Institute for Advanced Science,
Social and Sustainable Future

MORALITY BEFORE KNOWLEDGE

Reconception of the law enforcement towards online gambling practices through integrated machine learning system as an attempt on eradicating digital based crimes

Dimas Aditya Ashari[1],*, Kara Megara Cakrawala[1], Maheswari Kinanthi Prabowo Putri[1], Baiq Aras Sakira Indil'an[1], Alzena Aisyah Fitri Khalida[2]

[1] *Faculty of Law, Diponegoro University, Tembalang, Semarang, 50275, Indonesia;*

[2] *Faculty of Economics and Management, Bogor Agricultural University, Dramaga, Bogor, 16680, Indonesia.*

*Correspondence: asharidimasaditya@gmail.com

ABSTRACT

Background: Technological innovation truly creates new dynamics in life. Technological innovation in the form of artificial intelligence (AI) is a reality that affects several aspects of life such as law, technology, and economy. One of the legal challenges are the cases of online gambling in Indonesia. The purpose of writing this scientific paper is to determine the existing conditions related to the regulation and the law enforcement of online gambling law in Indonesia. **Methods:** In this scientific paper, a doctrinal research method is used with research results in the form of reintegration of law and governance through a more responsive reconception of rules. **Findings:** The study found that, from the conditions of the legal challenges of online gambling in Indonesia has had a major impact on social change in society, including the practice of cultural normalization. In these circumstances, legal regulations need to be balanced with more responsive law enforcement, one of which is utilizing the AI system, namely Machine Learning. **Conclusion:** The circumstances that occur related to the matter of discussion comes to a need for an effort to formulate regulations and strengthening institutional authority in supervising and restricting online gambling and also the need for a better observation of law in the form of scope analysis along with a comprehensive direction and substantive of the law by paying attention to philosophical, sociological and juridical aspects. **Novelty/Originality of This Study:** This study introduces the use of AI, particularly Machine Learning, in regulating and enforcing online gambling laws in Indonesia. It offers a new approach by integrating technology with legal and social considerations to improve oversight and enforcement in the fight against online gambling.

KEYWORDS: criminal law; internet; machine learning; online gambling.

1. Introduction

Etymologically, the term "technology" comes from Greek, consisting of the word "techne" meaning "skill" or "ability," and "logia" meaning "knowledge". In a narrow sense, technology is understood as various physical devices or tools used to facilitate various human activities, such as machines and hardware. However, with the development of science and innovation in recent decades, the concept of technology has undergone very significant changes. Technology is no longer limited to physical tools or objects. This

expansion now includes digital transformation that creates convenience in various aspects of life, from communication, work, to daily activities.

The development of digital technology has paved the way for humans to carry out various activities more quickly and efficiently (Uno, 2011). Modern technology has developed continuously through various innovations, enabling humans to achieve higher productivity and expand their abilities in overcoming increasingly complex life challenges. As an integral part of the social order, law has an important role to follow the dynamics of technological change in order to not to be left behind the demands of a developing society. The principle of "*Justitia Semper Reformanda Est*," which means "Law must always adapt to developments," shows that law needs to be dynamic and adaptive in dealing with technological developments. This is necessary so that the law remains relevant to social change and is able to meet the increasingly complex needs of society due to technological advances. The integration between law and technology will create a system that is responsive to an era that is always developing, and guarantees the rights and obligations that are in accordance with human needs in the modern era.

One of the important innovations in global development is the presence of Artificial Intelligence (AI). AI is a branch of computer science that aims to develop systems and machines that can perform various tasks similar to human capabilities. With AI, various innovations have emerged in new work patterns, where cognitive tasks can be completed quickly. The implementation of AI has not only accelerated human work, but has also helped Law Enforcers Apparatus in enforcing the law more efficiently, including in handling current digital based crimes (Noor & Manantan, 2022).

Realizing the great potential of AI, the government is paying full attention to the development of AI through the National Strategy and the Circular of the Minister of Communication and Information regarding Artificial Intelligence. Based on the Circular of the Minister of Communication and Information, AI must at least meet the nine ethical values, one of which is the value of security. AI needs to pay attention to the security aspects of users and the data used in order to maintain privacy, personal data, and prioritize the rights of users of the Electronic System so that no party is harmed. Moreover, according to data from the Ministry of Research and Technology and the National Research and Innovation Agency (BRIN), artificial intelligence is projected to contribute to five key priority areas: healthcare, bureaucratic reform, education and research, food security, and the development of mobility services. These contributions are intended to optimize the application of AI, enabling it to have a more significant impact on national development, enhance sectoral efficiency, and meet public demands in the digital age. One potential application of AI is through Machine Learning, which is developed to recognize and forecast specific patterns. In the context of law enforcement, this capability is very useful in identifying illegal activities, including online gambling.

The rise of online gambling crimes in Indonesia is a serious challenge for the law enforcers, given its flexibility and is easily accessible through digital platforms. This gambling activity can occur anytime and anywhere, making it difficult to monitor and enforce the law. Facts show that the impact of the Covid-19 pandemic has affected the Indonesian economy, which has ultimately led to an increase in online gambling activities. (Mohamed et al., 2022). This is because of the lockdown and social restrictions during the Covid-19 pandemic caused many people to lose their jobs and income.

This is indicated by the increasing Unemployment Rate from 5.23% in 2019, and in the year after the Covid-19 pandemic, it was increased by 1.84% to 7.07% (BPS, 2024). The increase of unemployment has encouraged some people to seek alternative income, one of which is through online gambling. Until now, the increase of online gambling activity is also being triggered by intensive promotion through various digital channels such as social media, internet content, and short messages sent directly, even now promotions can be done through mobile applications including games. These advertisements attract social media users to access online gambling sites, thus increasing the popularity of this activity.

