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Social networks as a tool for detecting organised criminal groups in the Philippines

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Abstract. The purpose of the study was to investigate the use of social media by law enforcement agencies to detect and investigate organised crime in the Philippines. The study used a set of complementary methods: an analytical and applied approach based on secondary data analysis, a method of system structural analysis, an analytical and synthetic method, a case study, and a method of analysing social networks. It was proved that Open Source Intelligence and Social Network Analysis were transformed into the basis of the Intelligence-Led Policing strategy. It was determined that such methodological integration allows investigators to convert fragmented digital traces into verified physical coordinates of criminal hubs. This proved the feasibility of switching from traditional mass arrests to a strategy of spot neutralisation of key network nodes (brokers and organisers) identified using centrality metrics. This justified the strategic transition from reactive arrests to point-by-point neutralisation of key network nodes (brokers and organisers) identified through network analysis. In the context of the study, a number of practical recommendations were developed aimed at institutionalising the M-SNOS methodology in law enforcement agencies in the Philippines. The developed practical recommendations summarised the need to institutionalise hybrid counteraction by creating a Joint Digital Intelligence Fusion Centre and reorienting the operational strategy to point-by-point neutralisation of key network nodes. The practical significance of the results lies in the fact that law enforcement organisations and technology platforms (Meta, TikTok) can use them to institutionalise the M-SNOS model and implement the legal and operational protocols necessary for a systematic fight against transnational cybercrime

Keywords: cyber slavery; mass victimisation; criminal dynamics; digital platforms; digital footprints; syndicate

Introduction

The Philippines faces the challenge of transnational organised crime, including human trafficking, drug trafficking, and cyber fraud, with these groups using social media platforms such as Facebook, TikTok, and Telegram to coordinate, recruit, and launder funds. Traditional intelligence and law enforcement methods were not sufficient to counter these highly adaptive network structures. Thus, there was a need to explore innovative tools for analysing the array of public and semi-closed data from social networks (OSINT – Open-Source Intelligence), as it will provide law enforcement agencies in the Philippines with a methodological basis for identifying and predicting the activities of organised crime groups (OCG) in the digital space.

Research conducted by B.G. Hababag *et al.* (2024), which focused on the analysis of hijacking incidents carried out by the Abu Sayyaf Group (ASG) (Philippines), revealed an understanding of their operational dynamics: centrality measurements identified one node with the greatest impact and another, proactive, indicating a hierarchical but dynamic structure of ASG operations. The identification of social communities confirmed that the abductions were carried out by groups, not individuals, indicating a reorientation of the Philippines national security strategies. Research by S. Donny & N. Zulkifli (2025) focused on assessing the impact of human trafficking and money laundering in the stability and security discourse of the Philippines and Malaysia, using the concept of National Security. The researchers examined the effectiveness of measures implemented by the governments of both countries (legal reforms, regional cooperation), and pointed out the need to strengthen international cooperation, which was important for overcoming crimes that undermine the legal system. W. Duan Xiong & Y.W. Chong (2024), using the technology of data extraction from social networks (SNDM – Scanning Nonlinear Dielectric Microscopy) for comprehensive crime analysis, determined that the use of mining associative rules, cluster analysis, and community detection allows clearly revealing the communication methods and organisational structure of criminal networks. The researchers also built a model for predicting crime trends, which provided public security agencies with timely warning signals to predict the activities of transnational organised crime groups operating, in particular, in the Philippines.

Results of research by K. Zhao *et al.* (2024) confirmed the effectiveness of the Social Network Forensic Analysis model, which uses network representation training to deal with complex criminal networks. The study showed that the model proved its ability to accurately vectorise nodes (using Deepwalk, Line, and Node2vec algorithms), which ensures the preservation of both structural information and properties of the nodes themselves. In addition, the use of modified random wandering and hierarchical clustering improved the accuracy of relationships between nodes and optimised clustering, which allows identifying key figures, leadership structures, and establishing a hierarchy of influence in criminal networks. In addition, the study by F.H. Troncoso & R. Weber (2024) introduced the StPro model for identifying members of a criminal organisation, starting with only one known suspect. The application of the model demonstrated high efficiency, which confirmed the ability of StPro to support criminal investigations, especially in the initial stages, in the case of kidnappings and other violent crimes in the Philippines.

The study by A. Fernández-Planells *et al.* (2021) highlighted the importance of social media in gang lifestyles. The researchers suggested that social networks can be an effective tool in criminal investigations, in particular in the Philippines, as they allow identifying communication patterns and uncovering gang members. The results of the study pointed to the development of a new research question around the topic of social media use by street youth groups. The publications were found to have a variety of topics, methods, samples, and ethical protocols, reflecting the multifaceted nature of online gang activity. The study by Y. Hsiao *et al.* (2023) proved that online conflicts between gang members were not random, but target network relationships that were critically dependent on offline geographical relationships and the history of shootings. A key finding was that statistical associations were based on culturally specific language (gang names, symbols), which was crucial for criminal investigations in gang-related cases in the Philippines, as it highlights the need for mixed methods and qualitative analysis to verify big data. Analysis of social networks by D. Lebert (2025) showed that criminal investigations, reflecting relationships within criminal networks, reveal key players and hidden connections. This method helps law enforcement agencies to target organised crime more effectively.

The analysed studies focused on individual cases (kidnappings, specific gangs) or theoretical / model aspects (node vectorisation, linear identification models). The gap was the lack of a comprehensive, standardised methodological framework that would integrate effective OSINT and SNA (Social Network Analysis) tools, adapt them to the communication features of Philippine organised crime groups in specific, highly adaptive digital environments, and provide Philippine law enforcement agencies with practical recommendations for systematic detection, forecasting, and dismantling of heterogeneous transnational organised crime groups (for example, a combination of drug trafficking and cyber fraud). Therefore, the purpose of the study was to investigate the use of social networks and digital intelligence tools to identify and investigate the activities of organised criminal groups in the Philippines. The goal included the following tasks: to analyse the features of the use of social media (Facebook, TikTok, Telegram) by organised criminal groups in the Philippines for coordination, recruitment, and money laundering; to substantiate the integration of SNA and OSINT methods to create a model for accurate identification of key figures and hierarchical structure of criminal networks; to develop practical recommendations for the use of the analysed methodologies for law enforcement agencies in the Philippines.

Materials and Methods

This study was analytical and applied, based on secondary data analysis, combining an assessment of digital threats with the development of practical recommendations for improving the work of Philippine law enforcement agencies. The collection of materials for the study was based on the principle of multi-source (triangulation), combining official reports, and case studies illustrating the relationship between digital space and physical crimes.

The study used a set of complementary methods, which provided a systematic approach to the analysis of criminal networks. The method of secondary analysis of empirical data was used to analyse reports by S. Howe (2025), Philippines suspected digital fraud… (2025), Philippines: Global Organised Crime Index (2025). The criterion for selecting these materials was the relevance of the data (2024-2025) and their focus on quantitative verification of criminogenic dynamics, in particular, indicators of digital fraud and socio-demographic characteristics (age, level of mobile penetration). This method was used for quantitative verification of criminogenic dynamics. The system and structural analysis method and the analytical synthetic method were used to substantiate the integration of SNA and OSINT into the M-SNOS (Modified Strategy for Evaluating Online Sources) models. These methods allowed breaking down the complex architecture of transnational cybercrime (professionalisation, migration to Telegram) into functional elements and creating a model of digital OCG exploitation in the Philippines.

The case study method was used to confirm the effectiveness of the Intelligence-Led Policing (ILP) strategy in practice. Case analysis of Philippines rescues more than 1,000... (2023), C.L. Caliwan (2024), Business & Human Rights Resource Centre (2025) was conducted to establish causal relationships between digital intelligence (pattern detection, content geolocation) and the physical elimination of criminal hubs. The selection of cases was carried out according to the criterion of evidence: situations demonstrating the convergence of OSINT (detection of patterns, geolocation of content) and SNA (identification of hierarchy) as a success factor in eliminating physical crime centres were analysed. The social network analysis (SNA) method provided a theoretical rationale for the strategic transition of Philippine law enforcement agencies to ILP tactics involving the neutralisation of criminal network nodes. The effectiveness of this strategy was confirmed by practical cases where social networks (Facebook, Telegram, TikTok) have become a source of intelligence information. The analysis was carried out based on analytical materials (United Nations Office on Drugs and Crime, 2024; Telegram fueling crime..., 2024; Suspected digital fraud rate..., 2025). In cases of liquidation of hubs related to human trafficking and cyber fraud, data from these platforms were used to identify recruitment patterns and geolocation of physical centres.

The results of the analysis were interpreted as evidence of the completion of the structural transformation of crime into a model of "cyber slavery" (a hybrid threat combining Human Trafficking and Cybercrime). The key approach was to identify legal conflict and assess the judicial applicability of digital evidence collected by OSINT methods in the context of Philippine laws (Supreme Court of the Republic Philippines…, 2001; Act of the Republic of the Philippines No. 10173, 2012; Act of the Republic of the Philippines No. 10175, 2012). The regulatory framework was selected based on the principle of relevance: only acts directly regulating the collection, processing, authentication, and judicial admissibility of digital evidence (logs, metadata) were considered. Based on this analysis, a number of practical recommendations were developed aimed at institutionalising the M-SNOS methodology and strengthening partnership between the government and key social networks to systematically counter this hybrid threat. The limitations of the study were the use of secondary data, which did not allow for the initial collection of information from closed Telegram groups, where the coordination activity of OCGs was concentrated.

Results

Digital landscape, platform ecosystems, and criminal dynamics of the Philippine region. According to the analytical report by S. Howe (2025), the digital landscape of the Philippines has become an extensive attack surface for organised crime groups. The phenomenon of permanent digital presence (90.8 million users, 122% mobile penetration) combined with the low median age of the population (26.1 years) led to synergistic convergence of risks, creating a favourable basis for precise exploitation of vulnerable groups. According to the report Philippines suspected digital fraud… (2025), the country shows a steady negative trend, exceeding global digital fraud rates for the fifth consecutive year. In 2024, the world's second rate of suspicious digital transactions was recorded (13.4%), exceeding the global average of 5.4%. The high latency and effectiveness of fraudulent schemes was confirmed by the fact that approximately 74% of respondents report attempts at phishing or social engineering. The socio-economic consequences of this phenomenon were devastating: a nominal financial loss of USD 768 was equivalent to a two-month household income, which creates a destructive feedback loop between digital penetration and economic precarity (Suspected digital fraud rate..., 2025). The poverty factor and the imperative of labour migration, especially among foreign Filipino workers (OFW), have turned vulnerable groups into priority targets for exploitation – from financial fraud to recruitment into criminal networks and use as "money mules" to legalise income.

OCG dynamics were characterised by structural professionalisation and transition to an industrial model. Highly qualified human capital (digital marketing specialists, search engine optimisation, data science) was being integrated into criminal hierarchies. Moreover, there was a technological asymmetry: criminals use generative artificial intelligence (Deepfakes) to pass verification on exchanges or create convincing avatars for "romantic scams".

The financial flows of these transactions were masked through the use of stablecoins (mainly USDT on the Tron / TRC-20 blockchain), which allows bypassing traditional bank monitoring (Suspected digital fraud rate..., 2025).

Digital platforms, in particular the Meta (Facebook) and TikTok ecosystems, have become dominant recruitment vectors, replacing traditional methods. The operational algorithm of criminal groups provides for the creation of "fictitious digital legitimacy": the generation of accounts that mimic the activities of licensed immigration consultants, visa agencies, or recruiters under the "study-to-work" schemes (United Nations Office on Drugs and Crime, 2024). This digital infrastructure allows criminal networks to algorithmically target vulnerable groups (job seekers, migrant workers), directing them to the sectors of forced labour, cyber fraud, and sexual exploitation. Analysis of the organisational structure of the exposure of organised crime groups reveals operational stratification: local Filipino actors were involved at the stage of initial contact and recruitment (providing linguistic and cultural trust), while the logistics of traffic and direct management of exploitation centres were controlled by foreign syndicates (mainly citizens of the People's Republic of China (PRC), Thailand, and Vietnam) (Suspected digital fraud rate..., 2025). Such a transnational criminal nexus complicates the investigation and requires the use of network analysis to identify connected brokers operating at the intersection of local and international jurisdictions.

In parallel, there was a migration of OCG infrastructure to encrypted ecosystems. The Telegram platform has become a dominant hub for drug trafficking and human trafficking due to end-to-end encryption (Telegram fueling crime..., 2024). The threat was the movement of compromised data markets (logs marketplace) to closed Telegram channels, which creates a resource base for attacks based on information obtained through infostealer malware. The systematisation of social media use was presented in Table 1.

Table 1. Matrix of digital OCG operation in the Philippines (2020-2025)

Type of OCG crime	Basic use of social media	Key platforms	SNA strategic focus
Human Trafficking / Illegal Recruitment	Targeting and deceiving job seekers (OFWs); exploiting poverty and young demographics.	Facebook, TikTok, promoters of "study-and-work" schemes.	Identification of Degree Centrality of frontline recruiters and brokers (Betweenness).
Cyber fraud / Sextortion	Victim targeting, payment collection, money mules recruitment, digital data trading.	Closed communities, Telegram (data markets).	Mapping specialised roles (technical architects, coordinators) and identifying financial nodes.
CSEA (Child Sexual Exploitation and Abuse)	Commodification of materials; Financial transactions and monetisation of platforms.	Platforms with a large number of users; Underground markets.	Tracking of financial flows and identification of links between digital intermediaries and intermediaries.

Source: compiled by the author based on the analysis of the Philippines: Global Organised Crime Index (2025), S. Howe (2025)

Analysis of the table has led to the conclusion that criminal groups' digital infrastructure was segmented by operation. Criminals build a two-tiered system: high-traffic public platforms (Facebook, TikTok) were used exclusively as "entry points" for mass recruitment and victim sourcing, while operational activities, financial transactions, and coordination were moved to encrypted ecosystems (Telegram) or closed communities. Consequently, the digital space of the Philippines has become a hybrid threat environment, where a high level of technological adaptation of the population increases vulnerability to transnational organised crime groups. The combination of socio-economic factors (poverty, migration) with the availability of anonymisation tools and artificial intelligence has created an ecosystem of "cyber slavery" and fraud. This crime architecture, which combines public recruitment with encrypted management, makes traditional investigative methods ineffective, making it necessary to implement OSINT and network analysis tools to deanonymise key nodes in criminal networks.

Methodology for countering OCG based on the M-SNOS model. In the face of declining effectiveness of conventional intelligence methods through encryption, it was necessary to implement the M-SNOS model, which was based on the integration of Open Source Intelligence (OSINT) and social network analysis (SNA). OSINT serves as a foundation for accumulating publicly available data, where the use of AI tools was mandatory for processing arrays of unstructured data (images, geotags). Aggregated data sets serve as an empirical basis for implementing the SNA methodology, which allows reconstructing the topology of social connections and ensure preventive neutralisation of threats at the point of their generation (Robertson *et al.*, 2025). Methods of cluster analysis and mining of associative rules allow identifying "technical nodes" and "service brokers" who act as architects of the stability of criminal networks. This provides a shift to Intelligence-Led Policing tactics, converting chaotic data into procedurally relevant information.

The effectiveness of this methodology was confirmed by the analysis of a number of operations. In particular, the operation of law enforcement agencies in May 2023 – the elimination of a fraudulent centre in the province of Pampanga, where more than 1,000 citizens from ten Asian countries were held in slavery (Philippines rescues more than 1,000..., 2023). The dynamics of cybercrime were characterised by structural professionalisation and technological asymmetry (the use of data science and deepfakes), which has led to the emergence of a hybrid threat – cyber

slavery, where victims of exploitation were instrumentalised as perpetrators of cyber fraud. This precedent highlighted the role of foreign syndicates in using the Philippines digital infrastructure to deploy global criminal operations. Table 2 presents a structural and functional analysis of the case Philippines rescues more than 1,000… (2023).

Table 2. Structural and functional analysis of the case regarding the elimination of a fraudulent centre in Pampanga province

Analysis parameter	Empirical data of the case (Facts)	Criminological interpretation and significance for research
Event identification	Special operation of the National Police of the Philippines (PNP) on May 4, 2023 in the city of Mabalakat (Pampanga). Cyber hub shut down, 1,090 people rescued.	A precedent for the large-scale liquidation of an infrastructure facility of transnational organised crime operating under the cover of legal business.
Geography and demographics of victims	Multinational composition: Vietnam (389), China (307), Philippines (171), Indonesia (143), and citizens of Nepal, Malaysia, Myanmar, Taiwan.	The multinational composition pointed to the globalised nature of recruitment and well-established logistics channels for the movement of people ("human traffic") within Asia.
Recruitment Vector	Use of social networks (Facebook, Telegram) to post job vacancies in call centres with the promise of legal employment and relocation.	Role of digital platforms as a tool for primary victimisation. Criminals exploit the economic vulnerability of victims through the mechanism of "digital deception".
Coercion Mechanism	Confiscation of passports, restriction of freedom of movement (closed perimeter), 18-hour working day, threat of physical violence.	Classic signs of human trafficking for the purpose of labour exploitation. Physical control combined with psychological pressure and debt bondage.
Nature of criminal activity	Implementation of the "Pig Butchering" (Sha Zhu Pan) scheme: creating fake romantic relationships to attract investments in fake crypto platforms.	Crime convergence: victims of human trafficking were forcibly transformed into perpetrators of cyber fraud. This makes it difficult to qualify their procedural status (criminal vs victim).
Organisational hierarchy	Arrest of 12 guards (7 citizens of China, 4 – Indonesia, 1 – Malaysia).	Indicates control of operations by foreign syndicates. The Philippines was used as a "safe haven", while the beneficiaries and organisers were often non-residents.
Conclusions for the M-SNOS methodology	The need to identify online recruitment patterns and analyse financial flows from crypto fraud.	Case proved the need to use M-SNOS to destroy not only the financial, but also the recruitment infrastructure of organised crime groups at an early stage (before moving victims).

Source: compiled by the author based on the analysis of Philippines rescues more than 1,000… (2023)

The systematised data showed the completion of the structural transformation of regional crime into a hybrid model of "cyber slavery", the defining feature of which was the convergence of traditional traffic with high-tech fraud. This symbiosis has given rise to the phenomenon of "forced criminality", where victims of exploitation were instrumentalised as perpetrators of cybercrime, which creates a legal conflict and makes it difficult to identify beneficiaries. This modus operandi not only affirmed the Philippines' role as an operational "safe hub" for foreign syndicates, but also demonstrated a technological asymmetry where digital infrastructure serves as a multiplier of criminal influence. These trends highlight the need for a paradigm shift in countermeasures: a transition from exclusively reactive force measures (ex post facto) to preventive digital intelligence within the framework of the M-SNOS methodology, which allows recruitment networks to be de-anonymised at the stage of digital contact, before the victims were physically relocated.

The practical implementation of Intelligence-Led Policing was demonstrated in the case of the elimination of the hub in Paraniak – C.L. Caliwan (2024). Although the operation culminated in a physical assault on Centrium Tower, its success was based on the analysis of digital traces. Social networks Facebook and Instagram served as a basis for creating digital legends (fake profiles of successful models) and recruiting personnel, while dating applications (Tinder, Bumble) served as an entry point for finding victims through the mechanics of "Love Scams". The next step was to isolate the object in secure messengers (Telegram, WhatsApp), where criminals avoided moderation and applied psychological pressure through video calls for final persuasion. The finalisation of the fraud took place on fake investment platforms, where traffic was directed to steal funds, demonstrating a well-established operational migration from public social networks to closed channels of exploitation. In this context, social networks acted as a "double agent" – identifying patterns (analysis of similar profiles of "wealthy models" allowed linking scattered cases of fraud into a single network); geolocation of infrastructure (monitoring of video content ("indecent shows" and streams) that victims were forced to perform allowed investigators to identify interiors and locate the physical office of the criminals). Table 3 demonstrates how the theoretical principles of OSINT and digital intelligence were converted into practical evidence and physical arrests.

Table 3. Structural and functional analysis of the case regarding the liquidation of the hub in Paraniak

Element of the Intelligence-Led Policing strategy	Implementation in the Paraniak case (2024)
Digital pattern recognition	Instead of responding to individual complaints, the police analysed an array of fake accounts. Consistency was found: identical communication scripts, similar "rich model" profiles, and identical social engineering techniques that pointed to a single control centre rather than disparate hackers.
Content-to-Location correlation	Law enforcement officers used video content broadcast by criminals as a source of intelligence. Analysis of the video background, broadcast IP addresses, and metadata allowed localising the physical address of the studio in the Centrium Tower business centre, linking virtual chat rooms to real rooms.
Deanonymisation of the organisational structure	Social networks have become tools that have brought investigators to the top of the hierarchy. Instead of arresting only low-level operatives (CSR), the police identified and detained members of the management – Nan Shan, Detu Su, and Wu Jian Bin. This was made possible by tracking the chain of teams and financial flows from victims to organisers.
Moving from Digital to Physical	The case illustrates the main goal of the new strategy: physical elimination of the hub. Blocking social media accounts was a temporary measure. Instead, the raid seized servers, computers, and mobile phones that were the source of evidence ("logs marketplace") for further investigation.

Source: compiled by the author based on the analysis of C.L. Caliwan (2024)

The practical implementation of the Intelligence-Led Policing strategy in this case showed a change in the architecture of countering organised crime: the rejection of situational response in favour of deanonymisation of infrastructure. The ability of the investigation to convert fragmented digital traces – from social engineering scripts to video broadcast metadata – into verifiable physical coordinates was a success factor, allowing neutralising not only the executive staff, but also the syndicate's management. This approach finally transformed OSINT from an auxiliary analytical tool to a basis for conducting force operations, where the priority was not the temporary blocking of virtual assets, but the physical seizure of hardware – the carrier of a legally significant evidence base for prosecution.

Scaling up counteraction requires going beyond military operations. The analysis of the case Business & Human Rights Resource Centre (2025) pointed to the application of this technological approach, supported by public-private partnerships. In January 2025, the Philippine government (through the Department of Migrant Workers – DMW) conducted an anti-fraud operation. Law enforcement agencies working with social networks Facebook and TikTok, based on their algorithms and internal tools, identified suspicious patterns (mass posting of identical advertisements, use of certain keywords, unusual activity of new accounts) faster than conventional investigation method No law enforcement agency can physically remove more than 70,000 advertisements. Only cooperation with platforms that have technological access allowed for large-scale and rapid disorganisation of the criminal network. This operation was aimed at illegal employment of migrant workers who actively used social networks (Table 4).

Table 4. Role of social media and the scale of removal of illegal job advertisements in the Philippines

Platform	Number of deleted posts	Purpose of the crime	Key scheme performers
Facebook (Meta)	50,220	Charging high recruitment fees for non-existent or operational jobs. Involvement in human trafficking schemes.	Legal Connect Travel Services, Golden Power SRLS, Alpha Assistenza, and other fraudulent agencies.
TikTok	21,433		
Overall result	More than 70,000	Prevent potential exploitation of "thousands" of employees.	

Source: Business & Human Rights Resource Centre (2025)

The scale of the digital sweep conducted in January 2025 confirmed the dependence of transnational crime syndicates on the algorithmic ecosystems of Meta and TikTok as the main recruitment channel. The volume of deleted content showed that conventional methods of law enforcement response were ineffective against automated mass targeting. Successful neutralisation of the threat to thousands of potential victims was made possible only by moving to the direct operational partnership (G2B) model between the government and technology giants. This has created a new standard of counteraction, where platforms were transforming from passive intermediaries into active participants in the security sector, using internal AI tools (Artificial Intelligence) to preventively disrupt criminal networks at the stage of setting traps, which was unattainable for external OSINT monitoring.

Legal regulation and judicial challenges and practical recommendations for the Philippines. The effectiveness of using OSINT in the Philippines depends on compliance with the law and ensuring the validity of evidence. The legal framework includes Supreme Court of the Republic Philippines… (2001), Act of the Republic of the Philippines No. 10173 (2012) and Act of the Republic of the Philippines No. 10175 (2012) (Table 5).

Table 5. Legal regulation of OSINT in the Philippines

Legislative Act	Key value for OSINT
Act of the Republic of the Philippines No. 10173	Regulates the collection, processing, and use of personal data. Limits the possibility of uncontrolled data collection, even if it was publicly available. OSINT-investigators must prove that data collection complies with the principles of legality, proportionality, and purpose.
Act of the Republic of the Philippines No. 10175	Defines cybercrimes (including phishing, illegal access to data, cybersex trafficking) and establishes procedures for their investigation. Provides law enforcement agencies with the authority to collect digital evidence, including traffic and subscriber data.
Supreme Court of the Republic Philippines	Establishes rules according to which electronic data (including chat logs, emails, videos, OSINT data) can be accepted in court. This requires authentication of evidence and compliance with the chain of custody.

