reasonable indications or certainties that they directly or indirectly originate from or represent the proceeds of the commission of a crime and their legitimate origin cannot be proven (Amparo en Revisión 25/2018)." According to another jurisprudence, in a resolution issued by the Collegiate Circuit Courts, money laundering includes a "series of activities aimed at legitimizing unlawfully acquired proceeds, thereby enabling their lawful use (Tesis I.1o.A 182 A, 2018)." From these resolutions it can be concluded that the phenomenon of money laundering involves the implementation of various strategies to hide the origin of illicit proceeds and ultimately facilitate their integration into the legitimate economy.

Regarding evidence, in Mexico, the constitutional right to present it is firmly established in Article 20, Section B, Subsection IV, and Section C, Subsection II of the Mexican Federal Constitution (1917). In addition, in its Article 20, Section B, Subsection IV explicitly guarantees the defendant individual has the right to have the court admit "any pertinent evidence offered." Similarly, Article 20, Section C, Subsection II addresses the rights of the victim or injured party, affirming their prerogative to "receive all the available data or elements of evidence" relevant to their case.

In Mexico, it may be assumed that evidence obtained through AI its entry into a judicial process is made through the means of documentary evidence by data message generated by a machine. When discussing electronic evidence, it is essential to consider Article 89 of the Mexican Commercial Code (1889), which defines a data message as "any information generated, transmitted, received or stored by electronic, optical, or other technological means." Such messages have evidentiary value in legal proceedings before recognized authorities, and have the same legal validity as printed documents, provided that it complies with the provisions of the Mexican Commercial Code and the relevant regulatory guidelines.

The Commercial Code is bound by the principles of technological neutrality, autonomy of will, international compatibility, and functional equivalence in its interpretation and application (CONTRADICCIÓN DE TESIS 8/2018). This includes ensuring that regulations are not biased toward specific technologies, protecting the freedom of individuals to make autonomous decisions, aligning with global standards, and recognizing the functional equivalence of electronic messages and signatures to their non-electronic counterparts.

In addition, the Federal Code of Civil Procedure (1943) in its Art. 210-A, recognizes the admissibility as evidence of "information generated or communicated by electronic, optical or any other technology." Regulatory guidelines, set forth in NOM-151-SCFI-2016 (2016), establish the requirements for the preservation of data messages and the digitization of documents[9].

The current Internal Regulations of the Ministry of Finance and Public Credit (1996) in its Art. 2, establish the organizational structure of various units under the Ministry's leadership, one of the key units being the Financial Intelligence Unit. This unit is responsible for developing and updating the National Money Laundering and Financing of Terrorism Risk Assessment. The ENR (1996) is described as a "self-evaluation exercise aimed at evaluating Mexico's risks associated with the money laundering and terrorist financing." Its goal is to "conduct a comprehensive, systematic, and inclusive effort to identify, analyze, evaluate, and understand the risks associated with money laundering and terrorist financing in Mexico, by establishing an effective, coordinated, and high-quality framework to combat such activities (ENR, 2023)."

Similarly, Article 15-G of the Internal Regulations of the Ministry of Finance and Public Credit (1996) tasks the Deputy Directorate for Technological Infrastructure with leading projects aimed at technological renewal, with a particular focus on artificial intelligence and the processing of large volumes of data obtained through collaboration agreements with various entities, including governments of federative entities and nonprofit organizations.

In addition, Article 210-A of the Federal Code of Civil Procedure (1943) recognizes electronic information as admissible evidence. This aligns with the provision in Article 189 of the same Code, which allows for the consideration of expert opinions when specialized technical knowledge is required for the evaluation of evidence. The Federal Law of Administrative Litigation Procedure also addresses electronic documentation comprehensively, establishing definitions and parameters for electronic files, documents, and records in federal administrative litigation cases (CONTRADICCIÓN DE TESIS 8/2018).

Articles 42 and 45 of the Mexican Federal Tax Code (1981) grant the Ministry of Finance and Public Credit the authority to verify that taxpayers have complied with the tax provisions and to conduct home visits. Taxpayers are required to permit these visits, which may serve as a means to identify potential

[9] Norma Oficial Mexicana NOM-151-SCFI-2016, Requisitos que deben observarse para conservación de mensajes de datos y digitalización de documentos (cancela la NOM-151-SCFI-2002), Retrieved from: https://www.dof.gob.mx/normasOficiales/6499/seeco11_C/seeco11_C.html

sources of illicit resources. To date, there is no specific regulation in Mexico regarding evidence obtained through AI in money laundering cases.