Based on data from the Financial Transaction Reports and Analysis Center (PPATK), in 2017 there were around 250 thousand online gambling transactions in Indonesia reaching

the value of IDR 2 trillion. This figure continues to grow every year, until in 2023 the total online gambling transactions in Indonesia reached the IDR 517 trillion amount of money circulating throughout the year. This phenomenon certainly poses a serious threat to the financial stability of society and has a negative impact on social stratification (Kesuma, 2023). The increase of online gambling transactions cannot be separated from household consumption.

Indirectly, online gambling has reduced people's purchasing power which impacts household consumption expenditure as one of the pillars of the Indonesian economy. In 2022, household consumption contributed a share of 51.87% to Indonesia's GDP. However, this value was unable to grow and only reached 4.48% in the fourth quarter of 2022 compared to the previous quarter of 5.39% due to the online gambling phenomenon.

Dependency on this gambling activity can worsen an individual's financial situation, potentially resulting in debt accumulation, depletion of savings, and difficulty in meeting daily needs. These financial difficulties can affect psychological conditions that often lead to severe stress and even suicide. In addition, online gambling also contributes to the increasing crime rate in Indonesia (Nurdiansyah et al., 2024). In fact, online gambling is an act that is prohibited in Indonesia as stipulated in applicable laws and regulations. Online gambling is a serious issue that needs to be addressed immediately by the government. This is due to the fact that online gambling perpetrators are not only adults, but also involve teenagers and children. If this condition is left untouched, it is possible that it will have an impact on the human resource crisis for the nation. This situation has the potential to ruin Indonesia's future.

In practical terms, online gambling can be categorized as cybercrime. This is based on the motive and form of the crime that utilizes cyberspace as the target of its actions (Hendarto & Handayani, 2024). The Ministry of Communication and Information as a government agency responsible for preventing crime in the digital realm, especially related to online gambling in Indonesia, still faces many challenges and has not achieved optimal results. Nonoptimal cybersecurity system in Indonesia, is one of the main obstacles in eradicating online gambling. Currently, online gambling is spread through so many servers both domestically and internationally. All forms of websites can be hacked by the online gambling mafia, from entertainment websites to official government websites. Weaknesses in this cybersecurity aspect often cause difficulties in tracking perpetrators of crime.

With the increasing threat of cybercrime, Indonesia needs to take immediate steps to prevent the impact of such crimes. Normatively, legal regulations regarding online gambling are not something new in Indonesia. The prohibition of this practice has been stated in various laws and regulations, such as Article 303 of the Criminal Code/*Kitab Undang-Undang Hukum Pidana* (KUHP), Law Number 11 of 2008 concerning Information and Electronic Transactions and its amendments, and Instruction of the Minister of Communication and Informatics (Inmenkominfo) Number 1 of 2023 concerning the Eradication of Online Gambling. Although online gambling activities have long been prohibited, the law enforcers have not been able to optimally eradicate this problem.

Law enforcement against online gambling cannot only rely on the implementation of laws, but also requires a high social consiousness. Therefore, a responsive law enforcement approach is needed in addressing this issue. The essence of law is not only to function as a sterile and rigid institution, but to respond to broader human and humanitarian needs. This is in line with Satjipto Rahardjo's view in the idea of progressive law, which states that "law is for humans, not humans for law." This statement reflects the situation of law enforcement against online gambling which is not yet optimal, although there have been a number of regulations designed to address this issue. Technological developments should have a positive impact on society, including law enforcement apparatus. In this case, artificial intelligence (AI) technology as a product of technological progress is expected to be utilized to support law enforcement. AI can function as a tool for the law enforcers in eradicating online gambling practices in Indonesia (Arianto, 2010).

To address this challenge, artificial intelligence (AI) technology can be a solution that enables law enforcement to be more adaptive and effective, one of them is through the

Decision Support System (DSS). DSS is a data-based system that can assist decision-making by analyzing suspicious patterns and anomalies in real-time. DSS utilizes machine learning algorithms to detect suspicious transactions, access patterns to online gambling sites, and relationships between entities involved in illegal networks. With this capability, DSS provides early warning to law enforcement officers, enabling them to intervene more quickly and precisely. In addition, DSS also functions to integrate various types of data, such as digital communication data and financial transactions, thus providing a more comprehensive effect. This technology-based approach is expected to be in accordance with the needs to address the complexity of online gambling cases in the digital era. By utilizing AI, law enforcement is not only able to narrow the perpetrators' room for movement, but also increase efficiency and accuracy.

From these existing problems and efforts to support an ideal law enforcement system, this paper aims to answer two problem formulations related to the existing conditions of online gambling law enforcement and an ideal development model in creating a legal system that is representative of the prevention and handling of online gambling in Indonesia.

2. Methods

In this scholarly article, the author employs a doctrinal research approach grounded in legal doctrine and methodology, drawing upon norms and principles sourced from statutory laws, regulations, and various legal texts (McConville, 2007). In line with the issues under investigation, the research employed multiple approaches, including comparative, legislative, conceptual, and analytical methods. Data were gathered through literature reviews and document analysis (Marzuki, 2005). The processing and analysis of research data involve identifying and cataloging legal issues, formulating research problems, objectives, and benefits, collecting relevant legal materials, selecting appropriate methods and approaches, and conducting qualitative analysis by interpreting the data in accordance with the chosen approach. The conclusion is presented as a concise response to the established problem formulation, drawn solely from the results of the discussion, without introducing any contradictory or unaddressed explanations.