Source: compiled by the author based on Supreme Court of the Republic Philippines… (2001), Act of the Republic of the Philippines No. 10173 (2012), Act of the Republic of the Philippines No. 10175 (2012)

This table systematises the three-level architecture of legal regulation of digital investigations in the Philippines, which defines the limits of legitimacy of OSINT operations. An analysis of legislative acts has shown that the effectiveness of combating cybercrime depends on striking a balance between the expanded operational powers of law enforcement agencies granted by Act of the Republic of the Philippines No. 10175 and the imperatives of personal data protection under the Data Privacy Act, which imposes restrictions even on the collection of publicly available information. The key tool for legalising the collected data was the Supreme Court of the Republic Philippines… (2001), which transform technical information (chat logs, metadata) into admissible court evidence through strict requirements for authentication and chain of custody preservation, confirming the thesis that without procedural validation, OSINT results lose their legal perspective.

The main challenge for investigators using open-source intelligence techniques was to ensure the integrity and procedural admissibility of the evidence collected in court (Robertson *et al*., 2025; Dekens, 2025). The main problem was the risk of violating the Terms of Service (ToS) of social platforms, since many automated tools for mass data collection (Web scraping) technically contradict the rules of the Meta or TikTok ecosystem. Although this method of gathering information was not always classified as illegal under Philippine law, the fact that corporate rules have been violated can be used by the defence to discredit the ethics or legality of the investigation, thereby calling into question the legitimacy of the materials obtained.

Another aspect was the threat of operational security compromise (OpSec), when improper use of OSINT tools leads to disclosure of the true identity or IP address of the investigator (deanonymisation). Such a leak of information not only creates immediate risks to the security of the operation, but can also lead to procedural violations, which will later become the basis for declaring evidence inadmissible. The situation was complicated by the fragility of digital evidence, which was easily modifiable, which requires strict compliance with the chain of custody and authentication procedures. To ensure admissibility in court, investigators must guarantee the integrity of data from the moment it was collected, using cryptographic hash sums to confirm file integrity, and engage computer forensics experts to testify on the reliability of digital logs (Robertson *et al*., 2025; Dekens, 2025). Overall, the successful use of OSINT in the fight against transnational crime in the Philippines requires high legal and technical literacy from law enforcement agencies to effectively balance the speed of information collection and strict requirements for the legality of the evidence base.

Effective implementation of the M-SNOS (OSINT and SNA) model in Philippine law enforcement requires a comprehensive approach focused on institutionalisation, operational strategy, human resources, legal oversight, and international engagement. Institutionalisation of the methodology involves the creation of a Unified Digital Intelligence Fusion Centre (UDIFC) under the auspices of the National Bureau of Investigation (NBI) and the Department of Justice (DOJ). This centralised body should become a single platform for SNA / OSINT, which guarantees interagency coordination and minimises conflicts of jurisdiction. The operational strategy should shift to prioritising Betweenness Centrality. Efforts should focus not on ordinary perpetrators, but on nodes whose removal would cause maximum structural damage to the network, in particular corrupt officials and technical specialists (IT architects) who support cyber fraud. It was necessary to strengthen personnel capacity and specialisation. This includes the introduction of mandatory SNA / SNDM training programmes for analysts covering cluster analysis and centrality metrics. In parallel, certification with Digital Forensics should be provided to all operational personnel to ensure the proper handling and integrity of electronic evidence in accordance with international standards. The success of M-SNOS depends on strict legal oversight and OpSec protocols. Clear internal Operational Security (OpSec) protocols must be developed and a legal oversight body must be established to mandatorily approve data collection methods that use automation and artificial intelligence. This was a safeguard against legal risks and ensures the judicial suitability of the collected evidence. The fight against hybrid transnational crime requires the active use of international cooperation mechanisms (INTERPOL, UNODC) and integration into international legal

frameworks, such as the Global Cross-Border Privacy Rules (CBPR) Forum, to effectively overcome the transnational complexity of criminal networks, in particular Chinese and Mexican cartels.

The results of the study diagnosed the transformation of the Philippines into a global hub of industrialised cybercrime, where the convergence of technologies (AI, cryptoassets) and social vulnerability has formed hybrid threats such as "cyber slavery". Secondary analysis of cases confirmed that effective counteraction against transnational syndicates was ensured exclusively by transitioning to an Intelligence-Led Policing strategy based on the M-SNOS methodology, which allows digital traces to be converted into precise physical coordinates of criminal centres even before the stage of mass victimisation. In this case, scaling success depends on the synergy between the public sector and technology platforms (G2B partnership) to preventively block threats, while the ultimate strategic effectiveness depends on the ability of investigators to legalise OSINT data within the legal framework, ensuring its procedural admissibility.

Discussion

The results confirmed the completion of the structural transformation of regional crime (in the case of the Philippines) into a hybrid model of "cyber slavery", which correlates with key trends identified by others in related studies. In particular, R. Woźnica (2021) argued that the evolution of international organised crime led to an accelerated transition from rigid hierarchical structures to flexible, decentralised network forms that were more stable and latent. This network architecture, which minimised risks to management, was a factor that made the transnational nature and high efficiency of the "cyber slavery" scheme possible in recruiting victims through social networks. O.V. Tkachova (2022) further systematised these advantages, determining that the high efficiency of TOC (Territorial Organisation of Crime) was ensured by its rapid adaptation, rationality, and priority of minimising risks. The researcher highlighted the trend of TOC transitioning to cybercrime due to the advantages of the digital environment, such as anonymity and uncontrolled activity, which created the conditions for the development of financially secure criminal communities identical to those identified in the current study.

G.N.A Suarmita & H. Purnomo (2024) provided an empirical context in their papers, confirming that cyber fraud and cyber slavery were characterised by technological asymmetry, the use of fake identities, and the disregard for geographical boundaries, which was identical to the challenges that the M-SNOS model was designed to solve in the current study. In the second part of their analysis, the researchers noted that the fight of the Indonesian National Police (POLRI) against this hybrid threat was reduced due to insufficient internal and interagency coordination, which directly justified the need for the current study to create a Joint Digital Intelligence Fusion Centre (UDIFC) to provide the necessary "Triangular Synergy". Ultimately, L.M. Maldonado Ruiz (2025) provided a legal justification, noting that the cross-border nature of cybercrime and its close connection to networks contributed to a high level of impunity (impunidad). This confirmed the importance of the practical recommendations of the current study to constantly update the regulatory framework and ensure the judicial suitability of digital evidence, since without legalising the results of OSINT in the legal field, effective counteraction was legally impossible.

Analysis of the results of the study conducted by R. Hutagalung (2025), confirmed that in the digital age, there were serious risks associated with computer crime (ciberdelitos), which was rapidly evolving, outstripping traditional regulatory requirements. The key finding was that the cross-border nature of these offences and their close connection to organised criminal networks significantly hampered effective criminal prosecution. This has contributed to a high level of impunity (impunidad). Thus, the fight against cybercrime requires constant updating of the regulatory framework, ensuring effective international cooperation, and adopting a multidisciplinary approach that can withstand both the legal and technological complexity of this phenomenon.

Secondary case analysis in the current study proved that traditional methods were ineffective. Instead, the success of liquidation operations was based on the ability of the investigation to convert fragmented digital traces (pattern detection, Content-to-Location on Facebook / TikTok / Telegram) into verified physical coordinates. This confirmed that OSINT / SNA has transformed from an auxiliary analytical tool to a basis for conducting power operations. Thus, V. Akhgar *et al.* (2016) highlighted the role of open source intelligence (OSINT) as a tool for law enforcement agencies to obtain timely information. The researchers testified that OSINT provided access to a wide range of data, from social media information and geolocation data to intelligence from the Dark Web. M. de P. da S. Moraes (2016) confirmed that in the information age, social media has opened up a wide scope for cybercriminals to take advantage of the anonymity of fake profiles, which correlated with the "cyber slavery" pattern found in the current study. In contrast, the researcher stressed the need to integrate Open Source Intelligence tools and principles of psychology, in particular the concept of lateral thinking, to improve the effectiveness of research.

The use of OSINT in virtual social networks opens up new opportunities for generating knowledge and collecting evidence suitable for submission to the court, which was supposed to be a new strategy for detecting cybercrime, using social networks as a key tool. J. Salonen & A. Guarino (2024) stressed that crimes related to cultural values have become transnational in nature and pose a threat to national security, serving as a source of funding for organised networks. The researchers proposed an intelligence methodology based on SNA techniques, which involved creating a hybrid multiplex graph of a social network by combining data from open and classified domains. The use

of SNA and the presented methods of source correlation and link generation helped to effectively identify transnational criminal networks, which was fully consistent with the integration of OSINT / SNA into the M-SNOS model in the current study. Ph. Rosenkranz & W. Honekamp (2022) confirmed that the use of special methods for collecting open data (OSINT) from social networks helped to provide law enforcement agencies with information that was normally only available through measures that required significant interference with fundamental rights. The researchers focused on obtaining open data to determine movement profiles and demonstrated that OSINT from social media was suitable for this purpose, with Instagram and Snapchat showing the greatest potential. These results confirmed the feasibility of using OSINT for geolocation of physical centres of criminal hubs, as was implemented in the analysed cases of the current study.

X. Yuan *et al.* (2021) successfully demonstrated the use of geolocation data from social networks (X) to achieve situational awareness of drug cartel activities. Through temporal and spatial analysis of clusters of named entities, the researchers were able to track important events and identify thematic hot spots in public discussions. This study confirmed the effectiveness of the OSINT methodology for monitoring transnational crime and its ability to convert digital traces into spatial information, despite problems of language ambiguity, which was fully consistent with the results of the current OSINT effectiveness study. N. Soni & R. Poonia (2025) substantiated the need to improve traditional digital forensics by integrating it with artificial intelligence and OSINT, offering a proactive approach to cybercrime investigation that transcends the reactive nature of conventional methods. They showed that OSINT's AI-driven tools made it possible to collect, process, and analyse huge amounts of publicly available data (from the Dark Web, forums) with unprecedented speed and accuracy. This study directly correlates with the hybrid nature of the threats identified in the current study, emphasising that AI technologies were essential for identifying patterns and preventing cyberattacks before they reach a significant scale.

Thus, the synthesis of the results of the current study with the presented studies confirmed the transformation of regional crime into a model of "cyber slavery". This structural change, reinforced by the anonymity of the digital environment and the cross-border nature of crimes, has rendered traditional, reactive law enforcement methods ineffective. The results of the study confirmed the transformation of OSINT / SNA into the basis of the Intelligence-Led Policing strategy. These models provide the conversion of fragmented digital traces into physical coordinates necessary for conducting operations to eliminate criminal cells. Therefore, countering organised crime requires not only the integration of AI for proactive pattern detection, but also addressing systemic challenges of interagency coordination and ensuring the admissibility of OSINT evidence in court, which was a necessary prerequisite for transitioning to a new standard of hybrid countermeasures.

Conclusions

An analysis of the use of social media by organised criminal groups in the Philippines has shown that the digital landscape has become a global hub for industrialised cybercrime. It was determined that OCGs use a two-tier operating model: public platforms (Facebook, TikTok) were used for mass algorithmic recruitment and creation of "fictitious digital legitimacy" (study-to-work schemes), while operational activities, financial transactions (USDT on TRON / TRC-20) and coordination migrate to encrypted ecosystems (Telegram). The dynamics of OCG was characterised by structural professionalisation and technological asymmetry (involving Data Science, Deepfakes), which led to the emergence of a hybrid threat – cyber slavery, where victims of exploitation were instrumentalised as perpetrators of cyber fraud. The effectiveness of countering transnational syndicates was ensured solely by the transition to an ILP strategy based on the M-SNOS methodology, which allows converting digital traces into exact physical coordinates of criminal centres even before the stage of mass victimisation.

The rationale for integrating SNA and OSINT methods confirmed that the effectiveness of countering transnational syndicates was ensured solely by the transition to the Intelligence-Led Policing strategy. Case analysis proved that social networks were a source of intelligence information: OSINT analysis allows converting digital traces (scam scripts, video broadcast metadata, etc.) into verified physical coordinates of criminal centres, which was unattainable for traditional methods. The key conclusion of the integration of OSINT and SNA was that law enforcement agencies can move from tactics of mass, ineffective, arrests (targeted at performers) to point-by-point neutralisation of key network nodes. The development of practical recommendations showed that the imperative of institutionalising the M-SNOS methodology in the Philippines requires a two-vector approach: the creation of a Joint Digital Intelligence Fusion Centre to ensure interagency coordination and centralised OSINT/SNA analysis; the development and implementation of strict internal operational security protocols to minimise the risks of compromising investigators and ensure the judicial suitability of collected digital evidence. This was necessary to overcome the main challenge – ensuring the judicial suitability of the collected OSINT evidence in the context of Philippine laws (Data Privacy Act, Supreme Court of the Republic Philippines), and to scale preventive counteraction through operational G2B partnerships with technology giants. Further research should focus on developing algorithms for deanonymising cryptoassets (USDT on TRON / TRC-20) and creating models that can predict the migration of recruitment networks to new encrypted ecosystems.

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Author Contributions

R. Jurka designed and carried out a full research cycle – from setting objectives and developing a methodology, to collecting and processing data, conducting empirical analysis and verifying results, through to formulating practical recommendations and writing a research paper. The author developed and implemented an integrated M-SNOS methodology, combining OSINT and SNA, and tested its effectiveness on specific case studies in the Philippines.

Conflict of Interest

None.

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Social media and public perception of crime in Kazakhstan and Southeast Asia

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Abstract. The aim of the study was to analyse the mechanisms and consequences of social media influence on public perceptions of crime. The research design was based on a comparative case study methodology. Through content analysis and document review, triangulation of three types of data (official statistics, legal and regulatory acts, and high-profile case events) was conducted for three countries: Kazakhstan, Malaysia, and Singapore. The analysis covered the period from 2019 to 2025. The results of the study identified three distinct models of state strategy. In Kazakhstan, a model of "reactive transparency" was identified, in which social media became an instrument of public oversight; public pressure, amplified by online broadcasting of high-profile court proceedings, led to the adoption of laws combating domestic violence and a paradoxical increase in public trust in the judiciary from 55.2% to 62.0% between 2023 and 2024. In contrast, Singapore's "proactive control" model employs a comprehensive legal architecture, including the Protection from Online Falsehoods and Manipulation Act, to actively manage the information narrative, ensuring a consistently high sense of safety among 97% of the population, while restricting public discourse. Malaysia's "punitive uncertainty" model, grounded in broadly interpreted legislation, demonstrated a paradox whereby 65% of citizens expressed trust in police operational performance, yet 50% simultaneously regarded the inefficiency of law enforcement as one of the main causes of crime. The findings indicate that the state's chosen strategy for regulating the online environment is a more significant factor in shaping public trust than official crime statistics. Based on the analysis, recommendations were proposed for transitioning towards proactive transparency, countering disinformation, and investing in digital literacy. The practical significance lies in the fact that the study's conclusions may be used by law enforcement agencies in developing effective communication strategies. The proposed recommendations on proactive transparency and disinformation countermeasures are aimed at strengthening public trust within the digital environment

Keywords: compelled speech; legitimacy of authority; online environment; state regulation; internet users

Introduction

The relevance of this study arises from the fact that citizens' perceptions of the effectiveness of law enforcement agencies and crime rates are increasingly shaped not by official data, but by narratives circulating within the online sphere. In the modern world, social media has become a dominant instrument in shaping public opinion, exerting a decisive influence on socio-political processes and the international image of states. This influence is particularly evident in countries undergoing rapid digital transformation, including Kazakhstan. This process directly affects national security and the international reputation of the country – a strategic resource that determines investment attractiveness and competitiveness on the global stage. Uncontrolled dissemination of information in the digital environment generates challenges related to disinformation, manipulation of public opinion, and the spread of destructive ideologies. The algorithmic mechanisms of social networks, which create "information bubbles", only amplify this effect, making consensus more difficult to achieve.

In conditions where trust in state institutions becomes a key factor of social stability, analysing the mechanisms that shape such trust in the digital environment acquires primary importance. The study by L.F. Chaparro *et al.* (2021) demonstrated the possibility of quantitatively assessing perceptions of safety through sentiment analysis of social media messages, thereby technologically confirming the link between online discourse and the real sense of threat among the population. Therefore, examining the interrelation between online discourse, the actual criminogenic situation, and state communication strategies was essential for understanding contemporary social dynamics. The scientific community has devoted significant attention to various aspects of social media influence in the context of Kazakhstan and Central Asia.

A number of researchers have focused on the destructive potential of online platforms. D. Sharipova & S. Beissembayev (2023) established a direct connection between the spread of online propaganda and youth radicalisation leading to violent extremism. In turn, A. Khamzin *et al.* (2022) highlighted the use of digital technologies by criminals for human trafficking recruitment. The problem was further exacerbated by the spread of false information: A.B. Akynbekova *et al.* (2024) found that news content on Facebook was the most susceptible to fake information. This vulnerability was particularly high among young people, whose online behaviour, according to A.U. Nussipova & G.K. Slanbekova (2024), was characterised by a lack of cyber threat awareness. The importance of addressing these threats was emphasised by G. Sultanbayeva *et al.* (2024), who considered digital literacy a key tool for identifying fake news. A study by M.S. Al-Zaman (2021) in India also demonstrated that fake news on crime and politics were among the most widespread, underlining the universality of this issue. In addition to disinformation, hate speech emerged as another threat. As shown by O. Ștefăniță & D.M. Buf (2021), it exerts a negative psychological impact on vulnerable groups, while legal frameworks to counter it – as in the United Kingdom – are continually being adapted to new digital realities.

Meanwhile, other researchers examined more complex effects of social media influence. G. Ibrayeva & A. Nurshaikhova (2024) demonstrated that the emotional dynamics of online discussions in Kazakhstan could intensify distrust toward the judiciary. The study by M. Näsi *et al.* (2021) in Finland revealed that consuming crime news through traditional media was more strongly associated with fear of violence than exposure through social media. This provides important context for comparison with the Kazakhstani situation, where the interactivity and emotional contagion of social networks became the main catalysts for public reactions. Perceptions of risk and punishment, as noted by R. Apel (2022), are subjective and continuously updated through lived experience – including that transmitted via social networks – making this channel crucial in shaping perceptions of justice. This process is further complicated by citizens' willingness in non-democratic contexts, such as Kazakhstan, to partially accept new forms of surveillance, such as algorithmic policing, in exchange for increased efficiency – a phenomenon described as an "authoritarian bargain". This review of the academic literature has shown that, although individual aspects of the problem have been thoroughly studied, there remains a gap in comprehensive comparative analysis of state strategies for managing public perceptions of crime in the digital space. In particular, there is a lack of research systematically comparing the model emerging in Kazakhstan with those in technologically advanced Asian countries.

The objective of the study was to identify the mechanisms by which the image of crime is constructed within public consciousness under the influence of online platform content. To achieve this objective, the following tasks were set: to analyse the impact of social media on public perceptions of crime and the legitimacy of law enforcement institutions in the Republic of Kazakhstan; to conduct a comparative analysis of legal and communication strategies for managing online discourse in Kazakhstan, Singapore, and Malaysia; and, based on this comparative analysis, to develop recommendations for improving communication policy.

Materials and Methods

The study was based on a comparative multiple case study encompassing three countries: Kazakhstan, Singapore, and Malaysia. This design made it possible to examine each case separately and to conduct a systematic comparison to identify common patterns. The primary methods of data collection and analysis included document analysis (covering legislative and regulatory acts and reports), secondary analysis of official statistics and sociological surveys, as well as qualitative content analysis of media materials and official communications. The observation period spanned from January 2019 to September 2025, enabling the recording of key legislative changes and social processes in the

selected countries. The selection of Kazakhstan, Singapore, and Malaysia for comparative analysis was grounded in the logic of similar-systems design. All three are Asian states with comparable baseline parameters – high internet penetration rates and active social media engagement. At the same time, they demonstrate distinct models of political regime and, consequently, differing strategies of state regulation of the online sphere. This variation in the key studied parameter (state regulation), combined with similarity in baseline conditions (level of digitalisation), renders them relevant for comparative analysis of the impact of state policy on public perceptions of crime.

Official reports of national statistical bureaus and leading sociological agencies for 2023-2025 were included. The following indicators were analysed: levels of recorded crime by category (homicide, theft, internet fraud) (Prosecutor General's Office of Kazakhstan, n.d.), as well as levels of public trust in law enforcement and judicial institutions. Specifically, for Kazakhstan, two survey waves by the Bureau of National Statistics were used (April-May 2023 and October-November 2024): On public confidence… (2023), Public confidence in law… (2025), as well as Statistics of crime (n.d.), U.S. Department of State (n.d.) and Penal Code of the Republic of Kazakhstan No. 226-V (2014) for Malaysia – an Ipsos report (Loheswar, 2024), Act of Malaysia No. 854 (2024); and for Singapore – the Ministry of Home Affairs overview (Overview of Safety…, 2025). The analysis also incorporated current editions of key laws regulating the information environment and law enforcement activities in the three countries. Among them: for Kazakhstan – Law of Kazakhstan No. 401-V ZRK (2015) and Law of the Republic of Kazakhstan No. 72-VIII (2024); for Singapore – the Protection from Online Falsehoods and Manipulation Act (POFMA) (n.d.), Act of Singapore (2009), the Act of Singapore No. 28 (2021), and Broadcasting Act of the Republic of Singapore (1994); for Malaysia – the Act of Malaysia No. 588 (2006) and the Act of Malaysia No. 15 (2006). To establish the basic parameters of the digital environment, the Digital 2025 series reports for each country were analysed (Kemp, 2025a; 2025b; 2025c). These sources provided quantitative indicators of internet penetration, social media usage, and platform popularity. For an in-depth analysis, key events and documents illustrating state-society interaction were selected. The inclusion criterion was high public resonance and documented impact on legal or communication policy. The corpus included: online broadcasts of court hearings in the Bishimbayev case (04/10/2024. Part 1. Online broadcast…, 2024; Serikpaev, 2024); official press releases by the Singapore Government concerning the application of the POFMA (Issuance of POFMA…, 2024); and reports of international human rights organisations – Amnesty International (Singapore 2024, n.d.) and Human Rights Watch (Malaysia Events of 2024, 2024) – addressing freedom of expression in Singapore and Malaysia.

Data analysis was conducted in two stages. In the first stage, each country was examined as a separate case. Through qualitative content analysis, legislative acts and media materials were studied to reconstruct the national model of interaction between the state, society, and the online sphere. Coding was performed according to the following categories: type of state strategy (proactive/reactive), key regulatory instruments, mechanisms of influence on discourse (censorship, public pressure, "deterrent effect"), and dominant narratives. At the second stage, the three identified models were compared using a unified matrix of criteria, which made it possible to reveal their shared and distinctive features. This two-step analytical strategy enabled not only a description of each national model but also an explanation of the reasons for differences in the dynamics of public trust and the nature of public discourse. Data systematisation was carried out using Microsoft Excel spreadsheet software.

Results

Kazakhstan: The impact of court hearings broadcasts on the legitimacy of the law enforcement system

The relationship between digital media and public perceptions of crime is a complex phenomenon determined not only by the degree of technological penetration but also by each state's unique socio-legal context. In 2025, Kazakhstan's information environment was characterised by deep digital integration. Statistical data showed that 92.9% of the population were active internet users, and 75.7% used social networks (Kemp, 2025a). Official crime statistics revealed a paradox: against the backdrop of an overall decline in traditional crimes such as theft (-27.6%) and homicide (-18.8%), there was a sharp rise in internet fraud by 24.7% (Prosecutor General's Office of Kazakhstan, n.d.). This imbalance created favourable conditions for the formation of negative perceptions of safety. Scholarly discussion of these data has demonstrated that citizens' trust in government under such conditions may diverge from the actual indicators of its effectiveness (Koh & Baek, 2023). At the same time, official surveys indicated a high level of trust in the police (64.4%) and the prosecution service (65.2%) (Statistics of crime, n.d.). This paradox was explained by the fact that the baseline level of trust proved vulnerable during high-profile events, where the quality of state communication became decisive (Burkitbayeva, 2024). The legislative framework – in particular, the Law of Kazakhstan No. 401-V ZRK (2015) – formally enshrined the principles of openness. However, there was a clear gap between the statutory provisions requiring proactive information dissemination and the actual communication practices of law enforcement bodies, which often remained reactive. This gap was partly attributable to the complexity and specificity of the challenges faced by law enforcement structures. According to the report of the U.S. Department of State (n.d.), Kazakhstan functioned as a key transit country for Afghan-origin narcotics and was increasingly becoming both a destination and transit point for synthetic drugs. Law enforcement agencies were engaged in an ongoing struggle against transnational threats, while criminal

networks employed increasingly sophisticated methods for moving drugs, money, and people across the country's territory. Such an operational context required complex, often lengthy and non-public investigations. The need to maintain investigative secrecy for the effective counteraction of organised crime conflicted with the public demand for immediate and full transparency, actively amplified through social media. Thus, the reactive nature of communication was not only a manifestation of institutional culture but also a strategic necessity, creating tension between operational security and civil society's expectations of openness. This discrepancy was actively exploited in online discussions to criticise state institutions, turning social media into an instrument of informal civic oversight. This trend corresponds to global processes in which online platforms serve as arenas for the discussion of socially significant issues, including hate crimes, as documented in the United Kingdom by N. Ahmad *et al.* (2023).