Case Law related to Evidence in Money Laundering

While ongoing research in Mexico focuses on the use of artificial intelligence as a strategic tool to prevent and counteract money laundering or corruption, an important observation emerges from our study. A thorough search of the SCJN's databases was conducted. Despite extensive searches of the SCJN's online portal for jurisprudence and resolutions related to AI-evidence and money laundering, no relevant results were found[10]. Alternative judicial resolutions were found regarding principles for evaluating the admissibility of evidence in money laundering cases in Mexico. Within these findings, the SCJN explains key terms and evidentiary requirement relevant to evidence in money laundering cases.

In a resolution, the First Chamber of the SCJN, analyzed the appellant's arguments regarding the unconstitutionality of the second paragraph of Section II of Article 400 bis of the Federal Criminal Code (1931). This section states that for the offense of conducting transactions with illicitly obtained resources, "it is understood that the resources, rights, or assets of any nature are the product of illicit activity when there are well-founded indications or certainty that they come directly or indirectly, or represent the profits derived from the commission of a crime, and their legitimate origin cannot be proven (1931)."

Article 400 (1931) potentially introduces ambiguity by failing to specify the nature of the crime, thus allowing for different judicial interpretations. It requires that the law "clearly define the conduct it forbids (BYRNE, 2016)." Legal doctrine emphasizes that the vagueness doctrine (*principio de taxatividad in Spanish)* involves "sanctioning norms to clearly define prohibited behaviors and

[10] Different combinations of phrases and keywords related to artificial intelligence and money laundering were used in the search. These are the words and phrases in Spanish used for the research. Different combinations of these keywords or phrases were used in the search: Lavado de dinero (Money laundering), Unidad de Inteligencia Financiera (Financial Intelligence Unit), analista financiero (financial analyst), evidencia (evidence), prueba (proof), recursos de procedencia ílicita (resources of illicit origin), mensaje de datos (data message), evaluación de la prueba (evaluation of evidence), admisibilidad de la prueba (addmissibility of evidence), Inteligencia Artificial (Artificial Intelligence), Inteligencia Computacional (Computational Intelligence), Inteligencia Automatizada (Automated Intelligence), Inteligencia Algorítmica (Algorithmic Intelligence), Inteligencia Robótica (Robotic Intelligence), Inteligencia Sintética (Synthetic Intelligence), Sistemas Inteligentes (Intelligent Systems), Computación Cognitiva (Cognitive Computing) and Inteligencia de Máquinas (Machine Intelligence).

corresponding sanctions to ensure legal certainty and impartiality (Amparo en Revisión 25/2018)." Interpreting the term "some crime" requires a comprehensive analysis by legal practitioners, considering "all the elements that make up the criminal norm and the principle of minimum intervention of the criminal law, which focuses the protection of the state on the most serious violations of the most important legal interests (Amparo en Revisión 25/2018)." Along this line, the provision requires that the active subject engages in behaviors such as "acquiring, administering, or transferring assets, in Mexico, and that these assets are product of illicit acts, as indicated by certainty or well-founded suspicion of their criminal origin and the inability to prove their legitimate origin.

In criminal proceedings, evidence for the prosecution directly or indirectly proves relevant facts, such as the existence of the crime or the criminal responsibility of the defendant. The distinction between direct and indirect evidence for the prosecution lies in its relationship to the crime and the degree of inference required to establish guilt (AMPARO DIRECTO 1932/2018). Courts must critically evaluate the evidence presented to ensure its validity in challenging the presumption of innocence. The burden of proofs is on the defendant, and courts must examine the reasonableness of the inferences drawn from the evidence to avoid violating the rights of the defendant (AMPARO DIRECTO 1932/2018).

Moreover, with regard to Article 400 bis (1931), the First Chamber of the Supreme Court examined the constitutionality of its second paragraph, which defines the concept of "product of an illicit activity" in the context of possible violations of the principle of strict application of criminal law. This provision was challenged on the grounds that it did not expressly specify the offenses from which the resources, rights, or assets involved in the criminal activity were derived (Amparo en Revisión 26/2018). The Court considered the principle of legality in its aspect of the vagueness doctrine, which requires that the prohibited conduct, and the resulting penalties be clearly defined. The Court concluded that the challenged provision "did not violate the vagueness doctrine because it adequately described the prohibited conduct and the related penalties, thus complying with the constitutional mandate of legal certainty (Amparo en Revisión 26/2018)." The offense set forth in Article 400 bis includes specific acts involving resources derived from illicit activities, requiring the court to establish the origin of those resources from a prior offense. Therefore, the provision requires that the prohibited acts be carried out with respect to resources derived from a criminal offense, thus ensuring clarity and precision in the application of criminal law, but leaving it open to any type of crime (Amparo en Revisión 26/2018).