3. Results and Discussion

3.1 The current state of cybercrime and the pathology of law enforcement in Indonesia

Advancements in information and communication technology have led to significant transformations in human behavior and societal development. This technology has not only hastened globalization and created a seemingly borderless world but has also acted as a catalyst for social change within communities. This has had a very complex impact, as technology plays a vital role in improving welfare, advancing development, and enriching civilization. However, on the other hand, information technology has also become a potential tool for committing unlawful acts (Aldriano & Priyambodo, 2022).

In practical terms, the development of the internet network has given rise to various negative impacts, one of which is the increasing number of cybercrimes. This is supported by the fact that there were 307.02 million cyberattacks against Indonesia in 2022, an increase of 38.72% from the previous year. According to Roy Suryo, an information technology expert, cybercrime is showing significant growth in Indonesia. The most common modus operandi are related to economic factors such as hacking, phishing, data theft, and other forms of hacking. In general, cybercrime can be classified into two categories. First, in a narrow sense, it refers to crimes that directly attack computer systems. Second, in a broader sense, it encompasses crimes that attack computer systems or networks, as well as crimes that use computers as a means to commit criminal acts (Duarif & Saleh, 2024).

Based on the Criminal Code (KUHP), cybercrime in a broad sense encompasses all crimes committed using or through electronic systems. In other words, any conventional

crime regulated in the Criminal Code, such as murder or human trafficking, can be considered a cybercrime if it is carried out with the help of technology or electronic devices. This concept broadens the scope of cybercrime beyond crimes directly related to computers, but also includes general crimes involving digital technology. The development of artificial intelligence (AI) can indeed be used as a means to strengthen security systems. However, on the other hand, AI also contributes in increasing the potential for cybercrime through its use to facilitate criminal acts, such as fraud through digital identity forgery, large-scale data theft, and increasingly sophisticated and organized cyberattacks (Rezy, 2024). This shows the contradictory impact of using technology, including AI, which can be used as a positive means in the development process or used as a means of committing crimes.

The advent of information technology has created various security vulnerabilities that can motivate cybercriminals. They can exploit weaknesses in inadequately protected technology systems, such as vulnerabilities in networks, software, or security protocols. Furthermore, this technology provides significant advantages for criminals by exploiting the anonymity of the digital space (Nur et al., 2022). By operating in the virtual world, perpetrators can hide their identities through IP masking, the use of VPNs, and sophisticated encryption techniques. This makes law enforcement difficult due to the challenges in tracking down these criminals. This challenge is exacerbated by the rapid pace of technological development, which often outpaces the security policies set by the state. Authorities responsible for formulating cybersecurity rules often face limitations in keeping pace with the pace of technological innovation. As a result, existing regulations may be lagging or inadequate in responding to new modus operandi of criminals (Widianingrum, 2024). These regulatory gaps are often exploited by perpetrators to launch attacks. Therefore, cybersecurity challenges in the digital era are becoming increasingly complex, requiring closer cooperation between technology developers, governments, and security experts to create a dynamic regulatory framework that can adapt quickly to technological innovations.

One of the key pillars of law enforcement in Indonesia is the presence of the Law Enforcement Apparatus. However, various factors influence the effectiveness of law enforcement in realizing justice. According to Soerjono Soekanto's theory, the law enforcement process involves several interrelated and integral components. The first is the legal framework itself, which should embody the values prevalent in society. The second is the law enforcement personnel, who must uphold values and moral standards that reflect the integrity of their institutions. Another essential element is the availability of facilities, which serve to support law enforcement agencies in carrying out their duties effectively. The societal factor reflects the physical and social environment in which the law is applied and enforced. Lastly, the cultural factor encompasses the collective works, expressions, and values of society (Soekanto, 2004). Therefore, to enhance the state of law enforcement in Indonesia, it is essential to take more proactive measures aimed at reinforcing integrity across all levels of law enforcement institutions.

Along with technological advancements, digitalization has paved the way for various forms of crime to enter Indonesia, including online gambling and online lending. Based on data from the Financial Transaction Reports and Analysis Centre/*Pusat Pelaporan dan Analisis Transaksi Keuangan* (PPATK), the number of online gamblers in Indonesia reaches 4 million people. This phenomenon not only involves adults but also children. Based on demographic data, approximately 2% of online gamblers or around 80,000 people are under the age of 10. The age distribution of other online gamblers shows that 11% or 440,000 people are in the age range of 10 to 20 years, while 13% or around 520,000 players are between 21 and 30 years old. The 30 to 50-year-old age group dominates with 40% or around 1,640,000 people, while players over 50 years old account for 34% or 1,350,000 people. The number and age range indicate that online gambling has reached various age groups, with significant impacts on each age range (PPATK, 2024).

Money laundering and asset recovery expert, Paku Utama, asserts that online gambling is a form of transnational organized crime. In this context, Indonesia is in a vulnerable

position and is often a target for such illegal practices. The existence of online gambling as organized crime indicates that perpetrators use a systemic approach that includes a structured set of methods carried out on a massive scale. Countries with weaknesses in their systems and law enforcement are prime targets for perpetrators, who exploit loopholes to carry out illegal activities. Such crimes not only have financial implications but also pose significant challenges in terms of law enforcement (Center for Anti-Corruption Education, 2023). When a criminal practice is carried out in an organized and systematic manner, it makes it difficult for authorities to implement existing law enforcement procedures. Therefore, a more comprehensive and integrated effort is needed to address and counter the growing problem of online gambling.