This process was reflected in the public discussion of court broadcasts, which not only enhanced legal awareness but also stimulated legislative changes (Ibrayeva *et al.*, 2025). A case in point is the case of Kuandyk Bishimbayev (Sydorzhevskyi, 2024), a former Minister of National Economy, accused of murdering his wife under two articles of the Penal Code of the Republic of Kazakhstan No. 226-V (2014). The first was Article 110, Part 2, Clause 1 of the CC RK (Criminal Code of the Republic of Kazakhstan) – torture; this charge pertained to the systematic infliction of physical and mental suffering upon Saltanat Nukenova (Kuandyk Bishimbayev's wife). The second was Article 99, Part 2, Clause 5 of the CC RK – murder committed with particular cruelty; this was the principal charge, indicting him for the intentional deprivation of life manifesting exceptional ruthlessness towards the victim. Given the significant public resonance, the press service of the Supreme Court announced the decision to provide an online broadcast of the open court hearings in this case (Serikpaev, 2024). The live stream of this trial on the official channel of the Supreme Court of the Republic of Kazakhstan "Qazaqstan Respublikasynyń Joǵary Soty" (04/10/2024. Part 1. Online broadcast…, 2024) sparked active public discussion on social media. Millions of citizens followed the hearings in real-time, transforming the judicial proceedings into an instrument of legal education. The high emotional engagement of the audience and active online discussions created significant public pressure on the authorities. Public oversight, enabled by digital technologies, prevented this case from being overlooked and amplified the societal demand for zero tolerance towards any forms of domestic violence. It was this community-driven pressure that acted as a catalyst for specific legislative initiatives. The result was the strengthening of criminal liability for domestic violence, demonstrating a direct link between digital transparency, public mobilisation, and legislative reform in the sphere of protecting the rights of women and children. A specific legislative initiative arising from the public resonance surrounding the Bishimbayev case was the adoption of the Law of the Republic of Kazakhstan No. 72-VIII (2024), which was signed by the President of Kazakhstan in April 2024. Analysis of official data on public trust before and after the period of high-profile broadcasts revealed a notable positive dynamic. A comparison of survey results from April-May 2023 (prior to the broadcasts) and October-November 2024 (during the Bishimbayev case) demonstrated an increase in trust towards key legal institutions. Specifically, the level of complete trust in the judicial system rose from 55.2% in 2023 to 62.0% in 2024. A similar increase was recorded for other law enforcement agencies: trust in the police increased from 57.5% to 64.3% and in the prosecutor's office – from 57.1% to 66.1% (On public confidence…, 2023; Public confidence in law…, 2025). These statistical trends suggest that a policy of radical transparency, despite subjecting the justice system to intense public scrutiny (during the period of social media discussion), ultimately had a positive impact on its legitimacy (Gritsenko *et al.*, 2025). The open broadcasts helped dispel entrenched perceptions of judicial opacity and corruption, thereby strengthening public trust in the institution. A systematic analysis of the challenges faced by the state and its responses to them is presented in Table 1.

Table 1. Analysis of challenges and state responses in the sphere of law and order in Kazakhstan (2024-2025)

Sphere of Challenge	Manifestation	Documented State Response	Outcome
Traditional Crime	Decline in rates of theft (-27.6%), homicide (-18.8%), and other physical crimes.	Standard law enforcement activities.	Positive trend in official statistics.
Cybercrime	Sharp increase in online fraud (+24,7%).	Training of personnel for investigating online crimes.	Recognition of the threat as a priority.
Transnational Crime	Status as a key transit country for narcotics.	Enhanced border control, international cooperation.	Increased operational capacity.
Public Resonance (The Bishimbayev Case)	Mass public engagement in discussing the case on social media.	Adoption of a decision to live-stream court proceedings.	Increased legal literacy, formation of public pressure.
Pressure for Legal Reforms	Public demand to criminalise domestic violence.	Adoption of the "Saltanat Law".	Specific legislative amendments, enhanced accountability.
Public Trust	Paradox between baseline trust and its decline during crises; criticism of reactive communications.	Forced transparency (live-streaming).	Increased trust in the judicial system (+6.8 p.p.) and police (+6.8 p.p.) following the period of live-streaming.

Source: compiled by the author based on an analysis of data from the Prosecutor General's Office of Kazakhstan (n.d.), U.S. Department of State (n.d.), On public confidence… (2023), Public confidence in law… (2025), G. Ibrayeva *et al.* (2025)

Thus, the case of Kazakhstan illustrated a unique model where societal digitalisation acted as a catalyst for informal public oversight. The enforced transparency, demonstrated through online broadcasts of high-profile trials, created unprecedented pressure on the legal system. This process, while revealing shortcomings and provoking criticism, ultimately led to strengthened trust in state institutions. Society, having gained access to the mechanisms of justice, was able not only to observe but also to influence, which materialised in concrete legislative reforms and a measurable increase in the legitimacy of law enforcement agencies and courts.

Singapore: State control over the informational narrative

Singapore represents a model where the state assumes a proactive and dominant position in managing the information space to maintain a high level of public trust. This strategy functions in conditions of total societal digitalisation. As of early 2025, Singapore had one of the highest internet penetration rates in the world, covering 95.8% of the population, or 5.61 million people (Kemp, 2025c). The social media usage rate was also high at 88.2% of the total population, equivalent to 5.16 million users. The hyper-connectivity of society was underscored by the fact that the number of active mobile connections reached 10.5 million, constituting 179% of the total population. In this environment, where YouTube (5.16 million users), Facebook (3.70 million), and TikTok (3.63 million adult users) serve as key arenas for public discourse, the state has developed a control mechanism (Kemp, 2025c). However, this stability in the management position existed against a backdrop of serious challenges arising precisely within the digital environment. While the number of physical crimes, such as theft and robbery, remained stable or even decreased, online scams continued to be a key problem, with the number of reported cases and the amounts of losses growing (Overview of Safety…, 2025).

Furthermore, the authorities expressed concern over the deteriorating regional drug situation, emphasising that drug traffickers are actively using social networks and messengers to spread misinformation about drugs and facilitate their sale. Of particular concern to the authorities was the increasing number of new drug abusers among youth, partly associated with the proliferation of permissive attitudes towards drugs on social media (Overview of Safety…, 2025). In response to these threats, the state developed a comprehensive strategy combining stringent legislation and proactive communication. A key instrument of state policy in this sphere has been the Protection from Online Falsehoods and Manipulation Act (n.d.), enacted in 2019. This act embodies a unique regulatory philosophy: instead of direct censorship, it primarily employs a mechanism of "compelled expression", obliging platforms to place government corrections alongside content deemed false. This allows the state not merely to remove information but to intervene in the discourse with its own "authoritative" version, representing a technocratic solution aimed at the "informational immunisation" of the population against disinformation, particularly in the context of the rapid growth of online scams, which have become the principal criminal threat in the country. A practical example of this mechanism's application is the case in December 2024, when the Ministry of Home Affairs issued a Correction Direction to the news portal "The Online Citizen" (Issuance of POFMA…, 2024). The portal had published an article and social media posts claiming that the Singapore government uses POFMA to suppress dissent regarding the death penalty, which the authorities deemed false. However, instead of demanding the removal of the publication, the Direction required "The Online Citizen" to place a correction notice alongside each of its publications, with a link to the official government clarification. The official press release emphasised that this approach does not restrict dissent but merely allows readers to access the government's position alongside the initial statement so they can "make their own conclusions" (Issuance of POFMA…, 2024). This case clearly demonstrates how POFMA is used for the "informational immunisation" of the population, actively countering narratives the authorities consider harmful, especially in the context of the rapid growth of online scams, which have become the primary criminal threat in the country. It should be noted that POFMA is not an isolated instrument but part of a broader, multi-layered system of legal regulation of the online space. This strategy is complemented by other powerful legislative acts, such as the Broadcasting Act of the Republic of Singapore (1994), which, through a licensing system, extends its control to online news resources, requiring them to adhere to content standards. Furthermore, the Act of Singapore No. 28 (2021) was passed, granting the government powers to block content and expose information campaigns deemed to be hostile foreign operations. Together, these laws create a comprehensive control architecture, enabling the authorities to respond swiftly to a wide spectrum of threats, from disinformation and scams to foreign influence, ensuring the dominance of the official narrative in the digital environment.

However, according to Amnesty International's 2024 report (Singapore 2024, n.d.), the Government of Singapore actively utilised legislation to restrict the activities of civil society activists, particularly those opposing the death penalty. Throughout the year, multiple correction directions were issued under the POFMA Act (Issuance of POFMA…, 2024) against the Transformative Justice Collective (TJC) (n.d.), an activist group, for their statements concerning capital punishment. In October, a photo exhibition organised by TJC to mark the World Day Against the Death Penalty was banned on the grounds that it "undermined national interests" (Singapore 2024, n.d.). In December, the government went further by designating the TJC website and social media accounts as "declared online locations". This compelled the organisation to display a notice on its platforms stating that they had "communicated multiple falsehoods" and prohibited them from receiving online financial contributions. One of TJC's members, activist

Annamalai Kokila Parvathi, also received individual correction directions under POFMA and became the subject of an investigation after becoming the first person in Singapore to refuse compliance with a correction order (Singapore 2024, n.d.). As of 2025, the organisation's website displays the following official notice: "Multiple falsehoods have been communicated on this website. Viewers should exercise caution when accessing this website for information. This website is a declared online location in Singapore under Section 32 of the Protection from Online Falsehoods and Manipulation Act (n.d.). For more details, please visit the link below. Providing financial support to support, help or promote the communication of false statements of fact in Singapore on a declared online location is prohibited under Section 38 of POFMA" (Transformative Justice Collective, n.d.). This statement confirms that governmental requirements were duly fulfilled. At the same time, executions for drug-related offences continued, raising, according to the report, serious concerns about the fairness of judicial proceedings, as several of those executed still had pending appeals (Singapore 2024, n.d.). Moreover, the authorities invoked the Act of Singapore (2009), which requires permits for all public assemblies, to initiate investigations into activists protesting against arms sales to Israel or expressing concern about the conflict in Gaza. Collectively, these cases, documented by Amnesty International (Singapore 2024, n.d.), indicate that Singapore's legislative framework is utilised not only to counter disinformation but also to systematically restrict freedom of expression and suppress dissenting activity, thereby enabling the government to maintain a dominant official narrative in the digital environment.

To summarise, Singapore's model exemplifies an active and comprehensive form of state intervention in the digital sphere. In the context of digitalisation and the migration of criminal threats into the online domain, the authorities employ a multilayered legal architecture through the POFMA (Protection from Online Falsehoods and Manipulation Act, n.d.). This system serves a dual purpose: on one hand, it is officially aimed at protecting citizens from disinformation, fraud, and foreign interference; on the other, as documented by human rights organisations, these very instruments are systematically deployed to suppress dissent, limit criticism of the government, and neutralise civil society activism (Singapore 2024, n.d.). The result is a carefully managed informational narrative that fosters public trust in state institutions, yet achieves this at the expense of considerable restrictions on civil liberties and open public discourse.

Malaysia: Legal uncertainty and the chilling effect

Malaysia demonstrated a third model characterised by high digital engagement among the population amid extensive and ambiguous legislative regulation. As of early 2025, the country had nearly universal internet penetration, covering 97.7% of the population, or 34.9 million individuals (Kemp, 2025b). The number of social media users reached 25.1 million, equivalent to 70.2% of the total population, with YouTube, Facebook, and TikTok being the dominant platforms. Against this backdrop, sociological survey data from 2024 presented, at first glance, a positive picture of public opinion. According to the Ipsos Malaysia Crime Monitor (Loheswar, 2024), Malaysian society exhibited growing trust in law enforcement authorities. Sixty-six per cent of respondents believed that the police treated all citizens with equal respect, while 65% expressed confidence in the police's ability to prevent and solve crimes. Moreover, 31% stated that crime rates in their local areas had decreased over the past year, indicating an increasing sense of security. However, a deeper analysis of the same survey revealed a fundamental contradiction in public perception. When asked about the causes of crime, 50% of respondents cited ineffective law enforcement, while 39% pointed to a corrupt political environment (Loheswar, 2024). These figures significantly exceeded global averages and highlighted deep-seated mistrust in the institutional integrity of law enforcement and political systems. This paradox – where high confidence in police operational capacity coexists with perceptions of systemic inefficiency – can be explained through the context of legal regulation.

Like other countries in the region, Malaysia has faced a transformation in the structure of criminality, with cybercrime emerging as the leading category. Yet, according to a Human Rights Watch report, in 2024 the government not only refrained from relaxing but instead expanded the scope of repressive legislation governing the online sphere (Malaysia Events of 2024, 2024). The principal regulatory instrument for online discourse in Malaysia is the Act of Malaysia No. 588 (2006), particularly Section 233, alongside the Act of Malaysia No. 15 (2006). According to the report (Malaysia Events of 2024, 2024), throughout 2024 the authorities routinely employed these laws – both characterised by broad and vague provisions – to criminalise freedom of expression.

The practical application of these laws is illustrated by specific cases: in April, political activist Badrul Hisham Shaharin was charged with sedition for a Facebook post alleging the Prime Minister's involvement in granting a casino licence. In May, blogger Wan Muhammad Azri Wan Deris was charged under the same provision for a post on the X platform. Even former Prime Minister Muhyiddin Yassin was accused of sedition for questioning the previous king's use of constitutional power (Malaysia Events of 2024, 2024). Furthermore, the new Act of Malaysia No. 854 (2024), which came into force in August 2024, further broadened governmental powers over online expression.

An examination of this legal framework reveals that, unlike Singapore's POFMA (Protection from Online Falsehoods and Manipulation Act, n.d.), Malaysia's Communications and Multimedia Act (Act of Malaysia No. 588, 2006) allows prosecution for a much broader range of statements. The application of Section 233 POFMA is often asymmetric and disproportionately targets civil activists and journalists, thereby undermining trust in the impartiality of the legal system itself. This results in a so-called chilling

effect, impeding objective assessment of public sentiment, as discussions – particularly those concerning corruption or misconduct within law enforcement – are pushed into closed or private groups. The report also documents the case of activist Mukmin Nantang, who exposed the forced evictions of the indigenous Bajau Laut community and subsequently became the subject of a police investigation for sedition (Malaysia Events of 2024, 2024). Thus, in Malaysia, perceptions of criminality are shaped within a context of legal uncertainty, where fear of prosecution for public expression can suppress open dialogue. This creates a situation in which visible online discourse does not necessarily reflect actual societal sentiment, potentially leading to the accumulation of latent discontent and scepticism regarding the efficiency and fairness of the law enforcement system.

Comparative analysis and recommendations on communication policy

The conducted analysis of models of interaction between the state and society in the digital space of Kazakhstan, Singapore, and Malaysia reveals three distinct strategies for managing public perception of crime (Table 2), which allows for formulating recommendations to improve the communication policy of law enforcement agencies.

Table 2. Comparative analysis of models for managing public perception of crime

Parameter	Kazakhstan	Singapore	Malaysia
Core State Strategy	Reactive transparency: responding to public pressure, resulting in forced openness.	Proactive control: pre-emptive and centralised intervention to shape the official narrative.	Punitive ambiguity: employing laws with broad interpretation to deter criticism.
Key Legislative Instrument	Law "About Access to Information" as a basis for public demands.	POFMA, Act of Singapore No. 28.	Act of Malaysia No. 588, Sedition Act.
Primary Mechanism of Influence	Public resonance and pressure, amplified by live-streaming of court proceedings.	Correction Directions and other legal restrictions for content control.	Chilling effect arising from the risk of prosecution for online expression.
Public Trust Dynamics	Increasing: trust grew significantly after a period of radical transparency.	Managed and stable: a high level of trust is maintained through active state control.	Paradoxical and fragmented: high trust indicators coexist with criticism of systemic corruption.
Implications for Public Discourse	Activation and mobilisation of society, increased legal literacy.	Meticulously managed and restricted discourse, dominance of the official position.	Suppression of open dialogue, displacement of critical discussions to closed channels.

Source: compiled by the author based on this research

The comparison of these approaches demonstrated different regulatory philosophies. Thus, the Kazakhstani model of "reactive transparency" is characterised by the state responding to public pressure, amplified by social networks, which ultimately leads to increased public legitimacy through forced openness. In contrast, the Singaporean strategy of "proactive control" is pre-emptive and interventionist, whereby, through an elaborate legal architecture, the state actively shapes the information field to ensure a consistently high level of trust, albeit at the expense of the breadth of public dialogue. The Malaysian approach, in turn, can be characterised as a model of "punitive uncertainty", which relies on laws with ambiguous wording that create a "chilling effect" and suppress open criticism, potentially undermining long-term trust in the legal system. Based on this comparative analysis, a number of recommendations for the law enforcement agencies of Kazakhstan can be developed. Firstly, it is recommended to transition from reactive to proactive transparency by institutionalising the practice of openness through regular and prompt public informing on social networks, which will allow for occupying a dominant position in the information field. Secondly, it is necessary to develop a strategy for refuting misinformation, based on publishing official, detailed, and substantiated facts on the very platforms where false information is disseminated, with the aim of becoming the most reliable source of information, rather than merely a censor. Finally, it is important to invest in the population's digital legal literacy through the creation of educational online projects that explain citizens' rights and police procedures, which will contribute to a more objective perception of the law enforcement system's activities. The implementation of these recommendations will transform the forced transparency that arose situationally into a consistent state policy aimed at building long-term trust through dialogue, openness, and education.

Discussion

The identification of three distinct models of state strategy regarding the management of public perception of crime – "reactive transparency" in Kazakhstan, "proactive control" in Singapore, and "punitive uncertainty" in Malaysia – is the central finding of the presented work. These findings are significant because they demonstrate that in the era of total digitalisation, there is no universal approach to solving the problem of forming and maintaining trust in law enforcement institutions. The strategy chosen by the state has profound and long-term consequences for the nature of public discourse, the level of civil liberty, and the legitimacy of the authority itself. The subsequent discussion aims to interpret these three models within the context of broader international research concerning information

confrontation, the framing of public opinion, and the legal regulation of online space. The identified models confirm that information management has transformed into a key element of state policy. This thesis finds confirmation in the work of G. Markabaeva *et al.* (2021), where it was established that a country's image, increasingly shaped by social factors and their reflection in the media, is an important strategic resource influencing the economy and international relations. In the digital environment, where news about crime and justice spreads instantly, public perception of internal security becomes one of the key elements of this image. A persistent perception of a high level of crime or an unfair judicial system can directly impact the decisions of foreign investors and tourist flows, turning the management of online narratives into a matter of economic and political expediency. In this context, the aggressive and pre-emptive strategies of Singapore and Malaysia can be viewed as an attempt to protect this resource under conditions that L. Chen *et al.* (2022) characterised as information warfare. The research of these authors classifies the instruments used in such warfare, including bots, trolls, and manipulation, which are aimed at undermining trust and causing destabilisation. It is important to note that this "cyber weaponry" can be used not only by foreign states but also by domestic political opponents, criminal groups, or simply individual citizens, creating an asymmetric and difficult-to-predict threat landscape. Thus, the stringent legislation applied in Singapore and Malaysia can be interpreted as a defence mechanism aimed at creating a "digital wall" to protect the official narrative from external and internal information attacks.

Analysing the identified models through the lens of framing theory, developed by J. Mendelsohn *et al.* (2021), allows for a deeper understanding of their mechanisms of action. According to this theory, the way information is presented (the frame) determines its interpretation by the audience. The Singaporean model represents an example of rigid state control over frames, where the authorities, using the POFMA law, do not merely remove undesirable information but actively impose their own, "authoritative" frame for interpreting events, marginalising alternative viewpoints. This is a purposeful policy of narrative management. The Malaysian model, in turn, is aimed at suppressing undesirable frames through the use of laws with broad interpretation, which forces opponents to refrain from criticism. In contrast, the situation in Kazakhstan during the Bishimbayev case demonstrated the phenomenon of successful public reframing, where the narrative formed by society on social networks (the issue of systemic domestic violence) proved stronger than the initial, more restrained position of the state. This process fully corresponds to the model of social activism proposed by W. Tao *et al.* (2024), where the chain of "perception of injustice – motivation – overcoming stress – activism" explains how public outrage transformed into concrete political pressure and legislative changes. Emotional engagement, which J. Mendelsohn *et al.* (2021) identified as a key factor for the dissemination of frames related to human interests, in this case became the driving force. The case concerned not abstract political issues but the tragedy of a specific individual, which allowed for mobilising broad segments of the population. Social networks provided a platform for the collective experience of grief and anger, which became a powerful unifying factor and transformed individual emotions into collective political action.

The legislative approaches identified in Singapore and Malaysia illustrate the global dilemma between ensuring information security and protecting freedom of speech. As noted by D. Vese (2021) in an analysis of European practices, the fight against fake news often leads to the adoption of repressive laws that have a "chilling effect" on freedom of expression. The results of the analysis regarding Malaysia fully confirm this thesis, showing how the vagueness of legal norms leads to self-censorship. The Singaporean model, although more sophisticated, also raises similar concerns. The legitimate basis for such stringent state measures is often cited as the need to combat real threats, such as online hate, defined by S.A. Castaño-Pulgarín *et al.* (2021) as the systematic use of aggressive language against certain groups. However, as the analysis has shown, in practice, these laws are often used to suppress political criticism. This instrumentalisation of legislation creates a legitimacy deficit: when citizens see laws applied selectively, it undermines trust not only in the specific law but in the rule of law as a whole. The psychological impact of the "chilling effect" extends beyond the mere fear of persecution; it creates an atmosphere of social suspicion, where citizens begin to avoid any critical discussions, even in private conversations, fearing reports or misinterpretation. This atomises society and hinders the formation of a healthy public sphere where collective problems can be discussed and resolved. Thus, a vicious circle arises: the state, sensing a lack of trust, intensifies control, but this very intensification of control further erodes trust, creating the very instability that the authorities sought to prevent.

An additional aspect to the discussion is added by the research of R. Svensson & D. Oberwittler (2021), which found that the decrease in youth crime rates in Sweden is partly linked to a change in routine activities, namely – an increase in time spent online instead of unsupervised time spent on the streets. This finding creates a complex situation. The results of this study showed that in all three countries, a decrease in traditional types of crime is observed against the backdrop of rising cybercrime. It can be assumed that digitalisation, while creating new threats such as online fraud and disinformation, may simultaneously contribute to a reduction in "street" crime through changes in social practices. This global transformation of crime, as shown by the example of Nigeria by D.O. Okocha (2022), requires states to adopt not only repressive but also educational measures to improve the population's cyber hygiene. This confirms the conclusions of D. Caled & M.J. Silva (2022), who emphasise the necessity of interdisciplinary strategies to combat disinformation, combining governmental,

educational, and technological approaches. The changing nature of risks also affects their perception. As noted by R. Apel (2022), people's perceptions of risks and punishments are constantly updated based on experience transmitted through social networks. The rare, but physically dangerous, risk of street robbery is replaced by a constant, albeit less violent, risk of falling victim to online fraud. This new reality creates a diffuse sense of anxiety, which is difficult for law enforcement agencies to combat using traditional methods, as their work in cyberspace is less visible to the public. This widens the gap between official statistics showing a safer physical world and the subjective feeling of vulnerability among citizens in their daily digital lives.

Conclusions

This study has established that in the context of deep societal digitalisation, public perception of crime and trust in law enforcement institutions is determined not so much by official criminal statistics as by the state's chosen strategy for managing the information space. The analysis of practices in Kazakhstan, Singapore, and Malaysia has allowed for the identification and qualitative characterisation of three distinct models. The Kazakhstani model of "reactive transparency" demonstrated that forced openness, stimulated by public pressure through social networks, can paradoxically lead to a measurable increase in trust in the legal system – with quantitative indicators reaching up to +9.0 percentage points for certain institutions – and can stimulate progressive legislative reforms. In contrast, the Singaporean model of "proactive control" showed how, through an elaborate and stringent legal architecture, the state can effectively manage the public narrative, ensuring a consistently high level of trust and security; however, this is achieved at the expense of significantly limiting open dialogue and freedom of speech. The Malaysian model of "punitive uncertainty", which relies on laws with broad interpretation, creates a "chilling effect" that suppresses public criticism, but simultaneously forms a paradoxical public opinion and risks the accumulation of latent scepticism. The obtained results signify that the legitimacy of law enforcement agencies in the digital world depends on their ability to adapt communication strategies to societal expectations. The findings indicate that effective counteraction to disinformation requires a systemic approach based on transparent communication, public trust, and the development of citizens' critical thinking. On this basis, it is proposed to orient the activities of law enforcement agencies towards a consistent policy of openness and regular public informing, to enhance the level of digital literacy through educational initiatives, and to strengthen the role of official sources as the primary channel for reliable information.