Also related with the "apparently" lack of specification, Article 18, Section IV, of the Federal Law for the Prevention and Identification of Operations

with Resources of Illicit Origin (2012) does not specify which documents should be considered as support for vulnerable activities. This lack of specification does not constitute a violation of the principle of legal certainty, since the Constitution does not require the legislator to define the terms of expressions used in secondary legislation. Moreover, legal provisions should be interpreted systematically and not by themselves, in order to ensure coherence within the legal framework (Amparo en Revisión 11/2015). The absence of a precise definition of "information and documents supporting vulnerable activities" is reasonable given the wide range of activities susceptible to money laundering as outlined in Article 17 of the aforementioned Law (Amparo en Revisión 11/2015). The legislator's use of a broad term includes the various types of information and documentation that the obligated entities must comply with, without compromising legal certainty. Thus, the lack of definition of these terms does not violate the principle of legal certainty, as it remains consistent with systematic legal interpretations and the practical challenges of regulating a wide range of activities subject to money laundering.

Furthermore, compliance with principles such as "publicity, contradiction, and immediacy govern the handling of evidence in criminal proceedings (AMPARO DIRECTO 1932/2018)." Incriminating evidence must adhere to these principles to warrant consideration in the evaluation of the evidence. Additionally, the requirement that evidence for the prosecution to be obtained without violating the fundamental rights of the defendant highlights the importance of procedural fairness. Violations of these principles infringing the rights of the defendant undermine the presumption of innocence because they result in an unreasonable or illogical evaluation of evidence by judicial bodies (AMPARO DIRECTO 1932/2018). Therefore, maintaining procedural integrity and safeguarding the rights of the defendant are crucial to keep the integrity of the criminal justice system and preserve the presumption of innocence.

The presumption of innocence can be understood as a rule that obliges judges to release the defendant when, during the trial, there is insufficient evidence for the prosecution to prove the existence of the crime and the responsibility of the person; a mandate that applies at the moment of the evaluation of the evidence and not during the evidentiary process. More precisely, the presumption of innocence in this sense includes two rules: i) the one that establishes the conditions that must be met by the inculpatory evidence to be considered sufficient for conviction and ii) the rule of burden of proof, understood as the norm that determines which party is disadvantaged by the failure to meet the standard of proof, according to which the defendant or ordered to be exonerated when this standard is not met for conviction (AMPARO DIRECTO 1932/2018).

The First Chamber of the SCJN established that one of the key concepts in the evaluation of evidence is authenticity. Authenticity depends on the authorship of the document as it provides its certainty (CONTRADICCIÓN DE TESIS 147/2021). Therefore, the verification of the documentary evidence involves establishing the authority of the document through examination by a public official. When it comes to public documentary evidence with full legal value, two dimensions are identified: a formal or procedural one, and a substantive or material one (CONTRADICCIÓN DE TESIS 147/2021). The first one refers to the procedural process that the legislator has designed to determine when a public document exists, that is, the authenticity of the public document. The latter, on the other hand, concerns to the substantive content of the document, that is to say, what was said, done, or occurred in the presence of the public official, whose authenticity can also be challenged in court. However, the legal privilege of full proof of a public record can be challenged by parties, who may contest its authenticity and request a comparison with the originals. While documentary evidence has value, it alone does not guarantee the truth of the statements it contains; instead, the judge must evaluate its consistency with reality.

It is important to clarify that when the law states that public documents have full evidentiary value, it refers to the presence of certain specified elements in them and does not imply that their evidentiary value is beyond dispute (CONTRADICCIÓN DE TESIS 147/2021). Often, public documents have the character of conclusive or legal proof of certain aspects, such as "the existence of the document, the date of its issue, the official who issued it, and the parties involved" (CONTRADICCIÓN DE TESIS 147/2021). Still, it is the responsibility of the judge to determine their authenticity based on their origin and intended purpose as evidence.