The prevalence of online gambling is a concrete example of how the law has not been able to effectively address this issue. In cases of modus operandi involving online gambling mafias, most platform owners disguise their operations by using games or algorithms. This system allows both users and platform owners to access each other on various sites. As a consequence, when suspicious findings arise, the relevant authorities are deceived by the site moving to other platforms (CNBC Indonesia, 2024). This fact is reinforced by PPATK findings showing that online gambling practices in Indonesia have been detected to flow to 20 countries (Nufus, 2024). Thus, this condition indicates that online gambling practices have transcended national jurisdictions and are interconnected across regions.

Referring to legal instruments in Indonesia, online gambling has actually been prohibited. This can be analyzed through several legal instruments such as the ITE Law, the Personal Data Protection Law, and the National Criminal Code. However, the challenge lies in the mechanisms, procedures, and implementation related to data systems and encryption that are easily manipulated. This has resulted in an increased workload for the government to carry out periodic monitoring and blocking. Improvements, both in terms of the technical nature of the legal structure, need to be supported by an understanding of the legal culture in society. Thus, the concrete form can improve the digital climate to be safe, reliable, and trustworthy (CyberHub 2024).

3.2 Online gambling crime phenomenon and its effect on the social reality of law in society

Online gambling is a category of cybercrime that utilizes information and communication technology as a tool to carry out criminal activities (Aldi, 2022). Legally, online gambling is prohibited as stipulated in Article 27 paragraph 2 of Law Number 1 of 2024, which states: "Anyone who intentionally and without right distributes, transmits, and/or makes accessible Electronic Information and/or Electronic Documents containing gambling content." Article 45 paragraph (2) of Law Number 19 of 2016 also explains that: "anyone who intentionally and without right distributes, transmits, and/or makes accessible electronic information and/or electronic documents containing gambling content shall be punished by imprisonment of up to six years and/or a fine of up to IDR 1 billion."

To address this, the government has taken several preventive measures to eradicate online gambling in Indonesia. The Coordinating Minister for Political, Legal, and Security Affairs, Hadi Tjahjanto, has conducted three operations to eradicate online gambling in Indonesia. The first action is by asking the Criminal Investigation Agency to take direct action against reports from the Financial Transaction Reports and Analysis Centre (PPATK) regarding accounts suspected of being linked to online gambling transactions. Second, is to follow up on the buying and selling of accounts in villages, which is the modus operandi of perpetrators to approach victims to open new accounts. Third, is to block access to top-up funds at minimarkets suspected of being affiliated with online gambling (Hendarto & Handayani, 2024). Not only that, the Minister of Communication and Informatics of the Republic of Indonesia, Budi Arie, stated that as of July 17, 2023, to May 21, 2024, there have been 1,904,246 pieces of online gambling content that have been taken down and blocked accounts and e-wallets that are suspected of being involved in online gambling (BPMI Setpres, 2024).

The prevalence of online gambling is a failure of the concept of law as a tool of social engineering in Indonesia. Roscoe Pound, a leading legal sociologist, argued that law is a tool for reforming or engineering society. The concept of law as a tool of social engineering states that the law should be a tool to direct society towards the goals it wants to achieve, and even to eliminate negative habits in society. The rapid growth of online gambling in Indonesia is certainly due to several factors, both from the economic conditions of the perpetrators and the existence of external factors to provide opportunities and encouragement to engage in online gambling.

Online gambling users are often fragmented into parties or groups with lower to middle incomes. This modus operandi is used as an instant way to earn income. A PPATK report explains that online gambling perpetrators in Indonesia have reached 3.5 million people and approximately 80% come from the lower to middle class. But not only that, online gambling perpetrators also come from people from the middle to upper class. The Coordinating Minister for Political, Legal, and Security Affairs of the Republic of Indonesia, Hadi Tjahjanto, revealed that online gambling perpetrators also come from people from the middle to upper class with transaction amounts ranging from IDR 100,000 to IDR 40 billion.

There are several factors that make online gambling difficult to eradicate in Indonesia. One of the main causes is the existence of a gambling culture that has been rooted in society. Gambling activities have become an integral part of social identity and community solidarity, showing that gambling is not just an individual activity, but also reflects complex social dynamics. In this context, gambling serves as an important element in the larger social structure, creating bonds among members of society. A prominent anthropologist, Prof. Dr. Semiarto Aji Purwanto, stated that gambling has long been part of the social system attached to Indonesian society and has become a cultural norm. Because gambling has been integrated into the fabric of daily life, efforts to eradicate it are not easy. This condition causes gambling to be considered normal and to thrive in Indonesia. Thus, the existence of gambling becomes a phenomenon that is difficult to overcome, reflecting a deep social reality in society (Antara, 2024).

With the increasing digitalization, online gambling has evolved into a new form of digital crime that requires adaptive and responsive law enforcement in Indonesia. The law must be able to play a role both in preventing and repressing deviant acts. In this context, the law serves as a tool of social control that maintains order in society and keeps people away from acts considered to be violations of norms. With this role, the law aims to create harmony between social change and stability in society (Rusfiana & Kurniasih, 2024).

3.3 *Legal reformulation through the application of machine learning systems in eradicating online gambling practices as a decision support system for Law Enforcement Officers/Aparat Penegak Hukum (APH)*

The rapid development of technology has created anomalies that have led to legal uncertainty, especially regarding the imposition of penalties and criminal offenses for criminal behavior. Conversely, the utilization of AI is highly possible in assisting the law enforcement process, particularly by involving law enforcement agencies. Thus, to realize good implementation, adequate legal instruments are needed. One concrete manifestation of the utilization of AI is the government's commitment to eradicating online gambling through collaboration with Machine Learning. AI systems involving machine learning can be used to detect existing patterns, which is possible because machine learning is designed to make predictions so that the system can reach difficult programming activities (Berita Kominfo, 2024).