It is important to note that this research has certain limitations. It was based on the analysis of three selected countries, which does not allow for the full extrapolation of the conclusions to the entire Southeast Asian region, characterised by significant political and cultural diversity. The analysis relied on publicly available reports, laws, and data, and did not cover the internal decision-making processes within state bodies, which remain non-transparent. Furthermore, the digital environment and public opinion are highly volatile; therefore, the results reflect the situation at a specific point in time and require constant updating. Consequently, the main directions for further research could include a quantitative longitudinal analysis of the long-term impact of transparency policy on the level of trust in Kazakhstan to verify the sustainability of the identified effect. A promising direction is the expansion of the comparative analysis to include democratic countries of the region and the conduction of qualitative research for a deeper understanding of public opinion under different levels of information control.

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Conflict of Interest

None.

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Criminal liability for illegal logging and transboundary timber trade in China and Indonesia (2010-2025)

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Abstract. This study aimed to define the peculiarities of criminal and legal countermeasures against illegal logging and timber trafficking in China and Indonesia. The methods of comparative law, normative-dogmatic and institutional legal were used in conjunction with analysis of the national legislations of China and Indonesia, international treaties and analytical reports, as well as satellite and statistical data of Global Forest Watch and materials of specialised institutions for 2010-2025. The article revealed that in 2010-2025, Indonesia had the maximum rates of forest losses in 2010-2016, which was 1.3-2.4 million ha per year, while the annual rate of forest loss in China was relatively stable (350-450 thousand ha per year in 2020-2024), which testifies to different scopes of pressure on forest resources. The legislation analysis revealed that China has developed a model of criminalisation of illegal logging (punishment of up to seven years of imprisonment and significant fines) and supporting centralised mechanisms of administrative regulation, while Indonesia has created a complex system to counteract organised logging networks (fines of up to ten billion Indonesian rupiahs) and quasi-criminal control through the Sistem Verifikasi Legalitas Kayu. The findings further indicate that international environmental and trade treaties served as normative regulators of the development of criminal and legal countermeasures against illegal logging and timber trafficking in China and Indonesia in 2010-2025. In China, the formally stipulated maximum penalties for illegal logging and timber trafficking are in fact not regularly applied to all forest crimes but are selectively reserved for particularly large and organised offences. A tendency has been identified towards reclassifying environmental crimes as customs or trade offences, which further reduces the potential deterrence of criminal law in China. Indonesia shows a greater congruence between the formal stipulations and judicial reality: When it comes to organised timber-extraction networks, sentence stacking is commonly applied, that is, prison sentences, the confiscation of assets and fines of up to 5-10 billion Indonesian rupiahs are imposed. The practical relevance of these results stems from their usefulness to criminal-justice and legislative stakeholders in improving forest crime countermeasures

Keywords: environmental security; economic stability; international obligations; environmental protection sector; sanctions

Introduction

Illegal forest practices and transboundary timber trade in China and Indonesia have assumed proportions posing an immediate threat to ecological security, economic security and international environmental law-making. While both countries have long been engaged with the international community in the fight against forest crimes, the utility of criminal law tools remains ambiguous. The difference between the provisions of international legal instruments and the realities of criminal law practice provides an opportunity for the continued proliferation of illegal forestry operations. The involvement of various parties along the chain of transboundary timber supply, the risks of corruption, and the non-standardised approach to sanctions for forest crimes across different jurisdictions contribute to this. The lack of criminal responsibility instruments complicates the criminal prosecution of organised criminal groups that implement illegal logging and the international timber trade.

In contemporary academic discourse, increasing attention is paid to the relationship between state forest policy and the environmental consequences of its implementation. For example, a study by X. Huang *et al.* (2024) established that the introduction of a ban on natural forest logging in north-eastern China led to a statistically significant increase in the value of ecosystem services. At the same time, the authors recorded that the positive environmental effects were not accompanied by an automatic reduction in illegal logging, indicating the limited effectiveness of purely administrative prohibitions. The findings indirectly point to the need to complement environmental policy with criminal law deterrence mechanisms; however, this aspect remains outside the scope of in-depth legal analysis in that study. Issues of transboundary timber trade in interaction with China were addressed in the research by G.P. Kombat & X. Chen (2022), which demonstrated that trade flows between China and exporting countries are shaped not only by market factors but also by regulatory asymmetries between legal systems. In particular, it was proved that lower regulation in countries of origin increases the risk of illegal timber export to China, which, in most cases, is the final destination for imported timber. However, the study did not investigate the influence of criminal and legal norms of the involved countries on this issue, which has not been discussed in terms of legal mechanisms for countering illegal trade.

Another study aimed at the development of a risk-based approach to detecting areas with a high risk of illegal logging was conducted by J.C. Lin *et al.* (2021), who revealed a strong positive association between the spatial patterns of hotspots of illegal timber harvesting and the directions of international trade. The authors inferred that the risk of illegal logging in the area is significantly higher when it is connected to global timber-supply chains. However, their results relate to risk factors and do not provide insights into how international legal instruments or criminal-law sanctions influence the actions of the subjects involved in the chain. The evaluation of the effectiveness of China's forest policy through the normative-act analysis was performed by G. Meng *et al.* (2025). The authors concluded that the rigidity of Chinese forest policy has increased and the number of detailed provisions has improved since the late 1990s. However, the implementation effect of the policy highly depends on the law enforcement capacity. At the same time, the authors did not explore the effect of China's international commitments on the development of criminal law approaches, and, therefore, the potential impact of global environmental regimes on domestic legislative changes is still to be explored.

The situation in Indonesia regarding the criminal liability for forest offences is discussed by A.M. Rohmy *et al.* (2021), who point out that the number of subjects of criminal liability increased after the promulgation of the Law of Indonesia No. 11 (2020). The authors emphasised that corporate sanctions in the sphere of forest destruction have become an important instrument of legal influence; however, their effectiveness is constrained by inconsistencies in enforcement practice. At the same time, the international context of the formation of these norms, in particular the influence of the Convention on International Trade… (1973) (CITES – Convention on International Trade in Endangered Species) or the Forest law enforcement… (2003) (FLEGT – Forest Law Enforcement, Governance and Trade) initiative, is largely unexplored in the study.

The impact of China's domestic environmental restrictions on global timber markets was examined in the research by Q. Zhang *et al.* (2023), which found that the ban on domestic logging contributed to increased stability of the timber import network. The authors demonstrated that internal prohibitions have external consequences, notably the displacement of environmental pressure to other countries. However, the study does not analyse how criminal law instruments might offset these negative transnational effects. In a similar vein, J. Zeitlin & C. Overdevest (2021) proposed a transnational regime of timber legality, focusing on the interplay between states, markets and supranational institutions. They found that such regimes produce a new modality of regulatory power beyond traditional international law, but the criminal-law implications of state involvement in such regimes remain underexposed, certainly in a comparative perspective between different legal systems.

This being the case, the analysis of the academic literature reveals the availability of a significant amount of research on various aspects of environmental policy, timber trade, and control mechanisms. At the same time, a shortage of comprehensive comparative studies has been identified that would systematically analyse the impact of international environmental and trade agreements on the formation of criminal law approaches in states occupying different roles within the global forest supply chain. This study aimed to examine issues of criminal liability for illegal logging and transboundary timber trade in China and Indonesia in the context of international agreements In order to accomplish this aim, the study intended to accomplish the following objectives: to critically examine the

development of the criminal legislation of the two states relating to liability for forest crimes, to ascertain the impact of international agreements on the formation of approaches of state penal laws, and to compare the effectiveness of measures of penal law, as well as practices of courts, law enforcement, and environmental protection institutions.

Materials and Methods

The subject of this research consists of an analysis of criminal law methods in combating illegal logging and transboundary timber trade in China and Indonesia during the years 2010-2025. The selection of this period is connected with the increasing intensity of international regulation in the sphere of environmental and trade regulation, as well as with dramatic changes in the national criminal regulations of both states, aimed at increasing criminal liability in this sphere. The spatial boundaries of this research are conditioned by the participation of both states in international chains of illegal timber harvesting and trade.

The material basis of the research consisted of national criminal statutes and specialised forestry legislation of China and Indonesia. For the analysis of the Chinese model, provisions of the Criminal Law of the People's Republic of China No. 83 (1997), in particular Articles 151, 225, 338, and 345-347, Forest Law of the People's Republic of China No. 3 (2019), as well as the Law of the People's Republic of China No. 67 (2012), were examined. In the Indonesian context, the analysis covered the Law of the Republic of Indonesia No. 41 (1999) and the Law of the Republic of Indonesia No. 1 (2023), as well as regulatory acts concerning forest protection and the functioning of the Sistem Verifikasi Legalitas Kayu (n.d.), including Government Regulation of Indonesia No. 45 (2004) and Government Regulation of Indonesia No. 6 (2007). These instruments were used to identify the constituent elements of forest-related crimes, the structure of criminal sanctions, and specific features of the differentiation of liability depending on the scale and organised nature of offences.

A further set of materials was international treaties on environmental and criminal laws that framed the external regulation for the criminalisation process of forest-related crimes. Within the study, provisions of the Convention on International Trade… (1973), European Union (2003) were examined. These acts were considered not as sources of direct criminal law norms, but as institutional frameworks that determine the transformation of national legislation and law enforcement practice.

To establish the quantitative context for the criminal law analysis, satellite and statistical data from Global Forest Watch (2024b) for the period 2010-2024 were used, along with analytical reports from the Environmental Investigation Agency (2021). The abovementioned statistics are presented as a basis for determining the dynamics of deforestation and as proof of the interconnection between the scope of illegal logging and the intensification of criminal law sanctions. These indexes have not been applied as a method for the calculation or prediction of any tendencies; they play the role of an empirical ground for legal analysis and for comparison of the results of the application of different normative mechanisms.

In addition to measuring the de jure punitiveness of criminal law sanctions, an assessment of the de facto punitiveness of criminal law in practice was also necessary, for which a comparative analytical approach of law enforcement was used, combining normative legal analysis with an examination of secondary quantitative empirical data. The empirical basis for analysing the practical implementation of criminal law sanctions consisted of analytical reports by international organisations for the period 2020-2025, in particular materials from the United Nations Office on Drugs and Crime (2025), including the United Nations (2020; 2024). A separate group of sources comprised reports by the Environmental Investigation Agency (2024), which analyse enforcement practices in the areas of illegal logging, transboundary timber trade, and the reclassification of environmental crimes as customs or economic offences. In addition, the study drew on sectoral risk reviews of illegal deforestation and associated timber trade in individual countries, including the analytical report Illegal Deforestation and Associated… (2024), which contains aggregated data on the application of criminal sanctions and the institutional capacity to counter forest-related crimes.

Results and Discussion

Characteristics of the criminal legislation of China and Indonesia in the field of combating forestrelated crimes

In the period of 2010-2025, China and Indonesia continued to be countries participating in the global illegal logging and illicit transboundary timber trade, which played significant roles in the evolution of national criminal law regimes of forest resources protection. As Global Forest Watch (2024b) revealed, forest cover loss trends in the two countries show steady characteristics of both legally and illegally felled timber, on which criminal law control and responsibility mechanisms in forest use have been developed. The highest rate of forest cover loss in Indonesia occurred between 2010 and 2016, with an annual loss of 1.3 to 2.4 million hectares. During this time, illegal palm oil production was at its height, and transnational logging groups were at their most prolific. While the rate of deforestation has been declining since 2017, Indonesia still ranks as one of the largest exporters of illegal timber according to Global Forest Watch (2024a).

In China, forest cover loss dynamics remained relatively stable; however, the country was an important factor in the global illicit timber trade as the largest consumer of tropical timber. Although China officially declares a policy of "ecological civilisation", studies indicate that a significant proportion of illegal timber entered the market through transit schemes, in particular via Myanmar and Laos (Environmental Investigation Agency, 2021). Meanwhile, satellite data show that between 2020 and 2024, annual forest cover loss hovered between 350 to 450 thousand hectares, showing that forest resource use remained under pressure

(Global Forest Watch, 2024b). These numbers are represented graphically in Figure 1, which depicts the general patterns of forest cover loss in China and Indonesia from 2010 to 2024. A side-by-side comparison of these two numbers makes it clear that there is an imbalance between the two countries; in most years, the amount of forest loss in Indonesia is between two and four times larger than that of China. This imbalance makes sense given Indonesia's status as the main source of illegal timber and China's status as one of the main importers and exporters of illicit timber.

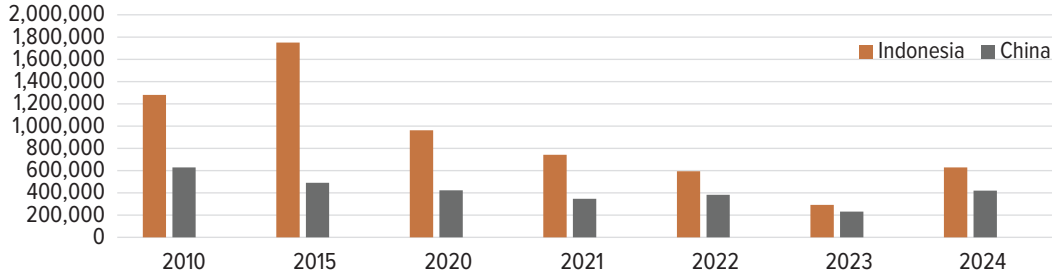

Figure 1. Tree cover loss in China and Indonesia 2010-2024 (thousand ha)
Source: compiled by the author based on Global Forest Watch (2024b)

Figure 1 demonstrates the dynamics of forest loss in Indonesia and China between 2010 and 2024. The highest levels of forest loss in Indonesia were noted in 2010 (over 1.2 million ha) and 2015 (1.7 million ha), which indicates active forest use in that period. Minimum values are noted in 2023 (approximately 0.3 million ha), followed by a partial increase in 2024 to about 0.6 million ha. The values of forest cover loss in China are significantly lower and more stable; the maximum forest loss was noted in 2010 (over 0.6 million ha), and the minimum was in 2023 (around 0.25 million ha). A general trend toward a decrease in the rate of logging after 2015-2017 is observed in both countries, which can be associated with the toughening of mechanisms of both legal and criminal law in the field of forest management.

The legal regulation of forest-related crimes in China and Indonesia is based on a combination of criminal, administrative, and sectoral laws, which contain provisions defining the regulations governing the use of forest resources, the criminal nature of their illegal extraction, as well as state regulations governing forest timber control. In China, the legal basis for the regulation of forest-related crimes is the Criminal Law of the People's Republic of China No. 83 (CL-PRC) (1997), which, in its articles 345-347, criminalises the illegal logging, damage, and destruction of forests and stipulates differentiated liability depending on the nature and scope of the infringement. According to the law, serious cases refer to large volumes of illegally harvested timber, significant environmental harm, repeated offences, organised conduct, or illegal harvesting using machinery or teams that cause substantial losses of forest resources. Under Article 345 CL-PRC, these circumstances are liable to up to 7 years imprisonment and significant fines, unlike "ordinary" cases of illegal logging, when the liability is limited to 3 years of imprisonment or fine. Particularly severe cases, in which illegal activities cause "especially significant harm to state forest resources", may be punished with a term exceeding seven years under Article 346 CL-PRC, covering major environmental crimes and large-scale illegal timber trade. In a separate provision, Article 151 CL-PRC foresees liability for the smuggling of timber, an aspect of special relevance in the framework of transboundary flows of timber between China and Southeast Asian countries. In addition, Articles 225 and 338 CL-PRC foresee liability for illicit activities related to the purchase and sale of timber without the required license, as well as for environmental crimes resulting in significant harm to natural resources.

The main legislative act governing the relations in the sphere of forests in China is Forest Law of the People's Republic of China No. 3 (2019), which not only increased the necessary requirements for the protection of forest resources, but also established new regulations for forest use. The law directly prohibits illegal timber harvesting without a license, and administrative and criminal liability is provided for unlicensed activities, exceeding quotas, as well as the circulation of timber obtained in an illegal way. In addition, the law introduces the tracing of the origin of timber and state monitoring systems in accordance with international environmental standards. Another component of full regulation is the Law of the People's Republic of China No. 67 (2012), which provides the possibility of applying administrative penalties for minor offences in the legislation on forestry, in particular, the illegal transportation and storage of timber. Thus, the Chinese model is a combination of criminal and administrative mechanisms that make it possible to respond to different types of offences in the sphere of forests.

The legislation of Indonesia on forest protection is based on the Law of the Republic of Indonesia No. 41 (1999), which establishes the rules for the use of forest resources, as well as criminal liability for the illegal harvesting, transportation, and storage of timber. Amendments to the law in 2002 and 2007 increased criminal liability for illegal logging and activities related to organised crime groups. The law establishes that the participation of organised networks of loggers, including financing, organising, or using illegally harvested wood, is punished with imprisonment for a period of five to fifteen years and a fine of up to five billion

Indonesian rupiah (IDR) (approximately 350,000 USD). For the main types of illegal timber harvesting, such as unauthorised logging, forgery of forest documents, transportation of illegal timber, or assisting in the illegal export of timber, the penalties are from one to ten years imprisonment, and a fine of from 500 million IDR to 5 billion IDR, depending on the scope of the offense, the involvement of an organised group, or the degree of environmental harm caused. Furthermore, the law also clearly states the higher legal responsibility of public servants in terms of corruption for the issuance of illegal permits or for the operation of illegal logging, as in such cases it can be punishable with up to 20 years in prison and a fine of up to 10 billion IDR, thus illustrating the inclusion of anticorruption legal content in the forest crime legal policy.

The uniqueness of the Indonesian approach is the existence of the Sistem Verifikasi Legalitas Kayu (SVLK) (n.d.), a national system that verifies the legality of timber, established as required by the EU to implement the European Union (2003). Even though the SVLK is not a criminal law instrument, due to its legal foundation and practice, it has a quasi-criminal nature, because non-compliance with the system incurs administrative as well as criminal liability. According to Government Regulation of Indonesia No. 6 (2007) and No. 45 (2004), people or enterprises that carry out harvesting, processing, transporting or exporting of wood without an SVLK certificate or with forged certificates shall be subject to multi-level sanctions. Administrative sanctions include revoking the harvest or export license, suspending the enterprise temporarily or permanently and seizing the timber and equipment.

In case of serious breach to SVLK, like certificate counterfeiting, being involved in an organised criminal group of illegal logging, or intentional transfer of illegal timber, the SVLK law resorts to criminal liability, which is taken from the Law of the Republic of Indonesia No. 41 (1999) and Law of the Republic of Indonesia No. 1 (2023). Criminal penalty ranges from one to ten years of prison for illegal harvesting, moving and trading of timber without SVLK certification, up to fifteen years of prison for crimes committed in an organised criminal group or in a massive way (for instance, illegal export of a large amount of timber), a fine of up to 5 billion IDR, or in case of recidivism, up to 10 billion IDR, and criminal liability for public servants who forge the SVLK documents, issue permits illegally, or hide evidence of illegal logging. Hence, SVLK acts as a tool of administrative and criminal law levers that impact the agents of illegal felling and timber trafficking. This multi-level system of responsibility serves as a threat, which is directed against the illegal timber market. As the conclusion suggests, the dynamics of forest area in China and Indonesia in 2010-2025 are not only an environmental indicator, but they are also an indicator of the effectiveness of criminal law levers in the fight against illegal logging. The dynamics are consistent with the results of studies on the causes and structure of illegal timber trade. This dynamic corresponds to maximum losses in Indonesia in 2010-2016 (1.3-2.4 million ha per year) and small-scale, but persistent losses in China (350-450 thousand ha per year in 2020-2024).

The results of the research partially agree with those of J. Sheng *et al.* (2023), who, against the backdrop of the declarative policy of "ecological civilisation" in China, note the preservation of the status of a key link in the international illegal timber market. The authors confirm that a significant proportion of illegal timber flows to China through transit channels – via Myanmar and Laos, which agrees with the plateau of forest cover losses in 2020-2024. Simultaneously, the authors note that even the toughening of criminal responsibility in the PRC cannot compensate for the external influences of illegal flows, which agrees with the detected imbalance between the scale of forest loss and the existing control mechanisms. A partial difference with the current results is that J. Sheng *et al.* place greater emphasis on the economic demand factors, while the data in this study also show the significant influence of the institutional capacity and law enforcement practices.

The data obtained for Indonesia agree with the results of S.M. Piabuo *et al.* (2021), who studied the relationship between illegal logging, weak governance and increasing environmental risks in Asian countries. The authors identified corruption and low effectiveness of law enforcement institutions as the main causes of the accelerating depletion of forest resources, which agrees with the maximum losses in Indonesia in 2010-2016. Their results also confirmed that the toughening of criminal responsibility without the reform of the governance system does not lead to a long-term effect, which is illustrated by the preservation of Indonesia's status as one of the largest suppliers of illegal timber after the tightening of the regulations. The difference lies in the fact that S.M. Piabuo *et al.* paid greater attention to global environmental consequences, while this study highlights the criminal law aspect of the problem.

The results also agree with the conclusions of H. Supratman & M. Alif (2022) about the efficiency of the SVLK system in Indonesia as a quasi-criminal means of controlling the origin of timber. The authors showed that after the introduction of free certification for small businesses, the formalisation level in the timber industry increased; however, the risks of abuse and falsification of documents remained. This agrees with the results of this study, which note the need for criminalisation of gross violations of the SVLK regime, including forgery of certificates, illegal transportation and participation in an organised scheme. At the same time, the study by H. Supratman & M. Alif notes that the SVLK system is efficient only given the proper state control, which agrees with the dynamics of the decrease in forest losses after 2017. In general, the legal and regulatory approaches in China and Indonesia have different priorities: the PRC is focused on centralised control and criminalisation of environmental crimes, while Indonesia combines anti-corruption, environmental and anti-organised crime components due to the spread of illegal logging networks. Both countries have broad legislation; however,

the efficiency of its application for a long time depended on the institutional capacity and the presence of relevant international obligations.

The role of international environmental agreements in shaping criminal law responses in China and Indonesia

International environmental agreements contribute to the formation of contemporary criminal law responses to illegal logging and transboundary timber trade despite not being directly binding on individuals and legal entities. Their regulatory effect is indirect – through the binding effect on contracting states to criminalise certain types of environmentally damaging conduct, to establish minimum standards for control over the use of natural resources, and to bring national legislation in line with global environmental and trade regimes (Bösch, 2021). In this sense, international agreements play the role of normative stimuli that set in motion a process of change in the domestic legal order, primarily in the criminal law and law enforcement dimension.

The scientific literature stresses that the participation of states in multilateral environmental and trade agreements has made it possible to evolve gradually from the predominantly administrative regulation of forest exploitation to a wider application of criminal law sanctions, particularly in the case of transboundary offences and organised crime structures (Bellelli *et al.*, 2023). International agreements such as the Convention on International Trade… (1973), the Convention against The United Nations Convention against Transnational Organized Crime (2000) (UNTOC) and European Union (2003) not only establish general standards for forest resource protection but also encourage states to introduce criminal liability for illegal logging, timber trafficking, falsification of permits and corruption in the forestry sector.

For China and Indonesia, the international pressure to comply with these agreements was a factor that strengthened criminal sanctions between 2010 and 2025 and expanded the range of criminal law regulation. Although the Convention on International Trade… (1973) does not have direct criminal law provisions, its legal impact is based on the imperative obligation of contracting states to provide effective sanctions against the unlawful export, import, and transit of species specimens included in the Appendices to the Convention. This requirement has facilitated the gradual transition of illegal natural resource trade from the sphere of administrative regulation to the realm of criminal prosecution, particularly in the context of transboundary offences. In recent scientific studies, CITES is increasingly considered not as a narrowly environmental agreement but as one of the first international regimes that has contributed to the criminalisation of global illegal resource markets, including timber, through the mechanism of states' international obligations (Qian *et al.*, 2016; Grigoras, 2024).

In China, the implementation of CITES did not result in the establishment of special criminal offences, but influenced the application of criminal law in the sphere of smuggling. In this sense, Article 151 of the Criminal Law of the People's Republic of China No. 83 (1997) is of particular importance as it provides for liability for the smuggling of goods across the state border. As empirical studies by M. Shi *et al.* (2025) have shown, against the backdrop of the strengthening of international control within the framework of CITES, the Chinese law enforcement practice has increasingly qualified the illicit transportation of tropical timber not as a customs or administrative offence, but as a criminal offence that affects ecological security and international obligations of the state. Thus, in the Chinese context, CITES acts as a normative model that defines rigorous criminal sanctions, in particular for transboundary operations with illegal timber, without directly regulating domestic logging.

In Indonesia, the effect of CITES is of a different nature and is expressed mainly in the criminalisation of illegal exports of tropical timber species included in the Appendices to the Convention. As S.Y. Ardiyanto *et al.* (2022) point out, Indonesia's participation in CITES became one of the factors in the gradual movement away from administrative sanctions in external timber trade and towards criminal prosecution in cases of systematic and organised violations. As a result, although CITES itself does not regulate domestic logging activities, it works as a normative driver for the criminalisation of transboundary forest crimes, which is an important variable for explaining the design of Indonesia's criminal law model in the forestry sector.