In assessing the evidentiary value of photocopies, the Second Chamber of the SCJN specifically addresses the provisions outlined in Article 27 of the Federal Code of Civil Procedure (1943), emphasizing that while photocopies are admissible evidence, the Second Chamber, has established that their evidentiary weight is subject to the judicial discretion of the judge (Contradicción de Criterios 187/2023, 2023). Additionally, the Chamber highlights judicial precedents that illustrate that simple photocopies alone do not have full evidentiary value and only create a presumption of the existence of the documents they reproduce, which must be corroborated with their evidence in order to prove the facts presented.

Uncertified photocopies are insufficient to establish the legal interest of the complaining party in certain legal proceedings, which require additional evidence to demonstrate the direct impact of the challenged action on its legally protected rights. While simple photocopies may help to establish an apparent case, their probative value ultimately depends on their correlation with other evidence

and the judge's discretion in evaluating the overall probative value of the evidence presented (Contradicción de Criterios 187/2023).

Regarding simple photocopies as evidence in a trial, the First Chamber held that when such types of evidence are combined with others, the judge may attribute to them the value of indicators (AMPARO DIRECTO 2369/2014). This is because it is necessary to weigh what is to be proved with the content of a photocopy, taking into account the evidentiary framework that constitutes a case, as only in this way it is possible to make a comprehensive evaluation of the evidence as required by law. The Chamber also found that the basis for the conviction was not only on the existence of the computer equipment or its contents, but rather on a series of interrelated indicators. These indicators, when taken together, led to the certainty that the defendant committed the crime with which he was charged.

Article 40 of the Federal Law Against Organized Crime (1996) provides for a system of free evaluation of evidence since it does not establish specific rules for the judge [11]. However, this evaluation should not be arbitrary or capricious but should be carried out with prudence and sound judgment, which means that the judge must exercise discretion to determine whether there is a correlation between the fact attributed to the defendant and the crime charged (AMPARO DIRECTO 6575/2018). The interpretations of the First Chamber of the SCJN have established that, according to the said article, the essential characteristic of the discretion to judge prudently lies in the judge's ability to, form the analysis of the allegations made by the various participants in the act and other persons involved in the preliminary investigation, to obtain the conviction that leads them to consider the elements of the offense, and the responsibility of the defendant proven, without being subject to fixed or predetermined rules for the evaluation of the merits of the allegations, with the only constitutional limitation being that they adequately justify their determination (AMPARO DIRECTO 6575/2018). That is, that they logically and coherently explain the appropriate reasons for considering the respective charges sufficient and effective to prove the said elements and the liability of the defendant. The trial outcome is ultimately determined by "the admissible evidence, combined with the collective knowledge and beliefs of the judges (PARDO, 2015)."

Also, Article 41, paragraph 1 of the Federal Law Against Organized Crime (1996), indicates that it provides for circumstantial evidence, also known

[11] Article 40 of the Mexican Federal Law Against Organized Crime establish: "For the purpose of proving the elements of the criminal type and the responsibility of the defendant, the judge will prudently evaluate the accusations made by the various participants in the act and other persons involved in the preliminary investigation".

as inferential evidence, where each of them, although independently and in isolation, may not have significant value, but collectively, through logical relationship and connection with each other, may acquire full probative force to create absolute conviction (AMPARO DIRECTO 6575/2018). The basis of circumstantial evidence, as outlined in the aforementioned provision, lies in the thorough examination of the collected evidence linking them together to obtain the desired truth.

These two articles do not violate essential procedural formalities, particularly with regard to the evaluation of evidence, since they allow for the full exercise of the right to offer and present evidence, since according to them, the judge, in order to take into account the elements of the offense and the proven responsibility of the defendant, must prudently evaluate the accusations made by the various participants in the act under investigation and other persons involved in the preliminary investigation. Additionally, the judge must adequately justify why the charge is effective in considering the elements of the criminal offense and the defendant's responsibility proven, meaning that they are obligated to meticulously explain the appropriate reasoning to justify the determination they issue in this regard (AMPARO DIRECTO 6575/2018).