According to Muladi, there are three main elements that must be considered in the criminal law enforcement process, namely: a) the element of the act; b) the element of the person who violates; c) the element of the crime. In proving the aspect of the act (daad) in criminal law includes. The elements of the offense, evidence, and general analysis, so that it can be correlated with Daad-Dader Strafrecht, which is a criminal law theory that emphasizes the balance between the aspects of the act, the perpetrator, and the crime. This

theory provides guidelines for interpreting criminal law enforcement related to the perpetrator's identity, the perpetrator's involvement, and the perpetrator's fault. Therefore, this concept must be used as an analytical tool in cyber law enforcement, especially those involving online gambling (Bahiyaturrohmah, 2024).

The act is the core of a criminal offense, namely an act that is considered a violation of the law and causes harm or a threat to social values upheld by society. In the context of online gambling, the act in question is the act of a person or group who intentionally engages in gambling activities through digital platforms that often do not have permits. This act is considered a violation of the law because it contradicts gambling laws in many countries, which aim to protect society from negative impacts such as financial loss, addiction, and fraud (Berdaliyeva et al., 2023).

The person in criminal theory refers to the individual or group who commits the criminal act. In the case of online gambling, the people involved include the main perpetrators (operators of gambling sites), participants, and intermediaries or promoters who help expand access to illegal gambling platforms (Jian et al., 2020). Each party has a different role and a different level of culpability. In law enforcement, action must not only focus on the main perpetrators who operate gambling sites, but also on other parties who facilitate such activities, such as internet service providers, illegal payment providers, or advertisers. Identifying and classifying these roles is important to determine appropriate and effective punishments.

Criminal sanctions are forms of punishment assigned for conduct that breaches legal provisions. In instances of online gambling, these sanctions may include imprisonment, monetary fines, or other forms of administrative penalties (Harahap, 2025). The effectiveness of sanctions in combating online gambling demands a strict enforcement strategy while also taking preventive measures into account. Harsh penalties for organizers and promoters of online gambling can serve as a deterrent to potential violators. Meanwhile, criminal actions involving users or individual gamblers should emphasize educational and rehabilitative approaches to help address and reduce potential dependency or addiction.

Establishing an effective law enforcement strategy to eliminate online gambling requires a holistic and collaborative effort. This involves strengthening coordination among law enforcement bodies, telecommunications regulators, and financial institutions. There needs to be a policy that allows for the effective blocking of illegal gambling sites, as well as the tracking of suspicious financial transactions. In addition, education for the public about the dangers of online gambling is also needed, as well as the creation of stricter and more adaptive regulations to the development of digital technology. Thus, the eradication of online gambling can be carried out more comprehensively and effectively, thus being able to minimize the negative impact on society. Based on this basic concept, the author divides the key segments that can support the effectiveness of law enforcement through the following mechanisms in Table 1.

Table 1. Key segments and mechanisms supporting the effectiveness of law enforcement

No	Mechanisms that support law enforcement
1	In developing an early detection system involving machine learning, the relevant authority, Ministry of Communication and Digital/*Kementerian Komunikasi dan Digital* (KOMDIGI), has the authority to integrate this system as an early detection of suspicious activities on online platforms that could potentially be used for gambling. This algorithm will recognize patterns such as recurring small transactions or unusual activities at certain times.
2	In terms of synchronizing and integrating KOMDIGI monitoring, banks, Financial Services Authority/*Otoritas Jasa Keuangan* (OJK), and PPATK must be committed to accelerating access to information about accounts or transactions related to gambling activities.
3	In addition, KOMDIGI also has a role in monitoring internet traffic to detect websites or applications containing gambling content. Detected sites will be immediately processed for blocking to prevent access from users in Indonesia.
4	KOMDIGI is responsible for directly blocking identified online gambling sites, so that the public cannot access them.

5	To accelerate the eradication of online gambling, a blacklist of bank accounts suspected of being involved in online gambling activities can be created to stop related financial transactions.
6	In the context of monitoring financial transactions, PPATK has the authority to analyze financial activities by paying attention to suspicious transactions suspected of being related to online gambling, especially transactions that have recurring patterns in unusual amounts.
7	In terms of reporting and monitoring, banks can report suspicious transactions to the OJK for subsequent blocking.
8	KOMDIGI can cooperate with social media and digital advertising platforms to remove advertisements or promotions related to online gambling to reduce public exposure.
9	Through KOMDIGI, OJK, PPATK, and related agencies, a national campaign can be carried out to raise public awareness of the dangers and risks of online gambling.
10	In order to support effective law enforcement, the public has the right to access reporting systems for sites or activities suspected of being online gambling through a reporting system connected to KOMDIGI, OJK, and PPATK.
11	In order to support the effectiveness of the law, the police can conduct investigations based on reports from KOMDIGI, banks, OJK, and PPATK to track and arrest perpetrators who operate online gambling platforms.

Through ideal collaboration, law enforcement can be successfully realized. The Quadruple-Helix approach offers a framework for multi-sector cooperation in law enforcement (Sulikah et al., 2021). The collaborative model for combating online gambling integrates the efforts of the government, society, educational institutions, and the private sector, aiming to establish an effective and sustainable law enforcement system using machine learning technology. The government plays a central role as the primary initiator by formulating robust regulations, setting up a monitoring data center, and forming a specialized digital team skilled in using machine learning to identify suspicious activities in cyberspace. KOMDIGI is tasked with monitoring internet traffic, blocking sites suspected of online gambling, and collaborating with internet service providers (ISPs) to prevent access to illegal gambling sites. The government also develops a reporting system that allows the public to report activities or sites suspected of being online gambling, which is then processed using machine learning technology to accelerate the identification of patterns of violations.