In contrast with traditional international environmental treaties, the European Union (2003) has a clear trade law nature and aims to control the access of illegal timber to the EU market. The implementation of EU requirements directly resulted in the creation of Indonesia's SVLK system, which made the verification of the legality of timber mandatory at all supply chain levels, from harvesting to export. As D. Susilawati (2022) points out, the SVLK was not a mere product of environmental policy, but a direct result of Indonesia's international commitments under the EU Voluntary Partnership Agreement. The primary driver of its adoption was not environmental protection per se, but the threat of losing access to a foreign market, which conferred a high regulatory effect on FLEGT.

The United Nations Convention against Transnational Organised Crime (2000) does not explicitly mention illegal logging; however, its general provisions on organised crime, financing, corruption, and international cooperation provided a conceptual framework for the recognition of forest crimes as a type of transnational organised crime. In Indonesia, the impact of UNTOC is reflected in the clear orientation of criminal policy toward the prosecution of organised logging networks, which involve financing, coordination, corrupt enablement, and money laundering. Indonesian legislation consciously differentiates between petty forestry offences and systemic crimes related to transnational networks, and fully adheres to UNTOC's logic of prioritising the prosecution of organised types of criminal activity (Absori *et al.*, 2024).

In China, the implementation of UNTOC provisions is more indirect and occurs through general criminal provisions on organised crime, smuggling, illicit business activities, and corruption. The Chinese model does not recognise illegal logging as a specific type of transnational organised crime; however, it provides an opportunity for the prosecution of participants in such schemes through the accumulation of several criminal offences. This reflects the different levels and modes of UNTOC implementation, depending on the peculiarities of national legislation and the role of each country in the global network of illegal timber trade (Liu *et al.*, 2024).

A comparative analysis shows that international treaties have played different functional roles in the construction of the criminal approaches of China and Indonesia toward forest crimes. CITES served as a primary driver for the criminalisation of the transnational illegal timber trade and prepared the ground for the transition from administrative to criminal responsibility in cases of international offences in both countries. European Union (2003) produced an asymmetric effect: in China, it plays a secondary role as an external standard of control, while in Indonesia, it resulted in the establishment of the Sistem Verifikasi Legalitas Kayu (n.d.), combining trade, administrative, and criminal law mechanisms. United Nations Convention against Transnational Organized Crime (2000) is most fully implemented in the Indonesian legislation, where illegal logging is recognised as a form of transnational organised crime, while in China, its implementation is indirect and occurs through general criminal provisions. In general, international treaties have not worked as direct sources of criminal provisions, but rather as structural drivers for the strengthening of criminalisation, the differentiation of responsibility, and the institutional modernisation of national legislations.

The findings are in line with those of A.E. Apeti & B.D. N'doua (2023), who found that international regimes regulating the timber trade produce a significant indirect effect on national legislations, even in the absence of explicit criminal provisions. These authors showed that the tightening of trade restrictions and requirements for the legal origin of timber drives changes in domestic regulatory structures, including a shift from administrative measures to criminal sanctions in cases of systemic violations. The results of this research endorse this hypothesis for the cases of China and Indonesia, in which compliance with international obligations under CITES and FLEGT is reflected in the growth of criminal law reactions to transnational forest crimes between 2010 and 2025.

The conclusions about FLEGT and the SVLK system in Indonesia are generally in line with those of A. Ma'ruf (2021), who investigated SVLK as a type of environmental labelling combining trade, legal and enforcement elements. The author concluded that SVLK serves not only as an administrative tool but also as a legal enforcement instrument, since non-compliance with its provisions entails severe legal consequences. The results of this study extend this point of view by demonstrating that since the introduction of FLEGT, violations of the SVLK regime in Indonesia are increasingly criminalised, especially in situations involving certificate counterfeiting, concerted practices and corrupt services. Thus, SVLK manifests itself as a quasi-criminal instrument that exceeds the limits of environmental or trade policy – a fact only partially stressed by A. Ma'ruf (2021).

The results partially resonate with the conclusions of T. Besisa Nguba *et al.* (2025), who considered forest degradation and the failure of exclusive focus on illegal logging. The authors claim that overreliance on the legal arsenal on illegal logging fails to account for other factors of forest degradation, such as small-scale farming. In turn, the results of this study demonstrate that within the international agreements, criminalisation of transnational forest crimes follows its own path, which has a linkage not only to the environmental damage but also to countering organised crime and illegal markets. Hence, the approach criticised by T. Besisa Nguba *et al.* (2025) has a right to existence in the context of international legal obligations, where priority is given to the control of the global flows of illegal timber rather than to the control of all forms of forest degradation.

Overall, the results of the study endorse the scholarly position that international environmental treaties are not direct sources of criminal law norms, but structural matrices, within which national lawmakers intensify criminal responsibility. Unlike some of the previous research, this study demonstrates that the impact of Sistem Verifikasi Legalitas Kayu (n.d.), the United Nations Convention against Transnational Organized Crime (2000) and European Union (2003) is not the same but differential: CITES serves as a driver for the criminalisation of transnational timber trade, FLEGT acts as a quasi-criminal mechanism of control for the exporting countries, and UNTOC provides a conceptual architecture for the prosecution of organised forest crimes. This makes it possible to specify the role of international treaties not as "external pressure" but as drivers of the functional transformation of criminal law policies in China and Indonesia.

Effectiveness of criminal sanctions and enforcement mechanisms in countering illegal logging and timber trade

A comparative analysis of the criminal law regimes of China and Indonesia highlights a substantial discrepancy between the formally prescribed toughness of the sanctions (the maximum level of sanctions and the scope of sanctions in the dispositions) and their practical implementation, which immediately affects the effectiveness of the criminal law deterrent in relation to forest crimes. The mere presence of lengthy terms of imprisonment and high pecuniary sanctions does not ensure effective application if these sanctions are applied selectively or replaced by other measures of responsibility (United Nations, 2020). Legislatively, Articles 345-346 of the Criminal Law of the People's Republic of China No. 83 (1997) stipulate differentiated

punishments for illegal logging and timber trade: up to seven years' imprisonment, and more than seven years' imprisonment for serious and especially serious infringements. Analytical reviews carried out by international bodies and monitoring agencies point to the selective use of maximum legal sanctions in judgments, with a focus strictly on schemes involving large-scale organised schemes, considerable quantities of illegal timber sourced, or considerable damage to the environment. The United Nations (2024) states that, in most importing countries, including China, the severest criminal penalties are rarely imposed, while most of the sentences are relatively light.

Further analysis of the pattern of enforcement, as outlined within the thematic reports by the United Nations Office on Drugs and Crime (2025), on the topic of environmental offences, indicates that in the context of illegal logging/timber trafficking, it appears that the courts are reluctant to mete out the most severe custodial sentence, and that preference is shown towards the imposition of alternative sentencing, such as suspensions or fines, reflecting the fact that the penalty is not "particularly serious". This restricts the practical deterrent potential of criminal law despite its formal strictness. Moreover, in the thematic reports of independent monitors, such as those issued by the Environmental Investigation Agency (2024), one may find traces of a down-classification of environmental crimes into breaches of customs, tax or commercial legislation, which allows the application of less stringent sanctions and the circumvention of the upper range of the criminal sanctions foreseen by legislation. Taken together, these tendencies generate a situation where the formal strictness of criminal legislation on forest protection is not fully matched by an equivalent level of real criminal-law enforcement, particularly in the case of transnational flows of illicit timber.

Unlike the Chinese model, in Indonesia the formal strictness of criminal sanctions for forest-related crimes is accompanied by their practical implementation, particularly in the case of organised criminal groups, corrupt complicity and the export of illicit timber. Analytical data presented in Illegal Deforestation and Associated… (2024) suggest that criminal sanctions, including prison sentences and pecuniary fines, are used not only formally but also in practice, as an effective means to counter systemic infringement in the forestry sector. According to the United Nations (2024), in Indonesia, the courts often impose a combination of penalties in cases involving organised logging, such as imprisonment, fines and confiscation. The level of the fines imposed (up to 5-10 billion IDR) is equivalent to or exceeds the profits obtained from the sale of the illicit timber. This increases the actual deterrent effect of criminal law.

In sum, the analytical data demonstrate that the deterrent effect of criminal sanctions does not depend on their formal strictness but rather on their systematic and inevitable application. In the Chinese model, there is a high level of formal strictness and a low level of practical implementation, whereas in the Indonesian model, there is a relative proximity between the legislation in force and judicial practice. This leads to the conclusion that the effectiveness of criminal-law reactions to forest crimes does not depend solely on the contents of the sanctions but also on the institutional capability to guarantee their practical implementation. In this sense, the structure of the law enforcement system, the level of institutional specialisation, the inter-institutional cooperation and the capability of the state to accompany cases from the phase of identifying illicit activity to the judicial sentence are of key relevance.

The Chinese model is characterised by a centralised system of detection and investigation of forest crimes. The main actors responsible for revealing violations of the law are forestry administrations, customs, and public security agencies. The majority of criminal cases on illegal logging and trade are brought only when these crimes involve a transboundary component or significant volumes of illegally harvested and transported forest resources. According to analytical reports of international organisations, customs primarily identify violations related to the export of timber, including through the land border of China with Southeast Asian countries (Environmental Investigation Agency, 2021; United Nations Office on Drugs and Crime, 2025).

In Indonesia, the structure of the agencies responsible for detecting and investigating crimes related to illegal logging is more diverse and decentralised. In addition to forestry agencies and police, crimes in this area are also revealed by anti-corruption agencies, in particular the Corruption Eradication Commission (KPK) (n.d.), as well as financial intelligence agencies and tax authorities. The availability of such a structure of agencies responsible for the suppression of illegal logging allows controlling not only the direct performers of crimes in this sphere but also financial and organisational structures of logging criminal networks (Illegal Deforestation and Associated…, 2024). An important feature of the Indonesian model is a higher level of transparency of law enforcement practice. Court decisions on crimes in the sphere of forest crimes are much more often made public, which increases not only the transparency of the system but also its preventive effectiveness. In conjunction with the functioning of the Sistem Verifikasi Legalitas Kayu (n.d.) and international monitoring within the European Union (2003) agreement, this creates an additional incentive for law enforcement agencies to apply norms of criminal law not formally but in essence (Environmental Investigation Agency, 2024). To summarise the identified differences in the statutory model and law enforcement practice in China and Indonesia, Table 1 presents a comparative overview of the effectiveness of criminal law mechanisms in the fight against forest crimes. The conducted comparative analysis allows concluding that the effectiveness of criminal law mechanisms in the fight against forest crimes is less determined by the formal severity of criminal sanctions and more by the combination of certainty of punishment, economic sanctions, and the state's institutional capacity to ensure the real application of criminal sanctions. The Chinese model is characterised by a high formal level of severity of

criminal sanctions combined with selective law enforcement and low transparency of the law enforcement system, which significantly reduces the preventive effectiveness of criminal law. The Indonesian model is closer to the legislative model of criminal law and law enforcement practice, which significantly increases the preventive effectiveness of criminal law sanctions in the fight against illegal logging and transboundary timber trade.

Table 1. Comparative overview of the effectiveness of criminal law mechanisms against forest crimes in China and Indonesia

Criterion	China	Indonesia
Nominal severity of sanctions	High (differentiated prison terms, broad statutory provisions)	Very high (imprisonment up to 15 years; fines up to IDR 100 billion)
Frequency of application of maximum penalties	Limited, selective	Selective (applied in cases involving organised illegal logging syndicates)
Judicial practice	Tendency towards mitigation and alternative sanctions	Active application of imprisonment (up to 15 years for organisers of illegal logging; 5-10 years for members of organised groups; 1-5 years for individual offenders) and fines (up to IDR 100 billion for corporations; up to IDR 50 billion for individuals)
Reclassification of offences	Limited; criminal classification generally maintains (customs, commercial violations)	Reclassification of offences
Institutional model	Multi-layered, inter-agency	Multi-layered, inter-agency
Role of anti-corruption bodies	Secondary	Key (KPK, financial authorities)

Source: compiled by the author based on Criminal Law of the People's Republic of China No. 83 (1997), Law of the Republic of Indonesia No. 41 (1999), United Nations (2024), Environmental Investigation Agency (2024)

The results of this research generally coincide with the conclusions of the systematic review prepared by F.D.P. Villanueva *et al.* (2023), in which the authors analysed the impact of EU policies on combating illegal timber felling in supplier countries. The authors concluded that a formal increase in the rigidity of the regulatory framework and sanctions does not necessarily lead to a decrease in the scale of illegal felling in the absence of its implementation and institutional capacity at the national level. The authors emphasise that there is a discrepancy between the statutory framework and the actual practice of law enforcement in a number of countries, which significantly reduces the preventive effectiveness of the sanctions imposed. A similar discrepancy was found in the Chinese model, in which the formally high severity of criminal law sanctions does not ensure their real application, primarily in relation to transboundary flows of timber.

The results of this article are in line with those of J.F.M.F. Tonouéwa *et al.* (2024), who investigated the impact of timber traceability instruments as a mechanism to fight against illegal logging. They showed that the deterrent impact of criminal law is actual only when supported by the legal sanction, institutional control, information and inter-agency collaboration. The research shows that weak enforcement and the possibility to circumvent criminal liability by requalifying crimes as delicts significantly reduces the deterrence of criminal law. This is corroborated by the results of this study, which show that in China, the extensive requalification of environmental crimes into customs or commercial offences lowers the deterrence of the criminal law.

Meanwhile, the results of this article are in line with the findings of D.A. Rahmawati *et al.* (2025). The authors analysed, within the framework of a normative-legal study, the effectiveness of sanctions under the Indonesian law on illegal logging. According to the authors, the Indonesian model demonstrates a closer relation of legislative acts to law enforcement practice, which manifests itself in the application of cumulative sanctions, the confiscation of property and imposing large fines. In their opinion, the anti-corruption and financial services authorities play an important role in bringing the organisers of criminal groups to justice, not just the direct participants in crimes. The current article confirms the results of this study. It is the consistent application of the law and the economic non-profitability of the illegal activity that guarantees the stronger preventive effect of criminal sanctions in the Indonesian model compared to the Chinese model.

Conclusions

This article confirms the results of this study. It is the consistent application of the law and the economic non-profitability of the illegal activity that guarantees the stronger preventive effect of criminal sanctions in the Indonesian model compared to the Chinese model. The results show that China and Indonesia had different institutional paths with respect to illegal logging and transboundary timber trade between 2010 and 2025, in terms of criminalisation, governance and enforcement. Global Forest Watch quantitative data show that the forest cover loss in Indonesia reached the peak from 2010 to 2016 (more than 1.3-2.4 million hectares per year), and China had relatively stable but high forest cover loss from 2020 to 2024, as the foundation for criminal law intervention. The levels of formal legal development are comparably high in both jurisdictions. The Chinese model presents a mix of criminal and administrative measures and retains an almost universal criminalisation of environmental crimes. China also employs a range of penalties, including imprisonment for 7 years or

more and criminal liability for timber trafficking and for organised forestry crime. This illustrates a greater concern for state sovereignty and the preservation of natural resources as a component of national environmental security.

It is the consistent application of the law and the economic non-profitability of the illegal activity that guarantees the stronger preventive effect of criminal sanctions in the Indonesian model compared to the Chinese model. Indonesian legislation is directed at combating organised crime and corruption, which has traditionally either underpinned or accompanied illegal logging. Inclusion of the SVLK scheme has created a hybrid legal structure consisting of criminal and administrative liability and a pseudo criminal feature as a criminal law tool in verifying the legality of timber sources, which, in turn, is more of a preventive and supply chain control.

To conclude, the efficiency of criminal law mechanisms in the fight against forest crimes depends not so much on the symbolic rigour of the sanctions, but rather on the ability of the state to enforce the law, the articulation between institutions and the transparency of the enforcement activity. The findings corroborate the arguments in favour of the criminal policy for the protection of the forest to be directed towards the certainty of punishment, the restriction of the institutions of reclassification of the offence and the application of cumulative sanctions as a practical instrument of dissuasion to illegal logging and trade in timber. Future research should focus on an in-depth analysis of the effectiveness of criminal and quasi-criminal mechanisms for combating illegal logging in other countries involved in global timber supply chains.

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Talgat Makulov conducted a comparative analysis of the criminal legislation of China and Indonesia, combining legal provisions with satellite monitoring data. He personally designed the structure of the study and prepared the manuscript, including the interpretation of statistical reports and the formulation of final conclusions.

Conflict of Interest

None.

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The impact of legal norms on criminal practices related to money laundering in Kazakhstan: A comparison with the experience of Singapore

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Abstract. The purpose of the study was to clarify the role of regulatory mechanisms in the development and change of methods of money laundering in Kazakhstan, including a comparative analysis of Singapore's legal approach. The study used a qualitative and quantitative comparative design using comparative legal and special legal analysis, a case study based on the Placement-Layering-Integration model within the framework of standards. During the study, it was found that the legal regulation of money laundering in Kazakhstan and Singapore is based on a two-level model of Anti-Money Laundering / Counter-Financing of Terrorism, which combines the criminalisation of money laundering and a financial monitoring system. It was revealed that in Kazakhstan, money laundering is an independent crime and is supplemented by a centralised model of financial monitoring. But in Singapore, criminalisation is implemented through a ban on transactions with property of criminal origin, combined with a developed confiscation regime, and preventive control is provided by sectorally differentiated regulatory requirements of the Monetary Authority of Singapore. Comparative analysis showed that Kazakhstan is dominated by the procedural control model, in which the key restriction at the placement and layering stage is centralised financial monitoring and formalised application of Customer Due Diligence and Enhanced Due Diligence. In Singapore, the legal impact is more differentiated and combines sectorally detailed compliance with the real threat of asset confiscation. It was revealed that these differences form different "regulatory risk ecosystems", within which criminal practices are adapted by optimising to meet procedural requirements or flowing into less regulated segments of the financial system. It was proved that the adaptation of certain elements of the Singapore approach, in particular, the strengthening of property mechanisms at the integration stage and the focus of sanctions on systemic risks, can increase the real regulatory impact of Anti-Money Laundering / Counter-Financing of Terrorism norms in Kazakhstan. The practical significance of the results obtained lies in the possibility of their use by the authorised financial monitoring bodies and regulators of the Republic of Kazakhstan in improving the criteria for assessing client and transaction risks, and in the development of supervisory practice

Keywords: financial security; cross-border financial flows; income legalisation; asset confiscation; economic turnover

Introduction

Money laundering remains one of the threats to the financial security of states and the stability of the rule of law in the context of globalisation and the growth of cross-border financial flows. The development of digital financial instruments, the complexity of corporate structures, and the active use of international financial centres contribute to the evolution of criminal practices of laundering funds obtained by criminal means. Under these conditions, the effectiveness of countering money laundering is largely determined by the content of legal norms, mechanisms for their implementation, and law enforcement practices. For Kazakhstan, the problem of money laundering is relevant in connection with the transformation of the financial system, participation in international economic processes, and the need to harmonise national legislation with international standards in the field of countering the legalisation of criminal proceeds. Despite the formal compliance of many regulatory provisions with the recommendations of international organisations, scientific research and law enforcement practice record the existence of discrepancies between legal regulation and actual criminal practices. This indicates a limited influence of certain legal norms on the actual behaviour of subjects of financial crimes.

The scientific background on Anti-Money Laundering / Counter-Financing of Terrorism (AML/CFT) in Kazakhstan is dominated by a line that focuses on the ratio of formal regulatory compliance and the actual effectiveness of the system. R.M. Zhamiyeva & M.G. Albekova (2023) argued that the development of a general regulatory framework is accompanied by the preservation of the systems vulnerability to the "efficiency gap", when the presence of requirements does not guarantee a decrease in the ability of criminal practices to mask the origin of funds. They also stressed that the practical effectiveness of AML/CFT significantly depends on the quality of risk management and the heterogeneity of compliance behaviour of different actors, and not on the actual increase in formal responsibilities. The proposed conclusions only partially explained the causal mechanism of the influence of norms on the transformation of criminal schemes, leaving open the question of which legal structures can change the economic logic of "fitting" to procedural requirements.

Another block of literature links the effectiveness of countering income legalisation to the digital transformation of the financial environment, which continues and further increases the complexity of control. B. Yerkenov (2024) showed that digitalisation has shifted risk profiles: traditional detection mechanisms are weaker at detecting transactions that are hidden due to high transaction speeds, remote services, and fragmentation of payment chains. The researcher concluded that legal instruments should cover not only classical banking channels, but also new digital forms of financial interactions, in which income legalisation takes on a different structure. However, according to researcher, the comparative dimension remains insufficiently developed: the question of how jurisdictions with a more behaviourally sensitive compliance model (Singapore) integrate digital risks into regulatory incentives is highlighted in fragments.

Related studies aimed at criminal liability in the economic sphere provide important conclusions for understanding the limitations of "punitive" logic without property and systemic influence. Based on the conclusions of M.A. Utanov *et al.* (2024), the preventive potential of criminal law depends on the quality of normative constructions of the composition of the crime and the practice of proof, since they determine the reality of the risk to the economic benefit of the offender. They separately stressed that the formal existence of sanctions does not provide a deterrent effect when law enforcement focuses on proving completed episodes and does not create long-term legal uncertainty for assets. For money laundering issues, this means preserving the possibility of "deferred legitimisation" of property at later stages, but in the aforementioned study, this logic was not developed to analyse the stages of laundering and the confiscation component as an instrument of influence.

Singapore's experience in the literature is revealed by focusing on sectoral sensitivity and detailing requirements that narrow the scope for using legal markets to launder questionable capital. The paper by V. Ooi (2021) showed that in the non-financial sectors, the effectiveness of AML increases when regulation addresses specific risk channels, in particular, the high cost of goods, asset mobility, and the possibility of rapid conversion and movement. His conclusion is that sectoral specification of requirements reduces the "grey area" for transactions that formally look legitimate but can actually mask the origin of funds.

The Singapore papers also trace the evolution of AML as a policy that creates incentives for regulatory discipline not only through criminal prosecution, but also through autonomous oversight tools. R.E. Menon (2023) described the transition from a "crime prevention" framework to a model where compliance as standardised organisational behaviour becomes a key goal. The researcher noted that this change was reflected in the practical mechanisms of influence: along with the criminal block, the role of supervisory responses is growing, which correct the behaviour of institutions through sanctions, prescriptions, and requirements for risk management systems. For comparison with Kazakhstan, this is important because it allows assessing not only the "existence of norms", but also their ability to create institutional incentives for meaningful compliance. The paper by R.E. Menon (2023) is dominated by an explanation of the policy trajectory, while the question of the measurable impact of specific norms on the adaptation of criminal practices at different stages of laundering remains secondary.

Individual sources are not limited to AML topics but provide relevant conclusions for understanding the economic background in which money laundering finds legal "inputs". R.K. Goel & J.W. Saunoris (2022) showed that investment flows and firm behaviour have a mixed effect: in some cases, they support development, while in others, they

create opportunities for hidden reallocation of resources. It follows that cross-border financial interactions and investment instruments can serve as a "legitimate shell" for dubious capital if regulatory controls remain homogeneous and insufficiently sensitive to the economic content of transactions. However, in this paper, this conclusion was not directly linked to AML/CFT instruments, which reinforces the need for research that links the economic context to legal mechanisms for detecting and deterring money laundering.

The technological dimension of compliance in the contemporary literature is described as a resource for improving the quality of risk detection, and not just as a means of automating formal procedures. Analysis by E. Kurum (2023) pointed out that RegTech solutions change the quality of risk detection by comprehensively matching transactional patterns and network connections, reducing dependence on formal checklists. As a result, the logic of the transition from "procedural compliance" to the analysis of behavioural patterns of operations is formed, which is particularly relevant for jurisdictions where Customer Due Diligence / Enhanced Due Diligence (CDD/EDD) exists without criteria for evaluating their actual effectiveness. In the paper by E. Kurum (2023), the key issue remains forecasting the development of compliance, while the specification of legal design (which norms should change the requirements for risk assessment) requires additional justification in comparison with the practices of states where the relevant approaches are already fixed by regulation.

The criminal dimension of concealment of the origin of assets in the context of money laundering is detailed through attention to the limits of criminalisation and proof. A.A. Ghifari (2025) showed that not only the asset itself has legal significance, but also the legal interpretation of actions aimed at masking its origin, since it determines the framework of proof and the practical possibility of prosecution. The researcher noted that fuzzy or narrow approaches to concealment can lead to the actual legitimisation of assets through procedural barriers, even when their origin is questionable. For comparison between Kazakhstan and Singapore, this is important because it allows linking the problem of the integration stage with confiscation mechanisms and tools for challenging the legitimacy of assets. However, conclusions of A.A. Ghifari (2025) need to be linked to specific national structures and supervisory practices, which forms a request for specialised comparative research.

The purpose of the study was to determine the impact of legal regulation on the development of schemes for legalising criminal proceeds in Kazakhstan based on a comparison with the legal model of Singapore. To achieve this goal, the study provided for solving the following tasks: to characterise the system of legal regulation of countering money laundering in Kazakhstan and Singapore; to carry out a comparative analysis of the impact of legal norms and practices of their application on criminal practices of money laundering in these states; to substantiate areas for improving legal regulation and law enforcement practices of countering money laundering in Kazakhstan, taking into consideration the experience of Singapore.