Articles 40 and 41 of the Mexican Federal Law against Organized Crime (1996) establish specific guidelines for the evaluation of evidence in organized crime cases, applicable to "protected/cooperating" witnesses, including circumstantial or indicative evidence. However, following the complementary nature of the law, criminal judges must evaluate such testimony based on relevant complementary provisions under the Federal Code of Criminal Procedure (AMPARO DIRECTO 740/2011). This ensures a comprehensive and protective evaluation, given the sensitivity of the information, and aims not only to fill gaps in the law but also to maintain legal certainty and security for all. Consequently, to evaluate the effectiveness of the testimony of a cooperating witness, the judicial authority must determine whether the facts support the evidence and provide adequate justification while observing the right to motivation and foundation. Judicial discretion is crucial in granting or denying probative value, considering both objective and subjective factors and requiring corroboration by other evidence to establish the truth of the statements.

When discussing the principles of the accusatorial system procedural, with a particularly focus on the stage where the evidence is evaluated in the statements made by the declarant several key principles emerge. One of these principles is orality, which plays a specific role in probing facts; oral expression allows for greater clarity and richness, accompanied by elements such as tone of voice, expressive force, and speed of response, allowing for a better transmission and reception of the intended message (AMPARO DIRECTO 1091/2021).

Another principle that of contradiction, which serves as a key component for the proper development of the trial, since it not only guarantees the right of the parties to participate in the trial on an equal term, but also allows the judge to clearly evaluate the evidence and arguments presented orally by the parties (AMPARO DIRECTO 1091/2021). The principles of the accusatorial procedural system can be very useful in evaluating information and achieving a more accurate reconstruction of the analyzed facts, as they provide optimal conditions for evaluating the sincerity or credibility of a declarant's statement when it is used as evidence.

The First Chamber has issued guidelines on the evaluation of evidence in organized crime cases. The question was whether evidence that can be used in organized crime cases can come from another preliminary investigation or only from evidence that has been admitted before a judge. The First Chamber held that evidence collected during a preliminary investigation should not be evaluated on the basis of its material content, but only as public documentary evidence with the sole purpose of proving the existence of an inquiry (SOLICITUD DE EJERCICIO 427/2022). The Chamber determined that the irrevocable judgment is only full proof to prove the existence of the criminal group involved in the case, but not of another criminal group related to it; however, "documentary evidence can be evaluated as an indication for this purpose (SOLICITUD DE EJERCICIO 427/2022)."

When the judicial authority evaluates the testimony of a protected/cooperating witness, it must exercise its judicial discretion to grant or deny evidentiary force to such indications, considering all other objective and subjective circumstances through a logical and legal process to determine their falsity or truthfulness (AMPARO DIRECTO 374/2013). Therefore, the judicial authority must corroborate the validity of such depositions based on other evidentiary elements to relate them to what the collaborator has said, in order to determine the truthfulness of the facts described.

In another judicial resolution related to organized crime, the expert testimony in the field of graphology was included, along with the convening of a panel of experts, in strict compliance with the procedural formalities. Article 288 of the Federal Code of Criminal Procedure (1931) states that the evaluation of the expert evidence cannot be left to the discretion and subjectivity of the judges but must be based in the expert opinion of someone who has mastered a science, technique, or art specialized in a field other than law (AMPARO DIRECTO 5937/2021). In addition, in the same resolution, the inclusion of a mobile phone data as evidence was duly authorized due to their involvement in the communication, reception, transmission, exchange, and creation of messages (AMPARO DIRECTO 5937/2021). The petitioner's arguments regarding the

insufficiency of the evidence were unfounded, as the competent authority meticulously evaluated and correlated the evidence in a natural and logical manner, thus establishing circumstantial evidence with full probative value, in accordance with Article 41 of the Federal Law for the Prevention and Identification of Operations with Resources of Illicit Origin (AMPARO DIRECTO 5937/2021).

Other legal precedents, unrelated to money laundering, have been identified in Supreme Court rulings, that may provide valuable insight for this article. The First Chamber of the Supreme Court "recognized that technological advances have had a transcendental impact on the law and have generated repercussions in the area of the individual rights, implying new responsibilities for the judges, including the admission and evaluation of non-traditional means of evidence derived from the new technological tools (CONTRADICCIÓN DE TESIS 8/2018)." In the pursuit of ensuring the principle of pro persona and the right of access to justice, scientific, and technological progress can be integrated into the body of evidence (CONTRADICCIÓN DE TESIS 8/2018)." For example, videotapes are considered documentary evidence and do not require the same preparation as judicial inspections, provided they are presented before the constitutional hearing (CONTRADICCIÓN DE TESIS 8/2018)."