The community's role in this collaboration is crucial, particularly in supporting reporting initiatives and anti-online gambling campaigns. Through outreach and educational efforts with NGOs and local communities, the public is informed about the risks and harms associated with online gambling, thereby generating social pressure that can diminish interest in digital gambling. Public participation is facilitated through a machine learning-based reporting platform that allows anonymous and centralized reporting of gambling activities. Public campaigns through social media and community events are also held regularly to strengthen public awareness and create a sense of shared responsibility in maintaining a healthy digital environment.

Educational institutions also have a key role in advancing human resources and technological research. By creating specialized curricula in machine learning, data analysis, and cybersecurity, these institutions train experts who are equipped to assist in the fight against online gambling. In addition, universities collaborate with the government and private sector in research and development of more advanced online gambling detection technologies. This research focuses on improving the ability of machine learning to recognize patterns of suspicious transactions, traffic, and digital interactions, as well as generating new innovations to anticipate the ever-evolving modus operandi of online gambling activities.

The private sector, encompassing technology firms, financial service providers, banks, and social media platforms, also contributes by enforcing policies and utilizing technologies that aid in the elimination of online gambling. Internet service providers and social media apply machine learning to detect and remove online gambling ads and promotions, while banks use machine learning to detect unusual transactions and block accounts suspected of

being involved in gambling activities. In addition, the involvement of these stakeholders can be strengthened through a Joint Decree/*Surat Keputusan Bersama* (SKB) that supports the search and tracking of online gambling perpetrators. With the involvement of the private sector, businesses and the government have a stronger supervisory mechanism, and data collection can be done more effectively. Collaboration forums among all parties are held regularly to evaluate and improve the effectiveness of the policies and technologies implemented, thus creating a safe and clean digital ecosystem free from online gambling activities.

The formation of the Task Force for the Prevention and Handling of Online Gambling Crimes (*Satgas Judi Online*) through Presidential Decree Number 21 of 2024 is a strategic step that requires immediate and comprehensive follow-up. This Presidential Decree regulates the three main tasks of the Online Gambling Task Force, including: (1) optimizing the prevention and law enforcement of online gambling effectively and efficiently, (2) increasing coordination between ministries or institutions and international cooperation in the prevention and law enforcement of online gambling, and (3) determining the implementation of strategic policies and formulating recommendations to optimize the prevention and law enforcement of online gambling.

The leadership structure involving the Coordinating Minister for Political, Legal, and Security Affairs as the head of the task force, the National Police Chief as the daily chairman, and KOMDIGI as the daily chairman for prevention reflects a strong multi-institutional approach in addressing the problem of online gambling.

The Presidential Decree states that the working period of the task force is only valid until December 2024. The characteristics of this task force as a non-permanent institution actually require quick and measurable execution. The limited time available should be a catalyst for immediately developing concrete work programs with clear and measurable targets, not a reason to delay implementation. Coordination between institutions such as the Coordinating Ministry for Political, Legal, and Security Affairs, KOMDIGI, the National Police, BSSN, and other related institutions needs to be immediately concretized in the form of clear coordination protocols, specific division of tasks, and an effective information exchange mechanism. This is done to avoid potential overlaps of authority and policies in the effectiveness of the task force.

As a form of implementation of the follow-up to the mandate of the formation of the task force based on Presidential Decree Number 21 of 2024, it is necessary to formulate several crucial aspects to achieve the effectiveness of eradicating online gambling. What can be done is to develop standard operating procedures between institutions, establish an integrated reporting and monitoring system, set measurable performance indicators, and prepare a periodic evaluation mechanism. All of this needs to be realized immediately considering the non-permanent nature of the task force which requires the achievement of targets within a limited timeframe.

On the other hand, the issuance of the Minister of Communication and Informatics Circular Letter Number 7 of 2024 concerning the Eradication of Online Gambling and/or Slot Gambling in the Environment of the Ministry of Communication and Informatics is a concrete and strategic step in efforts to eradicate online gambling in Indonesia. The implementation of this policy reflects the seriousness of the government, especially the Ministry of Communication and Informatics, in addressing the increasingly worrying problem of online gambling. This Circular Letter is an important instrument in aligning efforts to eradicate online gambling with other law enforcement institutions. This creates a structured framework in joint efforts to eradicate online gambling, especially in relation to the Online Gambling Task Force which has been formed through Presidential Decree No. 21 of 2024. However, the effectiveness of the implementation of this circular will depend on the consistency of implementation, good inter-institutional coordination, and active support from all stakeholders in the Indonesian digital ecosystem.

The urgency of imposing strict legal sanctions on online gambling perpetrators has a strong legal basis in the Indonesian legal system. The existence of explicit sanction provisions, both in the Information and Electronic Transactions/*Informasi dan Transaksi*

Elektronik (ITE) Law and the National Criminal Code, reflects the seriousness of the state in handling online gambling problems. From the perspective of legal certainty, the existence of Article 45 paragraph (3) of the ITE Law, which threatens a maximum penalty of 10 years imprisonment and a fine of up to IDR 10 billion, is an adequate legal instrument to provide a deterrent effect. This substantial threat of sanctions indicates that the legislature views online gambling crimes as serious crimes that can damage the social and economic order of society. Second, the strengthening of sanctions through Article 426 of the National Criminal Code, which regulates imprisonment of up to 9 years or a category VI fine, provides an additional dimension in efforts to eradicate online gambling. This article comprehensively covers various forms of involvement in gambling, ranging from offering, providing opportunities, to making it a livelihood. This shows that the national criminal justice system has anticipated the complexity of the modus operandi of online gambling. The coherence between the two regulations creates a solid legal framework for regulating online gambling sanctions in enforcing the law. The imposition of substantial fines in both regulations reflects the understanding of the legislators regarding the characteristics of online gambling crimes, which often involve large financial transactions. High fines are needed to eliminate the economic motive that is the main driver of this crime.