Materials and Methods

The study was carried out within the framework of a qualitative and quantitative comparative design aimed at analysing the impact of legal norms on the transformation of criminal practices of money laundering. The methodological framework combined comparative legal analysis, case studies, which allowed investigating the regulatory architecture, the practice of its application, and empirical indicators of the effectiveness of AML/CFT regulation. The analytical basis of the study was the Placement-Layering-Integration model proposed and established in the analytical documents of the Financial Action Task Force (2025) (FATF). It was used as a tool for investigating the impact of legal norms on criminal practices of money laundering.

The chronological limits of the study covered 2010-2025, which was conditioned by several factors. Firstly, this period was characterised by the active implementation of the risk-based approach in the AML/CFT policies of states in accordance with the updated Financial Action Task Force (2025) standards. Secondly, in 2023-2024, Singapore and Kazakhstan developed relevant judicial and supervisory practices regarding the confiscation of assets and the application of AML/CFT sanctions, which created an empirical basis for case analysis. The choice of Kazakhstan as the main object of research was conditioned by its belonging to the Eurasian regulatory space, a centralised model of financial monitoring and the relevance of reforms in the field of combating money laundering. Singapore was chosen as the country for comparison because of its reputation as a high-density financial hub for AML/CFT regulation, a sectoral differentiated approach to financial supervision, and a well-developed practice of imposing confiscation and supervisory sanctions.

Comparative legal analysis was applied to identify differences in the regulatory framework for countering money laundering in Kazakhstan and Singapore, in particular, in the methods of criminalisation, institutional organisation of financial monitoring and confiscation mechanisms. The materials for this method were the Criminal Code of the Republic of Kazakhstan No. 167 (1997) and Law of the Republic of Kazakhstan No. 191-IV (2009). Singapore's regulations were additionally analysed, Corruption, Drug Trafficking and Other Serious Crimes (1993) (CDSA) and Terrorism (Suppression of Financing) Act (2002) (TSFA). The special legal method was used for doctrinal analysis of the content of legal norms, their systematic interpretation and determination of the internal logic of AML/CFT regulation. The purpose of applying this method was to clarify the legal nature of the obligations of financial monitoring entities, the correlation of criminal and financial regulatory instruments, and the legal consequences of integrating assets into legal circulation.

The case study method was used to analyse the practical impact of legal norms on criminal practices of money

laundering and to test theoretical conclusions on examples of law enforcement. The purpose of using this method was to identify how regulations are implemented in specific situations and how they affect the behaviour of financial institutions and offenders. The empirical basis of the case analysis was the mutual assessment of the AML/CFT system of the Republic of Kazakhstan prepared by the Eurasian Group (Financial Action Task Force, 2023), the materials of the supervisory practice of the MAS – Monetary Authority of Singapore (2025a), and the Singapore Court of Appeals decision in Merlur Binte Ahmad v Public Prosecutor (Criminal Motion No. 36, 2024).

The method of comparative legal benchmarking was applied to develop areas for improving the legal regulation and law enforcement practice of countering money laundering in the Republic of Kazakhstan, considering the experience of Singapore. The study was based on open sources and officially published materials, which limits the ability to analyse latent aspects of criminal practices. In addition, the comparison focused on the two jurisdictions, which did not allow for universal generalisations, but provided depth for institutional analysis.

Results and Discussion

Legal regulation of anti-money laundering in Kazakhstan and Singapore

Legal regulation of countering money laundering is an element of the national policy in the field of ensuring financial security and countering economic crime. It establishes regulatory conditions within which prohibited behaviour is defined, criminal liability for the legalisation of proceeds obtained by criminal means is established, and mechanisms for preventing the use of the financial system for illegal purposes are consolidated. In this sense, legal regulation performs not only a punitive, but also a preventive function aimed at reducing the attractiveness of financial crimes by increasing the risk of their detection and punishment (Durguti *et al*., 2023).

The generally accepted anti-money laundering model is based on a combination of criminalisation of relevant acts, a financial monitoring system, and a set of preventive measures (Isaac *et al*., 2020). Criminalisation provides an opportunity to bring to justice not only for the primary crime, but also for further concealment or disguise of the illegal origin of income, which expands the tools of law enforcement agencies. Financial monitoring, in turn, is aimed at early detection of suspicious transactions by assigning special responsibilities to financial institutions and other entities defined by law. Preventive measures, in particular, mandatory identification and verification of clients, identification of ultimate beneficial owners, are aimed at complicating the use of financial institutions to conceal the illegal origin of funds and their further legalisation in official economic circulation.

The regulatory framework for countering money laundering in the Republic of Kazakhstan (RK) is built as an integral system of legal norms, which combines criminal law provisions on responsibility for the legalisation of criminal proceeds and special financial and regulatory legislation aimed at their prevention and detection. This design corresponds to the generally recognised international AML/CFT model and provides a distinction between repressive and preventive elements of legal regulation. The basic legislative act in the field of countering money laundering is the Law of the Republic of Kazakhstan No. 191-IV (2009). It is this law that forms the regulatory basis for financial monitoring, defining the concept, principles, and tools of preventive counteraction to the legalisation of criminal proceeds. Its significance lies in the fact that it does not focus on punishing a criminal offence already committed but establishes mandatory rules of conduct for participants in financial and property transactions to prevent the use of the financial system to conceal the illegal origin of funds. In international analytical documents in Law of the Republic of Kazakhstan No. 191-IV (2009), the Financial Action Task Force (2023) is explicitly defined as the central element of the national AML/CFT system.

The second system-forming regulation is the Criminal Code of the Republic of Kazakhstan No. 167 (1997), in which money laundering is fixed as an independent crime. Liability for the legalisation (laundering) of money and/or other property obtained by criminal means is provided for in Article 218 of the CC RK. The normative significance of this article is to establish a criminal law ban on actions aimed at giving illegal income the appearance of legal origin, concealing its true source or masking the movement of the relevant property. Thus, the criminal legislation fixes the limits of socially dangerous behaviour and creates legal grounds for bringing the perpetrators to justice, and for applying procedural measures related to the seizure and confiscation of assets.

The category of money laundering in the legal system of Kazakhstan has a two-level character, reflecting the different functions of criminal and financial legislation. In the criminal legal sense, money laundering appears as a crime, the composition of which is described through specific actions with illegally obtained funds or property and a mandatory sign of awareness of their criminal origin. This approach makes it possible to criminalise not only the complete integration of illegal income into the legal economy, but also actions aimed at concealing their origin. In financial and legal terms, on the contrary, money laundering is considered not as an established crime, but as a risk that must be identified and neutralised at an early stage. The Law of the Republic of Kazakhstan No. 191-IV (2009) uses the categories of "countering the legalisation of proceeds" and "financial monitoring", establishing the obligation to prevent the financial system from being involved in illegal schemes even before a criminal offence has been proven.

In the anti-money laundering system in the Republic of Kazakhstan, the range of financial monitoring subjects and the scope of their responsibilities are determined by the Law of the Republic of Kazakhstan No. 191-IV (2009). The legislator applied a functional approach, according

to which the subjects of financial monitoring include organisations and persons whose activities are related to the conduct of financial transactions or operations with property, and which can potentially be used to legalise criminal proceeds. This category includes financial organisations, in particular banks, organisations that carry out certain types of banking operations, insurance companies, participants in the securities market, and other entities of the non-financial sector defined by law, in respect of which the obligation of financial monitoring is established. The main procedural obligation of financial monitoring entities is to submit reports to the authorised body on transactions subject to financial monitoring, and on suspicious transactions regardless of their amount, if, based on a combination of indicators, they may be related to the legalisation of criminal proceeds or the financing of terrorism. This mechanism ensures the inclusion of the private sector in the preventive control system and provides an information basis for further analysis and response by the state. The scope of obligations of financial monitoring entities in Kazakhstan is clearly defined and is aimed at implementing the preventive component of AML/CFT. The law imposes on them the obligation to identify and verify clients and their representatives, identify ultimate beneficial owners, apply a risk-based approach to establishing and maintaining business relationships, and constantly monitor financial transactions. An important element of these responsibilities is documenting relevant information, storing it within a certain time frame, and ensuring that authorised bodies can access such data within the framework of the law.

Institutional coordination of financial monitoring in Kazakhstan is entrusted to Financial Monitoring Agency of the Republic of Kazakhstan (n.d.), which performs the functions of the national financial intelligence unit. The agency provides reception and analytical processing of messages from financial monitoring entities, forms generalised financial intelligence materials and transmits them to law enforcement agencies in cases provided for by law. Thus, the regulatory model of financial monitoring in Kazakhstan is based on a combination of the responsibilities of the private sector and the centralised analytical function of the state body, which corresponds to the generally accepted international architecture of AML/CFT.

The regulatory framework for countering money laundering in Singapore is formed as a consistent system of criminal law and financial regulation aimed at preventing, detecting, and stopping the legalisation of proceeds from crime. As in Kazakhstan, this system is based on the international AML/CFT model but is characterised by a clearer functional distinction between the criminalisation of money laundering and preventive financial control, and a high degree of centralisation of regulatory powers. The criminal law basis for combating money laundering in Singapore is the Corruption, Drug Trafficking… (1993) Act. This law prohibits any transactions or other actions with property in cases where a person knows or has grounds to suspect that such property is a benefit from criminal activity. A special feature of CDSA is that the criminalisation of money laundering is directly combined with the legal regime for the seizure and confiscation of criminal proceeds. As a result, the legislator focuses not only on punishing the very fact of legalising illegal funds, but also on eliminating the economic basis of criminal activity by depriving offenders of the benefits received. Along with the CDSA, Singapore's AML/CFT legislative core is the Terrorism (Suppression of Financing) Act (2002), which regulates countering the financing of terrorism. The TSFA criminalises the provision or collection of funds for terrorist purposes and also provides mechanisms for freezing the assets of individuals and organisations associated with terrorist activities. Together, the CDSA and TSFA form a complete criminal law model that covers both money laundering and terrorist financing, ensuring the regulatory integrity of AML/CFT regulation.

The financial and regulatory level of countering money laundering in Singapore is primarily focused on preventing and early detection of risky financial transactions. The central role in this block is played by Monetary Authority of Singapore (n.d.), which has the authority to develop mandatory regulatory standards and monitor their compliance. The main regulatory tool is the mandatory Notices Monetary Authority of Singapore (n.d.), which detail AML/CFT requirements for financial institutions depending on their sector of activity. For each category of entities, separate regulations are established that consider the specifics of the relevant financial services and risks. For banks, such a basic act is Monetary Authority of Singapore (2025b), which defines responsibilities for identifying and verifying customers, identifying ultimate beneficial owners, assessing risks, continuously monitoring operations, storing information, and reporting suspicious transactions. Similar in structure, but sectorally adapted Notices apply to other financial institutions, including non-bank financial companies, insurance organisations, market intermediaries and payment services, which ensures the unity of regulatory standards, provided that industry-specific features are taken into consideration.

In Singapore's legal system, the definition of money laundering is functionally delineated. In the criminal law dimension, it is implemented through the description of prohibited actions in Corruption, Drug Trafficking… (1993), where the key elements are the presence of knowledge or reasonable suspicion of the criminal origin of property and the commission of actions aimed at its use, concealment, or disguise. In the financial and regulatory dimension, money laundering is considered not as a proven crime, but as a potential risk to the financial system. Accordingly, the MAS regulations do not establish the elements of a crime but define standards of appropriate conduct for financial institutions to detect and block suspicious financial flows until the criminal law qualification. The subjects of AML/CFT control in Singapore are financial institutions and other legally defined categories of entities that are required to comply with the regulatory requirements of the Monetary Authority of Singapore (n.d.).

Their responsibilities include implementing internal policies and procedures, managing risks, training personnel, maintaining records, and reporting suspicious transactions. Institutional model of AML/CFT in Singapore is based on the delineation and coordination of powers between the financial regulator and law enforcement agencies. MAS regulates and oversees compliance with AML/CFT requirements in the financial sector (Financial Action Task Force, 2025), while the functions of financial intelligence are assigned to the Suspicious Transaction Reporting Office (n.d.) (STRO), which ensures the reception, processing and analytical processing of reports of suspicious transactions with the subsequent transmission of relevant information to the competent law enforcement agencies.

Thus, the analysis of the legal regulation of money laundering in Kazakhstan and Singapore indicates the development in both countries of comprehensive AML/CFT models that combine the criminalisation of money laundering with a system of financial monitoring and institutional control. Differences in regulatory techniques, methods of criminalisation, the nature of regulatory requirements, and the distribution of powers between state bodies determine different conditions for the functioning of preventive and repressive mechanisms (Table 1).

Table 1. Comparative characteristics of the legal regulation of money laundering in Kazakhstan and Singapore

Comparison criteria	Kazakhstan	Singapore
General AML/CFT model	Two-tier model that combines a criminal ban on money laundering with a centralised financial monitoring system. Legal impact is realised mainly through standardised procedural requirements	Two-level model with a combination of criminalisation and sectorally differentiated financial regulation. Legal impact is fragmented by sector, but more intense by depth of control
Criminalisation of money laundering	Money laundering is fixed as an independent crime; criminal liability occurs for actions aimed at money laundering, regardless of the stage of their integration	Criminalisation is implemented through the prohibition of operations with property of criminal origin, which is closely related to the regime of seizure and confiscation of assets
Financial monitoring design	Centralised model with a single authorised financial intelligence body; a legally defined list of subjects and standard responsibilities	Sectoral differentiated model; requirements are detailed through mandatory Notices of the financial regulator, which consider the product, customer and risk profile
Subjects of control	Wide range of financial and non-financial entities whose activities can potentially be used for income legalisation	Licensed financial institutions of various sectors, whose activities are subject to constant supervision by MAS
Scope and nature of entities obligations	Formalised responsibilities for identifying customers and beneficiaries, monitoring transactions, reporting and storing information; emphasis on procedural compliance	Comprehensive compliance requirements that include risk management, ongoing transactional monitoring, internal control, and personal management responsibility
Institutional organisation	Centralised financial intelligence within a government agency that provides data accumulation and retrospective analysis	Functional distribution of powers between the financial regulator (MAS) and the financial intelligence unit (STRO)
Enforcement and sanctions mechanisms	Mainly criminal law and administrative measures applied after detection of violations	Active application of supervisory sanctions, significant financial fines and confiscation of assets as independent instruments of regulatory influence

Source: compiled by the author based on Monetary Authority of Singapore (n.d.), Suspicious Transaction Reporting Office (n.d.), Corruption, Drug Trafficking… (1993), Criminal Code of the Republic of Kazakhstan No. 167 (1997), Law of the Republic of Kazakhstan No. 191-IV (2009)

Table 1 provides a comparative description of the legal regulation of anti-money laundering in Kazakhstan and Singapore, indicating significant differences in AML/CFT models in each country. Kazakhstan uses a centralised system with clearly defined responsibilities of entities and more formalised control procedures, which creates certain barriers to flexibility in the market. Singapore, on the other hand, offers a more flexible, sectorally differentiated model that allows requirements to be tailored to different financial sectors and reduces the risks of regulatory bias. However, Singapore also has a clear focus on the effective application of confiscation mechanisms and tough sanctions, which allows for more intensive control. Thus, although both countries have two-tier AML/CFT systems, Kazakhstan is focused on procedural compliance, and Singapore is focused on deeper regulation with a focus on real mechanisms for influencing financial institutions. These differences in the design of financial monitoring and legal organisation may have an impact on the overall effectiveness of countering money laundering in each country.

The results obtained are consistent with conclusions of A. AlQudah *et al.* (2025), which in a comparative analysis of the economies of the European Union, the G20, BRICS, and CIVETS, proved that the effectiveness of countering money laundering largely depends on the quality of institutional governance and regulatory coherence of AML systems. The researchers stressed that the formal existence of criminalisation and financial monitoring is not a sufficient condition for effectively curbing illegal financial flows without clear coordination between regulatory and law enforcement agencies. A similar conclusion follows from the study: both Kazakhstan and Singapore have developed complex AML/CFT models, but differences in the distribution of powers and regulatory techniques determine a different balance between preventive and repressive elements. However, the results complement approach by

A. AlQudah *et al.* (2025) demonstrating that not only the level of economic openness, but also the nature of the legal structure of financial monitoring determines the functioning of the AML system.

The results of the study also partially correlate with the results of F.M. Ajide & T.A. Ojeyinka (2024), who analysed the impact of AML regulation on sustainable development in developing countries. Their study showed that excessively strict or formalised AML requirements can create additional regulatory barriers without a proportional increase in the effectiveness of countering financial crimes. The analysis of legal regulation in Kazakhstan confirms this thesis in terms of the risk of formalising preventive procedures, when the implementation of regulatory requirements may become self-sufficient. The study of Singapore shows that the combination of detailed regulatory controls with actual confiscation mechanisms reduces the likelihood of such a regulatory bias, which allows clarifying the conclusions of F.M. Ajide & T.A. Ojeyinka (2024) on the universality of the negative effects of AML-encumbrance.

Individual results of the study correlate with conclusions of I. Ofoeda (2022), who in a global empirical analysis found a link between AML regulation and financial inclusion. The researcher concluded that expanding the obligations of financial monitoring entities may limit the access of certain categories of clients to financial services, especially in jurisdictions with a high level of formalisation of procedures. In the context of this study, a similar risk can be traced in the Kazakhstan model, where centralised financial monitoring and strictly defined responsibilities of control entities can create additional barriers for certain market segments. The Singapore model demonstrates that a sectorally differentiated and risk-based approach allows maintaining a balance between financial inclusion and the effectiveness of AML/CFT regulation, which partially corrects the generalised conclusions of I. Ofoeda (2022). Thus, the results obtained are not only consistent with contemporary empirical studies but also expand them by analysing in detail the role of normative architecture in the development of national AML/CFT systems.

Impact of legal norms on criminal practices of money laundering: A comparative analysis of Kazakhstan and Singapore

Legal norms in the field of countering money laundering perform a function that goes beyond the formal establishment of prohibitions and sanctions. They form a regulatory environment in which subjects of financial crimes assess acceptable and risky ways of money laundering, adapting their behaviour to the requirements of legislation and the practice of its application. In this sense, legal regulation acts not only as a tool for responding to offences already committed, but also as a factor that indirectly affects the choice of strategies, tools and organisational forms of money laundering (Akartuna *et al.*, 2025). This impact is manifested, firstly, in the transformation of the possibilities of committing money laundering, when the introduction of certain legal requirements increases the complexity, cost or risk of using certain financial transactions and channels. Secondly, legal norms affect the incentive system, changing the relative attractiveness of certain methods of money laundering, depending on the probability of detection and legal consequences. Thirdly, regulatory restrictions lead to changes in money laundering instruments, contributing to the reorientation of criminal practices to alternative mechanisms, jurisdictions or financial technologies. For further analysis of the impact of legal norms on criminal practices of money laundering, an analytical model is used that considers the process of money laundering as a sequence of interrelated stages: the introduction of funds into the financial system (placement), their further stratification and masking of origin (layering) and integration into legal economic activity (integration).

The placement stage (introduction of funds into the financial system) is the primary stage of legalisation of criminal proceeds, at which illegal funds first take the form of financial assets or are included in circulation through transactions that can create an initial legitimate financial footprint (Andiojaya, 2025). At this stage, legal norms have the most pronounced preventive potential, since it is here that it is possible to block or significantly complicate further stratification of transactions. In Kazakhstan, the legal impact on the placement stage is mainly concentrated in the financial monitoring legislation, which sets mandatory requirements for identifying customers, verifying ultimate beneficial owners, and reporting suspicious transactions. These rules do not directly prohibit the introduction of funds into the financial system, but they change the conditions for such introduction, since they make it dependent on the passage of formalised procedures for monitoring and recording primary financial information. As a result, legal regulation affects placement not through a direct ban, but through the creation of a regulatory environment in which any initial fundraising is accompanied by an increased risk of their falling into the sphere of financial monitoring. From the standpoint of the impact on criminal practices, this means that in the Kazakhstan model, the key limitation of the placement stage is not a criminal sanction, but the probability of identifying a transaction as suspicious within a centralised financial monitoring system. Since financial monitoring entities are required to form client profiles and correlate financial transactions with established risk indicators, the initial introduction of funds requires compliance with the regulator's expectations regarding "normal" financial behaviour. The mutual assessment of the national AML/CFT system of the Republic of Kazakhstan also notes that the effectiveness of financial monitoring at the placement stage directly depends on the quality of Customer Due Diligence and Enhanced Due Diligence (CDD/EDD) procedures, and on the timely submission of reports of suspicious transactions (Mutual Evaluation report..., 2023). As a result, legal norms affect placement criminal practices indirectly – by narrowing the range of acceptable ways to enter the financial system and

increasing the role of formalised compliance with compliance requirements.

The centralised model of financial monitoring in Kazakhstan forms a specific regulatory effect that is important for behavioural analysis (Financial Monitoring Agency, n.d.). In the context of a significant number of formalised procedures, there is a risk that compliance with the established rules begins to be perceived as a self-sufficient goal, regardless of the actual economic content of operations. In this configuration, the legal impact on the placement stage is manifested as an incentive to focus on formally acceptable behavioural patterns aimed at minimising signs that can be regarded as abnormal. Consequently, the law does not eliminate the possibility of illegal entry of funds into the financial system but transforms it into a form that is more sensitive to procedural control and formalised risk assessment criteria.

In Singapore, the impact of legal regulations on the placement stage has a different logic, due to the combination of preventive financial control with a strict criminal law structure that provides for a real risk of asset confiscation. Criminalisation of transactions with property of criminal origin, combined with advanced mechanisms of seizure and confiscation, means that the initial introduction of funds into the financial system is associated not only with the risk of detection, but also with the risk of loss of the asset itself. Such a legal construction changes the economic feasibility of placement, since the potential losses in the event of detection significantly exceed the purely procedural consequences.

The MAS regulatory requirements detail the rules of conduct of financial institutions depending on the sector, type of financial product, and risk profile of the client. For the placement stage, this means that the intensity of legal pressure is not the same for all channels of entry into the financial system. The choice of a particular financial instrument or institution is accompanied by a different level of verification of sources of funds and the depth of regulatory control, which makes individual channels of initial input of funds more vulnerable to supervisory intervention. This impact of legal regulations on placement practices is illustrated by the supervisory actions of MAS, when in 2025 nine financial institutions, including Credit Suisse, United Overseas Bank, and Union Bank of Switzerland, were fined a total of SGD 27.45 million for violating AML/CFT requirements related to shortcomings in customer risk assessment and transaction monitoring at the initial stage of financial transactions (Monetary Authority of Singapore, 2025a). In the behavioural dimension, this leads to a direct impact of legal norms on the structure of criminal practices, since increasing the regulatory density and risk of sanctions reduces the attractiveness of individual channels of initial input of funds into the financial system.

An additional element of the impact of legal norms in Singapore is the active application of supervisory sanctions for violations of AML/CFT requirements. Such sanctions are used not only as a response to established criminal offences, but also as an independent regulatory tool aimed at ensuring the proper quality of primary control procedures. The Monetary Authority of Singapore (n.d.), which includes the imposition of significant financial sanctions on banks for shortcomings in verifying sources of funds and client risks, indicates that the effectiveness of compliance at the placement stage is considered as a key element of the stability of the financial system. As a result, even potential gaps in primary control are perceived by financial institutions as an area of increased regulatory risk, which increases filtering at the entrance.

Comparative analysis showed that in both jurisdictions, the law does not eliminate the placement stage but rebuilds its functional architecture. Kazakhstan is dominated by a model in which legal influence is implemented through centralised financial monitoring and standardised procedural requirements that increase the importance of formal compliance with compliance rules. In Singapore, the legal impact is more differentiated and combines detailed sectoral compliance with the real threat of confiscation and supervisory sanctions, which directly changes the economic incentives for the initial introduction of funds.

The layering stage in the classical money laundering model serves to complicate the traceability of illicit funds through multiple financial transactions, changing asset forms, and using intermediate structures (El Harras & Salahddine, 2025). In the legal system of Kazakhstan, the impact on the layering stage is formed primarily through financial monitoring tools, which provide for the obligation to record, store, and analyse information about financial transactions, and through the centralised nature of data processing by the authorised financial intelligence body. Legal norms do not limit the number or complexity of transactions as such, but establish requirements for their documentation, identification of parties, and logical consistency with the client's profile. As a result, layering in the Kazakhstan model unfolds in conditions of increased transactional visibility, where the key risk is not a single operation, but the accumulation of anomalies in the chain of financial behaviour. From a behavioural standpoint, this means that legal norms affect the layering stage by increasing the importance of structural consistency of operations. Since financial monitoring entities are required to constantly monitor business relationships and identify deviations from expected behaviours, multi-stage transactions that do not make obvious economic sense increase the risk of forming a suspicious profile. In this configuration, criminal practices are adapted not by maximising the complexity of schemes, but by formally "equalising" them with typical financial patterns, which again emphasises the procedural nature of legal influence.