In the same judicial case, the Chamber also recognized, that the emergence of electronic documents presents a challenge to legal science, which must adapt to this technologically revolutionary era. Consequently, institutions, especially those with judicial functions, must recognize the potential harm caused by delaying the adoption of new strategies or tools derived from scientific and technological progress. In this context, video recordings, although not explicitly addressed in procedural codes, can be considered documentary evidence, aligning with comparable practices of other legal systems, such as those observed in the Spanish Civil Procedure Law, where audiovisual evidence is evaluated based on its information content rather than its technological format, ensuring a streamlined process without the need for specialized preparation (CONTRADICCIÓN DE TESIS 8/2018).

This Chamber, in another judicial case, highlights the importance of integrating technological advances in the development of the administration of justice by establishing that proceedings or acts performed in an accusatory criminal trial that are videotaped and subsequently stored in digital formats, such as Digital Versatile Discs ("DVDs"), constitute genuine public instrumental evidence of acts capable of verifying the existence of a procedural act and providing the judge with a degree of conviction, thus making validity part of the process involved (CONTRADICCIÓN DE TESIS 455/2012). The Chamber affirms that video recordings stored on DVDs serve as an essential tool in

maintaining legality and transparency within the judicial process, in line with constitutional reforms aimed at a more equitable and rights-centered justice system.

The Supreme Court ruled on the admissibility of video recordings as documentary evidence in suspension incidents, recognizing the importance of including technological advances for documentation purposes (CONTRADICCIÓN DE TESIS 28/2019). These recordings, which illustrates events through visual and auditory means, are considered admissible without the need for special procedures, consistent with the principle of adversarial proceedings. Moreover, a USB flash containing document reproductions of documents may be treated as documentary evidence under curtains conditions set forth in the Federal Code of Civil Procedure (CONTRADICCIÓN DE TESIS 28/2019, 2019). This interpretation, considered more protective of due process, allows parties to offer video recordings as evidence, recognizing their ability to provide certainty about relevant facts.

In this ruling, the Supreme Court establishes the definition of electronic evidence, as "information stored on electronic devices that establishes knowledge of a disputed fact, either through psychological persuasion or by legally establishing the fact as true (CONTRADICCIÓN DE TESIS 28/2019)." Additionally, the Court classifies electronic evidence into three theories regarding its legal nature: autonomous, analogical, and functional equivalence. The autonomous theory asserts the independence of electronic evidence from traditional means, emphasizing differences in reproduction and examination (CONTRADICCIÓN DE TESIS 28/2019). The analogical theory compares electronic evidence with traditional documentary evidence, deeming them comparable, considering the evolution of the concept of documents to include various means of representation (CONTRADICCIÓN DE TESIS 28/2019). Finally, the functional equivalence theory holds that electronic and paper documents produce identical legal effects, provided that electronic documents meet certain criteria for preservation of legibility, authenticity, and reliability (CONTRADICCIÓN DE TESIS 28/2019). These theories reflect different perspectives on the nature and scope of electronic evidence within the legal framework, extending from strict definitions tied to written signs to broader interpretations encompassing any physical object presented to the judge.

In considering the validity of direct amparo actions filed electronically with the Federal Judiciary through the Electronic Tribunal of the State Judiciary of Tamaulipas (a Mexican state), the absence of a coordination agreement for standardized digital certificates between the two entities highlights the need for such agreements (CONTRADICCIÓN DE TESIS 220/2017). This absence led to the refusal of the Federal Judiciary to recognize these claims. The Second

Chamber of the SCJN recognized that electronic means increasingly facilitate legal actions, negotiations, and public policy applications (CONTRADICCIÓN DE TESIS 220/2017). It accepted that the judiciary must modernize to accommodate these changes by permitting the use of electronic tools such as data messaging applications, advanced electronic signatures, and electronic information storage. Despite the absence of a coordination agreement at the time of filing, the recognition of electronic signatures in direct amparo claims highlights their legal validity and reliability, ensuring a secure and efficient means of fulfilling legal obligations. Recognizing the importance of electronic signatures, the Court, together with the SCJN, has established a normative framework through general agreements for the implementation and use of electronic signatures, through coordination agreements with other state bodies for the recognition of standardized digital certificates (CONTRADICCIÓN DE TESIS 220/2017).