4. Conclusions

The advancement of digitalization has significantly influenced the development of human life, both positively and negatively. However, like a double-edged sword, the presence of the internet and digitalization has had an impact on digital-based crimes, including online gambling. One of the government's main focuses is the eradication of online gambling, which is suspected of having harmed both society and state finances. The modus operandi used by players and business actors has raised particular concerns for the government, especially in terms of blocking. Even though the ITE Law and the National Criminal Code have regulated such acts, through sociological analysis and facts, the government can utilize AI, specifically Machine Learning, to detect patterns and business models related to online gambling. In addition, strengthening systems, synchronization, and institutions is important and must be supported by policies that are responsive to handling online gambling through the issuance of a Joint Decree.

Ethical Review Board Statement
Not available.

Informed Consent Statement
Not available.

Conflict of Interest
The authors declare no conflict of interest.

Open Access

References

Aldriano, M. A., & Priyambodo, M. A. (2022). Cyber Crime Dalam Sudut Pandang Hukum Pidana. *Jurnal Kewarganegaraan*, *6*(1), 2169-2175. https://doi.org/10.31316/jk.v6i1.2947

Antara. (2024). *Antropolog sebut judi di Indonesia sudah ada sejak dulu, seperti apa?* https://www.tempo.co/gaya-hidup/antropolog-sebut-judi-di-indonesia-sudah-ada-sejak-dulu-seperti-apa--44671

Arianto, M. S. (2010). Membangun database e-journal (Penguatan local content dan peningkatan akses jurnal-jurnal kampus). *Al Maktabah*, *10*(1). https://doi.org/10.15408/almaktabah.v10i1.1605

Bahiyaturrohmah, B. (2024). *Mimpi buruk dunia digital: Tindak kejahatan yang "dilakukan" oleh entitas artificial intelligence.* https://lk2fhui.law.ui.ac.id/portfolio/mimpi-buruk-dunia-digital-tindak-kejahatan-yang-dilakukan-oleh-entitas-artificial-intelligence/

Berdaliyeva, A. S., Kim, A. I., Seraliyeva, A. M., Gassanov, A. A., & Dunentayev, M. V. (2023). Criminological measures to counteract corruption offences in the field of illegal gambling. *Journal of Financial Crime*, *30*(1), 4-23. https://doi.org/10.1108/JFC-11-2021-0246

Berita Kominfo. (2024). *Berantas judi online pemerintah perkuat kolaborasi.* https://www.kominfo.go.id/berita/berita-kominfo/detail/berantas-judi-online-pemerintah-manfaatkan-ai-dan-perkuat-kolaborasi

BPMI Setpres. (2024). *Intensifkan pemberantasan judi daring, pemerintah bentuk satgas khusus.* https://www.presidenri.go.id/siaran-pers/intensifkan-pemberantasan-judi-daring-pemerintah-bentuk-satgas-khusus/

BPS. (2024). *Tingkat pengangguran terbuka menurut provinsi (persen) 2024.* https://www.bps.go.id/id/statistics-table/2/NTQzIzI=/tingkat-pengangguran-terbuka-menurut-provinsi.html

Center for Anti-Corruption Education. (2023). *Ini Alasan Mengapa Korupsi Disebut Kejahatan Luar Biasa.* Center for Anti-Corruption Education. https://aclc.kpk.go.id/aksi-informasi/Eksplorasi/20230209-ini-alasan-mengapa-korupsi-disebut-kejahatan-luar-biasa

CyberHub. (2024). *CyberHub: Upaya membangun industri keamanan siber nasional sebagai bagian dari SKSN.* https://cyberhub.id/e/cyberhub-membangun-industri

Duarif, D., & Saleh, M. (2024). Pencegahan Dan Penindakan Tindak Pidana Siber Oleh Kepolisian Resort Teluk Bintuni. *UNES Law Review*, *6*(4), 12110-12119. https://doi.org/10.31933/unesrev.v6i4.2182

Fajri, D. A. (2024). *3 langkah operasi pemerintah berantas judi online, larang top up game online di minimarket.* https://www.tempo.co/politik/3-langkah-operasi-pemerintah-berantas-judi-online-larang-top-up-game-online-di-minimarket-47778

Harahap, Z. A. A. (2025). Reconstruction of Online Gambling Sanctions in Indonesia: A Comparative Analysis of Ta'zir Sanctions and Penalties of the Electronic Information and Transaction Law. *Al-Istinbath: Jurnal Hukum Islam*, *10*(1), 130-153. https://doi.org/10.29240/jhi.v10i1.11314

Hendarto, D. H., & Handayani, R. S. (2024). Pencegahan Kejahatan Siber Terkait Distribusi Perjudian Online di Indonesia dalam Rangka Mewujudkan Keamanan dan Ketertiban Masyarakat. *Jurnal Syntax Admiration*, *5*(5), 1542-1558. https://doi.org/10.46799/jsa.v5i5.1136

Jian, J., Chen, S., Luo, X., Lee, T., & Yu, X. (2020). Organized cyber-racketeering: Exploring the role of internet technology in organized cybercrime syndicates using a grounded theory approach. *IEEE Transactions on Engineering Management*, *69*(6), 3726-3738. https://doi.org/10.1109/TEM.2020.3002784

Kesuma, R. D. (2023). Penegakan hukum perjudian online di Indonesia: Tantangan dan solusi. *Jurnal Exact: Journal of Excellent Academic Community*, *1*(2), 34-52. https://ejournal.uin-suka.ac.id/tarbiyah/exact/article/view/8128

Marzuki, P. M. (2005). *Penelitian hukum*. Kencana Prenada Media Grup.