The centralised model of financial monitoring in Kazakhstan creates a specific effect of risk concentration. Since analytical processing of information is carried out within a single state body, layering becomes vulnerable not only to initial detection, but also to retrospective analysis (Financial Monitoring Agency, n.d.). This nature of the

legal impact on the layering stage is confirmed by the conclusions. This means that even formally correct transactions can be re-evaluated in aggregate after receiving additional data. Thus, the legal impact on the layering stage in the Kazakhstan model manifests itself as a long-term regulatory pressure that limits the possibility of safe accumulation of complex transaction chains. In Singapore, the impact of legal norms on the layering stage has a different structural logic (Monetary Authority of Singapore, n.d.). Although financial monitoring also plays a key role here, legal regulation combines preventive requirements with strict criminal liability for transactions with property in respect of which there is knowledge or reasonable suspicion of its criminal origin. This design directly changes the risk profile of layering, since each additional transaction not only increases the probability of detection, but also expands the potential volume of assets to be seized or confiscated.

The MAS regulatory standards detail transaction monitoring requirements, considering the type of financial product, the complexity of the client structure, and the cross-border element of transactions (Monetary Authority of Singapore, n.d.). For the layering stage, this means that the legal pressure is differentiated: complex multi-level transactions, especially involving foreign jurisdictions or corporate shells, are automatically subject to increased oversight. In the behavioural dimension, this transforms criminal practices, reducing the appeal of classic multiple "stratification" models and encouraging the search for less obvious but more regulated "quiet" channels. The practice of holding financial institutions accountable for shortcomings in detecting suspicious transactions enhances the preventive effect of legal norms, since it forces financial sector entities to act cautiously at the layering stage. As a result, financial institutions are less likely to serve clients with opaque structures or atypical cash flows, which directly affects the availability of tools for stratification of illegal income.

Comparative analysis showed that in both jurisdictions, the law does not eliminate the possibility of layering but significantly changes its functional role in the overall structure of money laundering. In Kazakhstan, the legal impact is conditioned by the nature of procedural and analytical pressure focused on identifying inconsistencies in the totality of operations. In Singapore, this impact is more stringent and multidimensional, combining sectoral differentiated monitoring with a real threat of criminal and property consequences.

The integration stage in the money laundering model is associated with giving illegally obtained assets the appearance of legal ones by including them in official economic circulation (Monetary Authority of Singapore, n.d.). At this stage, funds or other property cease to interact directly with the financial system in a narrow sense and are integrated into real economic processes – investments, business activities, asset acquisition, project financing. Accordingly, the legal impact on integration focuses not so much on controlling transactions, but on regulating the legitimacy of the origin of assets, the possibility of their further use, and the risk of loss through confiscation mechanisms. In the legal system of Kazakhstan, the influence of norms on the integration stage is formed primarily through a combination of a criminal ban on the legalisation of criminal proceeds and mechanisms for further financial and property control. Criminalisation of the legalisation of proceeds from crime creates a legal basis for challenging the legitimacy of assets even after the completion of complex financial transactions. This means that the integration of funds into formally legitimate economic activities does not guarantee their protection from criminal and legal consequences in the event of establishing an illegal origin. From a behavioural standpoint, this construction changes the logic of integration. Since the risk of criminal liability and confiscation persists even after the inclusion of assets in economic circulation, legal norms encourage the transformation of criminal practices towards formally legal, but economically neutral or ineffective forms of integration. In other words, the law does not block the very possibility of integration but increases the value of the "protective distance" between the asset and its primary criminal origin, which affects the choice of tools and the pace of legalisation. The Kazakhstan model also provides for the possibility of retrospective analysis of assets in criminal proceedings. Even after their formal inclusion in the economy, assets remain vulnerable to further investigation of their origins. In this sense, the legal impact on integration is delayed: the legal consequences may occur much later than the completion of financial transactions. This creates an environment of increased legal uncertainty, in which the integration of assets does not mean the final "completion" of the money laundering process.

In Singapore, the impact of legal norms on the integration stage has a more pronounced property and economic dimension (Monetary Authority of Singapore, n.d.). Criminal law provisions that combine the prohibition of the legalisation of criminal proceeds with broad powers to seize and confiscate assets directly affect the economic feasibility of integration. Assets, even successfully incorporated into legal circulation, may be subject to confiscation if their criminal origin is established, regardless of the form in which they are used. As a result, criminal practices are adapted not by deeper integration, but by limiting the scale or turnover of assets, which reduces the attractiveness of traditional models of long-term legalisation.

This approach to the integration stage is confirmed by Singapore's judicial practice. In the case of Criminal Motion No. 36 (2024), the Court of Appeal examined the issue of collecting the benefits of criminal activity and confirmed that the right to confiscation of assets extends not only to direct profits from illegal acts, but also to property that could be integrated into the economy if it constitutes benefits derived from criminal activity, in the sense of Corruption, Drug Trafficking… (1993). This decision demonstrates that in the Singapore legal model, the integration stage does not confer automatic "legal immunity" to integrated assets even after their formal inclusion into econom-

ic circulation, as they remain the subject of criminal-law consequences and confiscation measures.

Differences in national models of legal regulation, in the ratio of criminal law and financial regulatory instruments, determine the development of different types of criminal practices of money laundering. That is why the comparative analysis of Kazakhstan and Singapore allowed tracing how the specifics of legal norms and mechanisms for their implementation affect the nature, complexity, and adaptability of criminal proceeds legalisation schemes, creating various models of criminal behaviour within the formally joint international standards AML/CFT (Table 2).

Table 2. Comparative characteristics of the impact of legal norms on the stage of money laundering in Kazakhstan and Singapore

Kazakhstan	Singapore
Placement	
Legal impact is concentrated in the financial monitoring legislation, which establishes mandatory procedures for identifying customers, verifying beneficial owners, and reporting suspicious transactions. Criminalisation is not directly aimed at the very fact of depositing funds but creates a high risk of recording abnormal behaviour. In the behavioural dimension, this leads to a focus on formal compliance with compliance requirements and a narrowing of the range of acceptable channels for entering the financial system	Preventive requirements of the AML/CFT are combined with strict criminal liability and the risk of asset confiscation. MAS regulatory standards differentiate the level of control depending on the financial instrument and the client's profile. This changes the economic feasibility of the initial introduction of funds and encourages the avoidance of channels with high regulatory densities
Layering	
Impact of law is implemented through the requirements for documenting, storing, and analytically processing transactions, and through the centralised nature of financial intelligence. Multi-stage operations are evaluated collectively, which increases the value of retrospective analysis. In the behavioural dimension, this encourages schemes to adapt by formally aligning transactions to typical financial patterns instead of making them as complex as possible	The layering stage is under the combined pressure of sectoral differentiated monitoring and a real threat of criminal law and property consequences. Each additional transaction increases not only the probability of detection, but also the potential amount of assets that can be confiscated. This reduces the attractiveness of multi-level transactional structures and changes the structure of criminal practices
Integration	
Criminalisation of income legalisation and the possibility of a retrospective challenge to the origin of assets form a deferred legal risk. Formal integration of assets into business activities does not guarantee their legal stability. In the behavioural dimension, this encourages economically neutral forms of integration that minimise attention from law enforcement agencies	The combination of criminal law provisions with broad confiscation powers preserves a high risk of loss of assets after their integration into legal circulation. Judicial practice confirms that the use of assets in legitimate economic activities does not create legal immunity. This reduces the economic attractiveness of deep integration and transforms incentives at the final stage of money laundering

Source: compiled by the author based on Corruption, Drug Trafficking… (1993), Criminal Code of the Republic of Kazakhstan No. 167 (1997), Law of the Republic of Kazakhstan No. 191-IV (2009)

Thus, legal norms in both jurisdictions not only change the functional logic of the placement, layering and integration stages, but also form specific regulatory risk zones due to the specifics of the regulatory architecture. In the Kazakhstan model, the emphasis on centralised financial monitoring and procedural standardisation of compliance increases the transparency of primary control, while simultaneously creating the risk of formalising compliance, in which complex or atypical transactional configurations may remain out of analytical focus. This situation helps to adapt criminal practices to formal risk assessment criteria without reducing the opportunities for multi-level disguise of funds. In the Singapore model, by contrast, the high detail of sectoral AML/CFT requirements and the strict combination of preventive controls with confiscation and supervisory sanctions increase real regulatory pressure at all stages of money laundering. Such detail objectively creates a risk of regulatory predictability, in which offenders optimise their behaviour for specific regulatory patterns and choose financial instruments or segments with a lower control density. The asymmetry between the level of regulation of different sectors of the financial market leads to a redistribution of criminal activity in favour of less regulated or new financial channels.

Taken together, the comparative analysis showed that legal norms in Kazakhstan and Singapore do not so much eliminate criminal practices of money laundering as redistribute them between stages, tools, and channels, depending on the configuration of regulatory pressure. Differences between these jurisdictions form different "risk ecosystems" in which incentives, costs, and expected con sequences of illegal financial activities vary. It is these structural differences that make it necessary to further analyse the possibilities of improving legal regulation and adjusting AML/CFT policies, taking into consideration the identified regulatory risk zones.

The results obtained are consistent with the conclusions of J. Ferwerda *et al.* (2020), who, based on the gravity model, showed that strengthening national AML regimes does not lead to a decrease in the total volume of money laundering, but causes its spatial and institutional redistribution. The researchers proved that criminal financial flows

gravitate towards jurisdictions or sectors with lower levels of regulatory pressure, which confirms the adaptive nature of criminal practices. A similar mechanism was found in this study: in Kazakhstan, the formalisation of financial monitoring procedures at the placement stage contributes to the shift of criminal activity to segments with a lower control density, while in Singapore, a differentiated sectoral approach changes the economic feasibility of individual channels for depositing funds. The results complement model by J. Ferwerda *et al.* (2020) through a step-by-step analysis of the impact of legal norms on various stages of money laundering.

The results of this study also correlate with the findings of P. Gerbrands *et al.* (2022), which, based on network analysis, demonstrated that AML policies change the structure of financial networks, reducing the intensity of individual nodes, but at the same time stimulating the development of alternative routes. The researchers emphasised that regulatory pressure rarely leads to a breakdown of the money laundering network but instead rebuilds its configuration. Within the framework of the comparative analysis, a similar effect can be traced at the layering stage: in Kazakhstan, legal norms encourage formal alignment of transactions under typical financial patterns, while in Singapore – a decrease in the attractiveness of multi-level schemes due to a combination of monitoring and confiscation risks. Thus, the results obtained confirmed the network logic of the influence of AML norms proposed by P. Gerbrands *et al.* (2022), but they specified it from the standpoint of legal architecture.

However, the results of the study partially differ from the critical approach proposed by P.M. Gilmour (2022), who argued that the current AML system is predominantly focused on formal compliance with procedures and has limited impact on actual criminal practices. The paper emphasised that excessive regulatory detail could lead to "procedural compliance" without a significant deterrent effect. The analysis confirmed this thesis only partially: the Kazakh model really revealed the risk of formalising compliance with requirements, which makes it possible to adapt criminal practices to procedural criteria. The example of Singapore shows that the combination of detailed compliance with the real threat of confiscation and supervisory sanctions significantly increases the behavioural impact of legal norms, which somewhat contradicts the general scepticism expressed by P.M. Gilmour (2022).

In general, the results of the study confirm the opinion that legal norms in the field of countering money laundering do not eliminate criminal practices, but transform their structure, complexity and distribution between the stages of legalisation. A comparative analysis of Kazakhstan and Singapore clarified this approach, showing that the nature of such transformation directly depends on the ratio of procedural financial control and criminal and property consequences. Thus, the results obtained are not only consistent with existing empirical and theoretical studies but also expand them through a deeper analysis of the role of normative architecture in the formation of criminal behaviour.

Areas for improving the legal regulation and practice of countering money laundering in Kazakhstan, taking into consideration the experience of Singapore

The comparative analysis of the impact of legal norms on criminal practices of money laundering in Kazakhstan and Singapore shows that the further development of the national AML/CFT system of the Republic of Kazakhstan may be associated not with a formal expansion of the list of responsibilities of financial monitoring entities, but with the correction of the regulatory architecture in order to increase its behavioural and economic impact. The results obtained indicate that within the framework of the Kazakhstan model, there is a dominant procedural approach, in which compliance with the formal requirements of the Law of the Republic of Kazakhstan No. 191-IV (2009) is not accompanied by a decrease in opportunities for complex and multi-level schemes for legalising criminal proceeds.

In this context, the issue of revising approaches to the implementation of the risk-based approach consolidated in Articles 5 and 6 of the Law of the Republic of Kazakhstan No. 191-IV (2009). An analysis of the current legislation has shown that it establishes the obligation to apply CDD/EDD procedures but does not define clear criteria for evaluating their actual effectiveness in terms of identifying complex transactional structures. Considering the experience of Singapore, a possible area of development is the regulatory clarification of the requirements for assessing client and transaction risks, in particular by fixing in the bylaws of the authorised financial monitoring body the obligation to include not only the formal compliance of operations with the client's profile, but also their aggregate economic content and interrelation within long financial chains. Such a correction can reduce the risk of compliance formalisation, in which criminal practices are adapted to procedural criteria without proportionally reducing regulatory risks.

The comparative analysis also revealed the possibility of strengthening the sectoral differentiation of AML/CFT requirements in Kazakh law. The Law of the Republic of Kazakhstan No. 191-IV (2009) establishes a single framework of responsibilities for a wide range of financial monitoring entities, which ensures the regulatory integrity of the system, but simultaneously creates conditions for redistributing criminal activity into segments with a lower intensity of actual control. Based on the practice of the Monetary Authority of Singapore (n.d.), where AML/CFT requirements are detailed through sectoral regulations depending on the type of financial product and the risk profile of clients, a possible development area for Kazakhstan is the expansion of bylaws, which would provide for increased monitoring standards for transactions with a cross-border element, complex corporate structures, and atypical investment instruments. This approach can reduce the effect of regulatory uniformity and increase the asymmetry of regulatory influence in relation to the riskiest channels.

Improving the mechanisms of legal influence on the integration stage is also important, given the persistence of deferred legal risk in the Kazakh model. Although criminal liability for the legalisation of proceeds from crime is provided for in Article 218 of the Criminal Code of the Republic of Kazakhstan No. 167 (1997), law enforcement practice focuses primarily on proving the completed elements of a crime, rather than systematically challenging the legitimacy of integrated assets. Singapore's experience, particularly the practice of using confiscation mechanisms regardless of the form of further use of assets, indicates the possibility of strengthening the property component of legal influence. For Kazakhstan, this may mean clarifying the norms of criminal and criminal procedure legislation regarding the possibility of confiscation of assets integrated into economic activities, provided that their criminal origin is proved, even in the absence of complex transaction schemes in the late stages of legalisation.

The results of the study also indicate the need to develop the relationship between financial monitoring and supervisory sanctions. In the Singapore model, administrative and regulatory measures are used as an autonomous tool for influencing the behaviour of financial institutions, and not solely as a derivative of criminal prosecution. In the context of Kazakhstan, this actualises the development of the practice of applying sanctions for violating the AML/CFT requirements stipulated by the Law of the Republic of Kazakhstan No. 191-IV (2009), with a focus on systemic deficiencies in risk detection and management, rather than just formal violations of procedures. This approach can help create institutional incentives for meaningful rather than declarative compliance. Together, these areas of improvement indicate that the implementation of certain elements of the Singapore approach in the Kazakh legal system should be carried out considering national institutional specifics and without direct copying of regulatory decisions. The shift from a predominantly procedure-oriented to a more behaviourally sensitive model of AML/CFT regulation may limit the ability to adapt criminal practices to formal requirements and increase the regulatory impact of legal regulations at all stages of money laundering.

The results obtained regarding the dominance of the procedural approach in the Kazakhstan AML/CFT model are consistent with the conclusions drawn in the study by C. Friedrich & R. Quick (2019). Analysing the German non-financial sector, these researchers concluded that the expansion of formal responsibilities of AML entities without simultaneously strengthening their economic and behavioural orientation leads to the formalisation of compliance and a decrease in its preventive effectiveness. Similar to the situation found in Kazakhstan, C. Friedrich & R. Quick (2019) recorded the adaptation of illegal practices to standardised CDD/EDD procedures, which is not accompanied by a significant reduction in the risks of money laundering. Moreover, the results of this study complement their conclusions, focusing not only on the institutional behaviour of financial monitoring subjects, but also on the normative architecture as an independent factor in reproducing procedural inertia.

Conclusions about the need to strengthen sectoral differentiation of AML/CFT requirements correlate with the results of the study by G.L. Schiavo (2022), dedicated to a comparative analysis of supervisory mechanisms within the European Union. The researcher emphasised that a unified legal framework without considering the specifics of financial products and risk profiles of clients creates gaps in actual supervision and promotes regulatory arbitration. A similar effect of normative uniformity can be traced in the Kazakhstan model, where a single framework of responsibilities contributes to the redistribution of criminal activity into segments with a lower intensity of control. However, in contrast to the accent of G.L. Schiavo (2022) on supranational institutional contradictions, the results of this study focus on the potential of bylaws as a tool to increase the asymmetry of regulatory influence without violating the regulatory integrity of the national system.

The results on the limited effectiveness of the criminal law response at the integration stage generally confirmed the empirical conclusions obtained by C. Tuhirirwe & R. Alexander (2025) in a study of countries assigned to the "grey list". The researchers demonstrated that the formal compliance of national legal systems with international FATF standards does not reduce the scale of money laundering in the absence of effective mechanisms of property influence and autonomous supervisory sanctions. Similar to the situation in Kazakhstan, in the jurisdictions they have studied, law enforcement practice focuses mainly on proving the completed elements of a crime, while integrated assets often remain outside the scope of systemic challenge. The results of this study extend approach of C. Tuhirirwe & R. Alexander (2025), demonstrating that the combination of confiscation mechanisms with regulatory sanctions inherent in the Singapore model can reduce deferred legal risk even without a radical revision of criminal law. Together, a comparison of the results obtained with the presented studies confirmed that the increase in the effectiveness of AML/CFT regulation is not associated with a quantitative increase in formal responsibilities, but with a qualitative transformation of regulatory influence. The transition to a more behaviourally and economically sensitive model, as tested in Singapore, is consistent with contemporary scientific approaches and simultaneously considers the institutional constraints of the Kazakh legal system.

Conclusions

Based on the results of the analysis, it was found that the legal regulation of countering money laundering in Kazakhstan and Singapore is based on the two-level AML/CFT model, which combines the criminalisation of money laundering and the financial monitoring system with a preventive focus. In Kazakhstan, money laundering is legally consolidated as an independent crime. This allows clearly distinguishing between the criminal and financial levels of regulation, while creating the risk of formalised

compliance with regulatory requirements by private sector entities. Singapore has a different regulatory framework in which criminalisation of money laundering is implemented through a ban on transactions with property of criminal origin, combined with a developed regime for the seizure and confiscation of assets, while preventive control is provided by sectoral differentiated regulatory requirements of the Monetary Authority of Singapore. Functional differentiation between the financial regulator and the financial intelligence unit and detailing the responsibilities of financial institutions through special Notices, create a more flexible regulatory environment, while increasing the risk of adapting money laundering schemes to complex and highly detailed compliance rules.

It was revealed that Kazakhstan is dominated by a model of procedural legal influence, in which the key constraints at the placement and layering stages are centralised financial monitoring, formalised application of CDD/EDD procedures, and the possibility of retrospective analysis of transactions and assets. This model increases the transparency of primary control, but also creates the risk of formalising compliance, which encourages the adaptation of criminal practices to formal risk assessment criteria without eliminating the possibility of multi-level masking of funds. In Singapore, the legal impact on criminal practices is more differentiated and rigid, combining sectoral detailed financial monitoring with the real threat of criminal law and property consequences, particularly the confiscation of assets at all stages of money laundering. It was established that law enforcement practice under Article 218 of the CC RK focuses mainly on proving the completed elements of a crime, which forms a deferred legal risk at the integration stage and limits the property component of legal influence.

It was established that improving the effectiveness of the AML/CFT system of the Republic of Kazakhstan should be carried out by moving from a predominantly procedural-oriented to a more behaviourally sensitive regulatory model, with the development of autonomous supervisory sanctions and a focus on systemic risks. This approach limits the adaptive potential of criminal practices to formal requirements and enhances the real regulatory impact of legal norms at all stages of money laundering. The prospects for further research relate to an empirical analysis of how sectoral differentiated AML/CFT requirements, the use of RegTech solutions, and autonomous supervisory sanctions affect the transformation of criminal money laundering practices at the layering and integration stages in the context of cross-border financial flows.

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The author independently developed the research concept and methodology, collected and systematised legal sources and analytical materials on AML/CFT regulation in Kazakhstan and Singapore. He conducted the comparative legal analysis, examined the impact of legal norms on money laundering practices at the placement, layering, and integration stages, and substantiated recommendations for improving Kazakhstan's AML/CFT regulation.

Conflict of Interest

None.

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Models of restorative justice in Central and East Asia

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Abstract. The purpose of the study was to identify and investigate gaps in the restorative justice system in Kazakhstan. The methodology of the study was based on a comparative legal analysis of the legislative framework, practices of mediation, probation, and juvenile justice of three countries (Kazakhstan, Japan, and South Korea) using the historical and legal method for investigating traditional institutions of Kazakhstan and content analysis of international and national documents. The findings showed that Kazakhstan's restorative justice system has significant gaps in the use of pre-trial mediation, specialised programmes for minors, and the integration of public institutions. It was found that as of July 2025, 27,762 people were registered with the probation service in Kazakhstan, which indicates the active use of this institution, but requires strengthening through the involvement of social workers and public initiatives, such as "advisers for social reintegration" in Japan. Policies implemented in Japan and family conferences for minors practised in South Korea offer effective mechanisms for expanding the use of restorative practices. It was established that the institutions of aksakals and biys, which have a historical role in reconciliation, can be integrated into contemporary models, strengthening the legitimacy and cultural acceptability of restorative justice. The conclusions emphasised that Kazakhstan needs to amend its legislation to clearly define the limits of application of reconciliation, and to develop state programmes for training qualified mediators, which will help to reduce recidivism and humanise criminal justice. The practical significance of the results obtained is to provide specific tools for reforming Kazakhstan's criminal justice system aimed at reducing recidivism, humanising punishments, and improving the effectiveness of social reintegration. These recommendations can be used by the Ministry of Justice, the Supreme Court, the Prosecutor General's Office, and local authorities

Keywords: mediation; probation; serious crimes; recidivism; penitentiary system; aksakals and biys

Introduction

The criminal justice system around the world faces significant challenges, among which the problems of recidivism and chronic overcrowding in penitentiary institutions are becoming increasingly problematic. Criminal justice systems, in particular, those that have inherited the features of the post-Soviet period, have faced the ineffectiveness of traditional punitive approaches in addressing such complex issues as recidivism and overcrowding in penitentiary institutions. This situation has led to the need to rethink and humanise justice, which has led to the active introduction of more effective models, in particular restorative justice. In this context, restorative justice, with its focus on reconciliation between the victim and the offender, compensation for the damage caused and comprehensive re-socialisation of the perpetrator, becomes relevant. It offers an alternative paradigm that seeks not only punishment, but also the restoration of social peace and justice.

The effectiveness of restorative justice programmes is confirmed by numerous scientific studies. For example, a meta-analysis conducted by S. Syahwami & H. Hamirul (2024) found a statistically significant reduction in recidivism, is particularly noticeable among young people who followed the principles of restorative justice. This demonstrates the potential of restorative justice in reducing the number of repeat offences and its special prospects in working with juvenile delinquents. In addition, research by M.M. Gunawan *et al.* (2024) showed that criminal mediation as a form of restorative justice is successfully applied in various countries, such as Indonesia, the United States, Germany, Poland, and Switzerland, adapting to national legal and socio-cultural conditions.

The Republic of Kazakhstan, having inherited the specifics of criminal justice of the post-Soviet period, is actively implementing reforms of its criminal justice system and the penitentiary system. This transformation is a response to the growing need to humanise and improve the effectiveness of justice. Research by E.I. Isibayeva (2024) illustrated the complexity of the challenges faced by people released from prison, pointing out the biased attitude of society, significant difficulties in finding employment, finding housing, and starting a family. Z.T. Abdukarimova *et al.* (2024) in their analysis of the prevention of extremism and terrorism in the penitentiary system of Kazakhstan, although noted a general decrease in the level of relevant crimes due to a combination of state and public measures, they identified a persistent problem of public distrust of state actions and an urgent need for increased transparency. Research by A. Askarbekkyzy *et al.* (2025) further points to the profound problem of victimisation of prisoners in penal institutions caused by social stigmatisation, the influence of the criminal subculture, inadequate protection of rights, and discrimination on ethnic and religious grounds. The researchers emphasised that the most vulnerable groups are young prisoners, members of minorities, persons with disabilities, and those convicted of sexual crimes. In these internal challenges of Kazakhstan, the study and adaptation of international experience in the field of restorative justice is becoming even more relevant. M. Kossay *et al.* (2025) in their comparative study of the effectiveness of the juvenile diversion system in Indonesia, Malaysia, and the Philippines, showed that Indonesia and Malaysia achieved levels of effectiveness through strong legal regulation, a focus on recidivism prevention, and active social reintegration. These examples show that effective restorative justice models can significantly improve the functioning of criminal justice.