CONCLUSION

Although no resolutions were found that specifically address AI-generated evidence in money laundering cases, authorities and universities are actively developing AI tools to combat and prevent money laundering in Mexico. It may only be a matter of time before the results of those tools reach the SCJN as evidence in money laundering cases. In anticipation of this, certain principles of case law can be considered when evaluating the admissibility of evidence in a trial in Mexico in money laundering cases. From a comprehensive review of the relevant cases related to evidence in money laundering, several key conclusions have been identified that may be useful in evaluating evidence obtained through AI:

- **Lack of Precedents:** Extensive searches of the SCJN`s databases revealed no jurisprudence specifically addressing evidence obtained by AI in money laundering cases. Although, research found AI is being used to combat money laundering and corruption in Mexico.
- **Admissibility Principles:** In addition to law, existing judicial resolutions provide a framework for evaluating evidence in Mexican trials, emphasizing principles such as authenticity, legality, and presumption of innocence.
- **Vagueness Doctrine:** Courts should ensure that legal provisions clearly define prohibited behaviors and corresponding sanctions to maintain legal certainty and impartiality.
- **Burden of Proof:** Inculpatory evidence must meet strict standards to be considered sufficient for conviction, with the burden of proof lying in the prosecution.

- **Procedural Fairness:** Courts should adhere to principles such as contradiction, immediacy, and publicity when evaluating evidence, ensuring procedural fairness and the protection of the defendants' rights.
- **Evaluation of Photocopies:** Photocopies, unless certified, lack full probative value and must be corroborated with other evidence. This principle implies that any evidence lacking full probative value requires corroboration with additional evidence to be considered valid in legal proceedings.
- **Judicial Discretion:** Judges have the discretion to evaluate evidence prudently and must justify their determination logically and coherently.
- **Free Evaluation of Evidence:** The judicial system does not establish specific rules for judges to follow in the evaluation of evidence. However, evaluations should be conducted with prudence and sound judgment. Judges must exercise discretion to determine whether there is a correlation between the fact attributed to the defendant and the crime charged.
- **Circumstantial Evidence:** Circumstantial evidence, or evidence by inference, must be collectively evaluated and correlate it with all other evidence, to establish the truth.
- **Technological Advances:** The SCJN recognizes the impact of technological advances on the law, necessitating the integration of new technologies within the existing legal framework.
- **Electronic and Documentary Evidence:** The SCJN has established guidelines for admissibility of electronic evidence, ensuring it meets the criteria for authenticity and reliability.
- **Expert Testimony:** The evaluation of expert evidence should not be left to the discretion and subjectivity of the judges; rather, it must be based on the expert opinion of a specialist with mastery in a science, technique, or art that is outside the field of law.
- **Principles of the Accusatorial System:** Orality and contradiction are crucial for evaluating evidence, allowing for a comprehensive assessment of the facts.
- **Well- Founded Indications or Certainty:** Courts should require strong evidence, either well-founded indications or certainty, that resources are the product of illicit activities, ensuring that any doubts about the lawful origin of assets are substantiated by credible evidence.
- **Behavior and Territoriality:** The court must verify that the defendant engaged in specific behaviors, such as acquiring, administering, or transferring assets, within in the national territory and that these actions pertain to resources of illicit origin.

- **Proving Legitimate Origin:** The burden of proof lies in demonstrating that the assets in question cannot be proven to have a legitimate origin. Courts should rigorously evaluate whether the inability to prove the lawful origin of assets is convincingly established.
- **Comprehensive Evaluation:** Legal actors should consider all elements of the criminal norm and ensure that the evidence aligns with the principles of legal certainty and proportionality, focusing on the seriousness of the offense and the importance of the legal interests involved.

These principles can provide a basic framework for the admissibility of AI-generated evidence in money laundering cases. Judges today must decide on the admissibility of evidence according to the current legislation, as there have been no reforms to the money laundering legislation regarding the admissibility of AI-evidence. As AI continues to evolve, these guidelines will help legal practitioners, judges, and legislators navigate the complexities of incorporating AI evidence into the judicial process.

While ongoing research explores the use of AI to combat and prevent money laundering, courts should establish clear guidelines for the admissibility of AI-generated evidence, to ensure that it meets standards of relevance, reliability, and legality. Legal systems must adapt to incorporate AI into domestic law while maintaining the integrity of the legal system and protecting individual rights. Finally, judges must apply rules of sound judgment, prescribed by logic and derived from experience when evaluating evidence obtained through AI. This study focuses on the resolutions of the SCJN, but further research could examine the resolutions of collegiate courts or lower instances in Mexico.

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