McConville, M., & Chui, W. H. (2007). *Research methods for law*. Edinburgh University Press.

Mohamed, M. S., Rukh, G., Schiöth, H. B., Vadlin, S., Olofsdotter, S., Åslund, C., & Nilsson, K. W. (2022). Worsened anxiety and loneliness influenced gaming and gambling during the COVID-19 pandemic. *Journal of Clinical Medicine*, *12*(1), 249. https://doi.org/10.3390/jcm12010249

Noor, E., & Manantan, M. B. (2022). *Artificial intelligence; Kecerdasan buatan*. Asia Society. https://asiasociety.org/sites/default/files/inline-files/ASPI_RaisingStandards_report_fin_web_0.pdf

Nufus, W. H. (2024). *PPATK: Duit Judi Online Mengalir ke 20 Negara, Totalnya Triliunan.* https://news.detik.com/berita/d-7396208/ppatk-duit-judi-online-mengalir-ke-20-negara-totalnya-triliunan

Nur, M. S., Puluhuwa, F., & Wantu, F. M. (2023). Kebijakan penegakan hukum dalam upaya menangani cyber crime yang dilakukan oleh polri virtual di Indonesia. *The Juris*, *7*(2), 464-470. https://doi.org/10.56301/juris.v7i2.1122

Nurdiansyah, R., Mugni, M., & Lailiyah, M. R. A. (2024). Efektivitas penegakan hukum terhadap tindak pidana judi online. *Federalisme: Jurnal Kajian Hukum dan Ilmu Komunikasi*, *1*(3), 219-238. https://doi.org/10.62383/federalisme.v1i3.79

PPATK. (2024). *Gawat! Jumlah fantastis usia anak main judi online*. https://www.ppatk.go.id/news/read/1373/gawat-jumlah-fantastis-usia-anak-main-judi-online.html

Rezy. (2024). *Artificial intelligence (AI) in cyber security*. https://csirt.kominfo.go.id/artificial-intelligence-ai-in-cyber-security/

Rusfiana, Y., & Kurniasih, D. (2024). The Role of Civil Society Organizations in Promoting Social and Political Change in Indonesia. *Journal of Ethnic and Cultural Studies*, *11*(3), 187-207. http://dx.doi.org/10.29333/ejecs/2154

Soekanto, S. (2004). *Faktor-faktor yang mempengaruhi penegakan hukum.* Raja Grafindo

Sulikah, S., Mindarti, L. I., Sentanu, I. G. E. P. S., & Hidayah, K. (2021). Pendekatan Kolaborasi Quadruple Helix dalam Peningkatan Ekonomi Daerah. *Jurnal Borneo Administrator*, *17*(1), 1-20. https://doi.org/10.24258/jba.v17i1.714

Uno, H. B. (2011). *Teknologi komunikasi dan informasi pembelajaran.* Bina Aksara

Widianingrum, A. R. (2024). Analisis Implementasi Kebijakan Hukum Terhadap Penanganan Kejahatan Siber Di Era Digital. *Journal Iuris Scientia*, *2*(2), 90-102. https://doi.org/10.62263/jis.v2i2.40

Biographies of Authors

Dimas Aditya Ashari, Faculty of Law, Diponegoro University, Tembalang, Semarang, 50275, Indonesia.
- ▪ Email: asharidimasaditya@gmail.com
- ▪ ORCID: N/A
- ▪ Web of Science ResearcherID: N/A
- ▪ Scopus Author ID: N/A
- ▪ Homepage: N/A

Kara Megara Cakrawala, Faculty of Law, Diponegoro University, Tembalang, Semarang, 50275, Indonesia.
- ▪ Email: karamegara2014@gmail.com
- ▪ ORCID: N/A
- ▪ Web of Science ResearcherID: N/A
- ▪ Scopus Author ID: N/A
- ▪ Homepage: N/A

Maheswari Kinanthi Prabowo Putri, Faculty of Law, Diponegoro University, Tembalang, Semarang, 50275, Indonesia.
- ▪ Email: maheswarikth@gmail.com
- ▪ ORCID: N/A
- ▪ Web of Science ResearcherID: N/A
- ▪ Scopus Author ID: N/A
- ▪ Homepage: N/A

Baiq Aras Sakira Indil'an, Faculty of Law, Diponegoro University, Tembalang, Semarang, 50275, Indonesia.
- ▪ Email: baigarassakira23@gmail.com
- ▪ ORCID: N/A
- ▪ Web of Science ResearcherID: N/A
- ▪ Scopus Author ID: N/A
- ▪ Homepage: N/A

Alzena Aisyah Fitri Khalida, Faculty of Economics and Management, Bogor Agricultural University, Dramaga, Bogor, 16680, Indonesia.
- ▪ Email: alzenaaisyfrr@gmail.com
- ▪ ORCID: N/A
- ▪ Web of Science ResearcherID: N/A
- ▪ Scopus Author ID: N/A
- ▪ Homepage: N/A