Kazakhstan, with its unique socio-cultural resources based on historically established conflict resolution institutions (in particular, biy courts and councils of elders), has the prerequisites for integrating restorative justice. M.Zh. Kalshabayeva *et al.* (2024) detailed the historical tradition of conflict resolution through the institutions of "biler soty" and the council of elders, whose activities were based on the principles of justice, humanity, and a deep desire for reconciliation. They stressed that the key idea of "Дау мұраты – бітім" ("The purpose of the dispute – reconciliation") has a direct hereditary connection with the contemporary practice of mediation in Kazakhstan. These traditional institutions can serve as a solid foundation for restorative practices. There is also a certain crisis of traditional mediation in the international arena, as shown by A.A. Raimbekova (2024) on the example of the war in Ukraine, which reveals the vulnerability of international law and the low effectiveness of classical mediation models in the context of geopolitical changes.

Thus, considering both global and national challenges, in particular, the growing need to humanise criminal justice, reduce recidivism and optimise penitentiary systems, there are significant gaps in the scientific array: there is no comprehensive systematic comparative analysis of the adaptation of advanced models of restorative justice to the unique socio-cultural and legal context of Kazakhstan. The purpose of this study was to analyse the functioning of the restorative justice system in Kazakhstan. The objectives of the study were to identify adapted elements of East Asian models, integrate traditional Kazakh conflict resolution institutions, and identify the necessary legislative and institutional changes for their implementation.

Materials and Methods

The study was based on mixed-methods research design, which combines comparative legal analysis and qualitative content analysis. The analysis covered the time frame from 2007 to 2025, focusing on current legislation and statistics from 2024-2025. To ensure reliability, the materials (data) were selected according to the criteria of relevance (direct relation to restorative justice, mediation, probation) and reliability (official government, judicial, and international sources). Data collection was carried out by monitoring open legal bases, government portals, and academic repositories.

The comparative legal method and content analysis were applied to the main array of analysis units, which

included the national legislation of Kazakhstan: Constitution of the Republic of Kazakhstan (1995), Law of the Republic of Kazakhstan No. 401-IV (2011), Code of the Republic of Kazakhstan No. 518-IV (2011), Penal Code of the Republic of Kazakhstan No. 226-V (2014), Criminal Procedure Code of the Republic of Kazakhstan No. 231-V (2014), Law of the Republic of Kazakhstan No. 38-IV (2016), Law of the Republic of Kazakhstan No. 72-VIII (2024) and amendments to legislative acts concerning the education, information and culture system (Law of the Republic of Kazakhstan No. 153-VIII, 2025). Including sources describing the experience of Japan and South Korea, official Japanese documents included: JFBA – Japan Federation of Bar Associations (n.d.a; n.d.b; 2024), Mediation Committee (n.d.), Looking at crime… (n.d.), Ministry of Justice of Japan (n.d.), Act of Japan No. 88 (2007), Report on the verification... (2020). Korean sources include Rules for Handling Juvenile Affairs No. 376, (2007) and the Act of the Republic of Korea No. 17505 (2020). The content analysis method has also been used to identify key concepts and principles of restorative justice in international instruments, in particular, the reports of the United Nations Office on Drugs and Crime (2020; 2022a; 2022b; 2024). These sources have been used to understand global trends in recidivism reduction, restorative justice programmes, and penitentiary system reforms. Additionally, the papers Associated Press (2024) and D. Adilbekov (2024) from Human Rights Watch and Voice of America were used to understand the social context of Kazakhstan and current legal events. To investigate the socio-cultural background, the historical and legal method was used to study the genesis of traditional institutions (biys and aksakals) by analysing relevant scientific publication (Kenzhebekova, 2024). Ultimately, statistical analysis was applied to Kazakhstan's quantitative data collected from official reports, in particular probation data (Information about persons..., 2025) and statistics of the Statistics on mediation in Kazakhstan (n.d.) and the Supreme Court of the Republic of Kazakhstan (2025). This analysis included the calculation of coefficients (per 100 thousand population) using the equation: (number of people on probation / total population of the region) * 100,000 to identify regional imbalances that allowed for a quantitative assessment of the current state of mediation and probation in the country.

Results

Analysis of contemporary models of restorative justice in the legal system of Kazakhstan

The introduction and development of restorative justice models in the legal system of the Republic of Kazakhstan reflects global trends in the humanisation of criminal justice and orientation towards conflict resolution through reconciliation and reintegration. This approach is a departure from the purely punitive paradigm that historically prevailed in the post-Soviet space, and corresponds to the fundamental principles laid down in the Constitution of the Republic of Kazakhstan (1995). In particular, this refers to the protection of human and civil rights and freedoms (Article 1) and ensuring fairness in justice (Article 13). Although the term "restorative justice" may not be explicitly consolidated as a separate concept in all regulatory acts, its essential elements and principles are actively being integrated through the development of mediation and probation institutions and the expansion of opportunities for reconciliation between parties in criminal proceedings. This indicates a gradual but consistent transformation of approaches to criminal justice aimed at improving its effectiveness not only in punishing offenders, but also in restoring social peace, justice, and the well-being of victims. Legislation of Kazakhstan, in particular, the Penal Code of the Republic of Kazakhstan No. 226-V (2014) (for example, articles 65, 66, 68, 69 providing for exemption from criminal liability and conditional conviction under certain conditions) and the Criminal Procedure Code of the Republic of Kazakhstan No. 231-V (2014) (articles 35, 36, 37, 38, 529, rules governing reconciliation of the parties, refusal of criminal prosecution for reconciliation and conclusion of procedural agreements), provides for a number of mechanisms that are closely intertwined with the ideas of restorative justice. This is, in particular, the possibility of exemption from criminal liability in connection with reconciliation with the victim. This mechanism applies to persons who have committed crimes of small and medium gravity, subject to full compensation for the damage caused and the mandatory consent of the victim. It demonstrates the priority of compensating for the victim's harm and restoring social harmony over unconditional punitive punishment of the offender, subject to active dialogue, and mutual agreement between both parties to the conflict.

The institute of mediation, officially established by the Law of the Republic of Kazakhstan No. 401-IV (2011), is one of the central elements of the restorative paradigm. This law provides an opportunity for the parties to the conflict, with the assistance of a neutral and impartial mediator, to independently reach a mutually acceptable solution, including compensation for the damage caused and restoration of broken relations. Mediation is particularly relevant for cases involving minor and moderate offences, and for family and domestic conflicts, labour disputes, and civil cases, where maintaining social ties and establishing dialogue between the parties is a priority. Since the adoption of this law, further initiatives to improve it have been observed in Kazakhstan, in particular, issues of expanding the list of cases where mediation is mandatory and raising the status of mediators were discussed (Law of the Republic of Kazakhstan No. 153-VIII, 2025). These legislative changes reflect the constant search for ways to improve the effectiveness of mediation procedures. In practice, the introduction of mediation in Kazakhstan faces a number of systemic challenges that require comprehensive solutions. According to a sociological survey conducted by the Association of Mediators of the Republic of Kazakhstan, one of the problems is the lack of awareness of the population about the essence of mediation, its advantages and principles

of functioning. The survey results show that almost half of all respondents (45.3%) who have had experience interacting with the judicial system do not know anything about mediation as a way to resolve disputes. Only 15.9% of respondents have already used the services of a mediator and are ready to choose this form of conflict resolution in the future. People who have a general understanding of conciliation procedures are often unaware of key aspects, such as the legal force of a mediation agreement or that it is a quick way to resolve a dispute (Statistics on mediation in Kazakhstan, n.d.). This low awareness, compounded by poor coverage of the issue in legal publications and the media, is a barrier to wider application of restorative practices.

There is also an objective need for further development of the professional institute of mediators. Although there are 371 professional and 4,465 public mediators registered in Kazakhstan, the problem lies in professional development, specialised training and certification of specialists, and in creating effective mechanisms for monitoring their activities that would meet international standards of quality and ethics (Statistics on mediation in Kazakhstan, n.d.). Although there are no comprehensive and up-to-date metrics for mediation coverage, the available data allow identifying certain trends and gaps. As of 2018, according to the Ministry of Internal Affairs of the Republic of Kazakhstan, the number of criminal cases terminated by mediation has increased to 9,607 (compared to only two cases in 2011), which indicates a significant expansion of practice after the adoption of the Law of the Republic of Kazakhstan No. 401-IV (2011). However, this figure needs to be compared with the total number of small and medium-sized cases to estimate the actual share of coverage. For comparison, in civil proceedings in the same year 2018, only 4% of 871 thousand cases were terminated due to mediation. As of July 2025, there was no single main structure that would implement a single policy in the field of mediation, maintain a register, issue permits, set uniform standards and tariffs, and certify training centres, which negatively affects the quality of training of mediators. In addition, there is a problem of increasing confidence in mediators and awareness of their role as independent, impartial facilitators, which are not part of the state punitive system, but are designed to promote dialogue and reconciliation.

Nevertheless, the latest data of Supreme Court of the Republic of Kazakhstan (2025) for the first half of 2025 indicate a significant positive trend in the application of conciliation procedures. As noted by Supreme Court President Aslambek Mergaliev, the growth in conciliation procedures amounted to 46.9% compared to 41.6% for the same period last year. Of the more than 113,000 media claims and cases (107,000), almost half were resolved through alternative means, which indicates the high potential of this tool to unload the judicial system and increase the satisfaction of parties to conflict in civil proceedings. These figures demonstrate not only the expansion of the scope of mediation to various categories of disputes, including even some administrative offences and investment disputes, but also emphasise its universality and restorative impact on public relations. It was also noted that the increase in the return of claims by 3% is associated with reconciliation and withdrawal of the claim, which in most cases is the actual exhaustion of the dispute (Supreme Court of the Republic of Kazakhstan, 2025). These positive trends in reconciliation reflect a strategic focus on out-of-court conflict resolution, which strengthens the principles of restorative justice. The analysis revealed three key gaps in the mediation institute. First, there is a gap in awareness, the institution is unknown to the target audience. Second, the institutional gap the lack of a unified state structure for certification and quality control reduces the trust and qualifications of mediators. Third, the data gap in the criminal sphere, despite the success in civil proceedings, there are no up-to-date metrics for covering criminal cases (data for 2018 are outdated).

Another important component that has restorative elements is the probation system. The Law of the Republic of Kazakhstan No. 38-IV (2016) defines probation as a comprehensive system of social and legal measures. These measures are implemented in relation to persons convicted without deprivation of liberty, or those who have been released from criminal liability with a probationary period, in order to re-socialise them, prevent the commission of new crimes, and ensure the safety of society. Although probation is primarily educational and controlling in nature, its focus on providing social, psychological, legal, and other assistance to convicts, and on active work with their immediate environment and society, contains significant restorative potential. It is aimed at correcting offenders not through isolation, but through active work with them directly in society, which contributes to their successful reintegration into society, minimising stigma and, as a result, helps to significantly reduce recidivism. Data on the number of persons registered with the probation service indicate the active use of this institution in the regions of Kazakhstan (Information about persons..., 2025). In particular, in the largest cities and regions of the country, there is a significant number of such individuals. This is reported in more detail in Table 1, which represents the distribution of persons registered with the probation service in all regions and cities of national significance, including their percentage share of the total number.

Table 1. Distribution of persons registered with the probation service in the regions of Kazakhstan (as of July 11, 2025)

Region	Number of persons registered with the probation service	Total population in the region	Number of people on probation per 100 thousand population
Akmola region	1,283	788,155.0	162.8
Aktobe region	1,363	954,014.0	142.9
Abai region	684	598,000.0	114.4

Continued Table 1

Region	Number of persons registered with the probation service	Total population in the region	Number of people on probation per 100 thousand population
Almaty region	3,515	1,583,478.0	222
Almaty	2,653	2,332,397.0	113.8
Astana	2,633	1,601,490.0	164.4
Atyrau region	1,039	713,933.0	145.5
East Kazakhstan region	1,023	720,615.0	142
Jambyl region	1,471	1,217,729.0	120.8
West Kazakhstan region	1,121	695,774.0	161.1
Karaganda region	1,823	1,132,162.0	161
Kostanay region	1,050	822,711.0	128
Kyzylorda region	999	846,068.0	118.1
Mangystau region	952	815,058.0	116.8
Pavlodar region	1,321	747,064.0	177
North Kazakhstan region	817	516,650.0	158.1
Shymkent city and Turkestan region	3,615	2,147,757.0	168.3
Total in Kazakhstan	27,762	20,426,568	136

Source: created by the author based on Statistics on mediation in Kazakhstan (n.d.), Information about persons... (2025)

Analysis of Table 1 data reveals significant regional differences in the relative use of probation. The rate of people on probation per 100 thousand population varies almost twice: from the lowest rates in Almaty city (113.8) and Abay region (114.4) to the highest in Almaty region (222). Regions with the highest absolute number of cases, such as the Turkestan region with the city of Shymkent (3,615 people), do not have the highest coefficient (168.3). For example, Almaty city, with the third largest absolute number of registered individuals (2,653), showed one of the lowest relative indicators, which is significantly lower than the national average (136). The city of Astana has a coefficient (164.4), which is significantly higher than the average. Such significant differences between regions indicate the lack of uniform standards in judicial practice.

In addition to official legislative mechanisms that integrate elements of restorative justice, Kazakhstan has historically also had informal conflict resolution practices based on the centuries-old traditions of the Kazakh people. These traditions are a socio-cultural resource that can significantly enhance the effectiveness of contemporary recovery models. The Institute of biys (traditional judges) and aksakals (respected elders) has played a key role in resolving disputes through reconciliation for centuries, considering not only customary law (adat), but also deep moral and ethical norms and social cohesion of the community (Kenzhebekova, 2024). Their activities were based on the principles of informal dialogue, compromise, admission of guilt, compensation for damage, and restoration of broken social ties. The goal was not so much to punish as to restore broken harmony in the community and prevent further conflicts. Despite the fact that these institutions no longer have direct legal force in the contemporary legal system of the Republic of Kazakhstan, their fundamental principles – open dialogue between the parties, voluntary compensation for damage caused, the desire for mutual reconciliation, and the restoration of peace in relations – can be effectively incorporated into models of restorative justice, especially at the local and regional levels. Involving reputable members of the community, such as aksakals, in mediation processes or probation programmes can significantly strengthen their legitimacy, increase public confidence in these procedures, and ensure greater acceptability of solutions for the parties to the conflict. This will make effective use of traditional social capital to improve the overall effectiveness of restorative practices, promoting the harmonisation of official law with customary norms and cultural traditions, and providing a deeper understanding and support for ideas of restorative justice at the grassroots level. Thus, the main socio-cultural gap was identified. Although these traditional institutions have high authority and trust, they are not formally integrated into legal mediation or probation procedures. Traditional social capital is not used to improve the effectiveness of restorative justice at the grassroots level.

Thus, the development of restorative justice in Kazakhstan requires further strengthening and solving existing problems. In particular, there are legislative and practical restrictions on the use of mediation in cases of serious and especially serious crimes. The high-profile court hearing in the case of the murder of Saltanat Nukenova, which was widely covered by Voice of America (Associated Press, 2024), highlighted the problems of domestic violence and the sensitivity of conflicts that cannot always be effectively resolved through mediation, especially when it comes to serious consequences and violations of fundamental rights. This case prompted President Kassym-Jomart Tokayev to sign a bill that toughens penalties for violence against spouses, known as the "Saltanat Law". Officially named Law of the Republic of Kazakhstan No. 72-VIII (2024), introduces significant changes to the Penal Code of the Republic of Kazakhstan No. 226-V (2014) and the Code of the Republic of Kazakhstan No. 518-IV (2011). In particular, it provides for the criminalisation of

intentional infliction of minor harm to health (Article 108-1) and beatings (Article 109-1), which previously could be considered as administrative offences. Responsibility for driving to suicide, inducing or facilitating suicide has also been significantly strengthened, especially if such actions are committed against a minor (Article 105). The law also introduces the concept of "crimes related to violence against minors" (paragraph 18-1) of Article 3 of the Penal Code of the Republic of Kazakhstan No. 226-V (2014) and restricts the use of reconciliation of the parties in such cases (part 4 of Article 68). The main one is the introduction of "special requirements for the behaviour of a person who has committed a criminal offence" (Article 98-3 of the Penal Code of the Republic of Kazakhstan No. 226-V, 2014), which allows the court to establish prohibitions on prosecution, contact with the victim and other restrictive measures. In addition, a support infrastructure is being created – the Contact Centre "111" and Family Support Centres (articles 5-1, 67-1 of the Code of the Republic of Kazakhstan No. 518-IV, 2011), which will provide social, legal, psychological assistance and temporary residence to victims of domestic violence. These changes indicate a shift in the focus of legislation from the possibility of reconciliation in difficult cases to the inevitability of responsibility and strengthening the state protection system. To further improve the situation, it is necessary to review the Law of the Republic of Kazakhstan No. 401-IV (2011), expanding its provisions on mandatory training and certification of mediators, and establish uniform standards for the quality of services that comply with the recommendations of the United Nations Office on Drugs and Crime (2020) regarding professionalisation. This will increase confidence in the mediation Institute and its effectiveness. In addition, the Criminal Procedure Code of the Republic of Kazakhstan No. 231-V (2014) should be improved to more clearly define the criteria and limits for applying reconciliation of parties in cases of varying severity, minimising the risks of reoffending crimes, as discussed in the context of reducing recidivism at the international level (Commission on Crime Prevention and Criminal Justice, 2022; United Nations Office on Drugs and Crime, 2024). Despite these difficulties, Kazakhstan shows a clear trend towards integrating restorative approaches into its legal system, supported and monitored by UNODC (United Nations Office on Drugs and Crime, 2022a) within the framework of programmes for the region (United Nations Office on Drugs and Crime, 2022b). Expanding the scope of mediation, further developing the institution of probation and introducing specialised rehabilitation programmes for minors based on the principles of reconciliation and re-socialisation are promising ways to deepen the reform of criminal justice.

Adaptation of the experience of restorative justice in Japan and South Korea in Kazakhstan

Japan's experience in the field of restorative justice is integrated into public consciousness and legal practice, based the deep cultural concepts of "chyova" (調和 – harmony) and "omiyari" (おもいやり – understanding, compassion). These concepts are at the heart of the Japanese approach to conflict resolution, which prefers reaching agreement, reconciliation, and restoring social ties over the strict application of formal law (Looking at crime…, n.d.). Instead of focusing on punishment, the Japanese system seeks to restore relations broken by crime. One of the key tools is the widespread use of mediation and reconciliation, often even at the pre-trial stage. Even in criminal cases, especially minor and moderate ones, there is a significant emphasis on "apologies and compensation". The victim of a crime has the opportunity to meet with the offender, express their feelings, and receive compensation for damages. This process often involves a neutral intermediary or even a police officer who facilitates the dialogue. If the offender sincerely repents, compensates for the damage and achieves reconciliation with the victim, this can be considered by the prosecutor's office as grounds for refusing criminal prosecution or by the court when passing a more lenient sentence. United Nations Office on Drugs and Crime (2020) highlights the universality of such practices for restoring justice. The Japanese system provides for several key documents and practices, the essence of which is manifested, in particular, in the law on speeding up legal proceedings (Japan Federation of Bar Associations, n.d.a). This law, adopted in 2003, aims to ensure that first-instance judgements are delivered in civil cases, usually within two years. Although its main focus is on civil proceedings, the philosophy of this law and its impact on the judicial system have broader implications that indirectly affect both the criminal sphere and the promotion of out-of-court settlement, including elements of restorative justice. The purpose of the law on speeding up legal proceedings is not just speed, but "fair, proper, and complete proceedings" that are carried out promptly. This shows the understanding that speed should not be achieved at the expense of quality or fairness.

The Japan Federation of Bar Associations (n.d.b) actively monitors compliance with this law by establishing a "Committee on the Law for the Acceleration of Judicial Proceedings" and sending its representatives to the "Meeting on the Review of the Acceleration of Judicial Proceedings" at the Supreme Court of Japan. The Supreme Court, in turn, publishes two-year "Reports on the acceleration of legal proceedings" (Report on the verification..., 2020), the first of which was issued in 2005, and the last – in 2020. The Japan Federation of Bar Associations (2024) regularly issues "Opinions" in response to these reports, emphasising the importance not only of speed, but also of the relevance and completeness of judicial proceedings to guarantee citizens' rights, and the need to strengthen the judicial system (human and material resources). This emphasis on "proper and complete" proceedings, along with speed, creates an enabling environment for the development of alternative dispute resolution methods, including mediation and reconciliation. When the system strives for efficiency but does not sacrifice quality, it looks for ways to relieve the courts without restricting access to justice. Out-of-court

mechanisms, such as mediation, ensure this speed and efficiency, while allowing the parties to reach a mutually acceptable solution, which is often more restorative than a court-imposed solution. Thus, while the Japan Federation of Bar Associations (n.d.a) formally deals with civil cases, its principles contribute to a general shift in Japan's legal culture towards greater use of out-of-court methods involving conciliation commissions and other mechanisms (Mediation Committee, n.d.), which are an integral part of the philosophy of restorative justice. There is also a "Non-prosecution policy" – a well-established practice in Japan that gives prosecutors broad discretion to refuse criminal prosecution, considering reconciliation with the victim and reparation. This policy is part of a broader strategy in which the prosecutor's office plays a role in preventing recidivism and resocialisation.

According to the document "Prosecutors' efforts to prevent recidivism" (Ministry of Justice of Japan, n.d.), Japanese prosecutors are involved in the process from investigation to execution of the sentence, considering the prospects for correcting the person. In light cases, if there are conditions for improving behaviour (for example, providing housing or work), a deferred charge may be applied. Even with a suspended sentence, prosecutors may require protective supervision if the risk of recidivism is high.

This strategy works closely with the correctional and probation system regulated by the Act of Japan No. 88 (2007), which focuses on the reintegration and support of offenders. Prosecutors provide information to penitentiary institutions and probation services for effective supervision. In cases where released persons need social support, the prosecutor's office cooperates with probation authorities, local authorities and support centres to provide housing and social services. To strengthen these initiatives, specialised departments are being created, social workers are being engaged, and cooperation between departments is being strengthened. United Nations Office on Drugs and Crime (2022a) highlighted the importance of penitentiary and probation reform for many countries. A specific example of cooperation: if a prosecutor releases a suspect without accommodation or an elderly person on deferred charges, he or she promptly informs the probation authorities. Probation services, considering the circumstances, assess the need for social support (housing, assistance) and coordinate actions with other institutions. The prosecutor's office employs "social reintegration advisers" – social workers who assess the needs of released persons for social support and coordinate the receipt of services. This contributes to successful reintegration and prevention of recidivism.

A key element of the Japanese system is informality and community orientation, where local communities, relatives, or authority figures often play a role in promoting reconciliation. This may be useful for Kazakhstan, where institutions of aksakals and elders have a similar function (Kenzhebekova, 2024). The adaptation of the Japanese model for Kazakhstan will require changes to the Criminal Procedure Code of the Republic of Kazakhstan No. 231-V (2014) and the Law of the Republic of Kazakhstan No. 401-IV (2011) to expand pre-trial mediation. It is also necessary to develop guidelines for law enforcement agencies and courts to consider reconciliation and reparation as mitigating circumstances. The creation of regional mediation and probation support centres with the involvement of aksakals will integrate traditional values. The development of training programmes for mediators and law enforcement officers, considering the cultural characteristics of Kazakhstan, in particular, the importance of preserving the face and the role of the family, is the main component, considering the need for professionalisation, which is mentioned by United Nations Office on Drugs and Crime (2020).

South Korea also has a well-developed restorative justice system, especially in the field of juvenile justice. Their approach often focuses on "family conference models" and "group meetings", which are a direct embodiment of recovery principles. In these models, the perpetrator, victim, their families, and sometimes members of the community or police come together to discuss the crime, its consequences, and ways to repair the harm. The main goal is not punishment, but understanding, empathy, responsibility, and rebuilding relationships. Specific South Korean documents and practices that support these models include the Act of the Republic of Korea No. 17505 (2020), which is the basis for applying restorative justice to minors. This law provides for the possibility of dismissing the case from the court and referring it to the so-called "juvenile reconciliation commissions" or "rehabilitation conferences". The South Korean Prosecutor's Office is actively implementing restorative justice programmes, which may include direct or indirect meetings between the victim and the offender, where the parties discuss the harm and ways to compensate for it. This is complemented by guidelines and the law on working with juvenile offenders (Rules for Handling Juvenile Affairs No. 376, 2007), which encourage the use of informal procedures and mediation, with a focus on re-socialisation and relapse prevention. United Nations Office on Drugs and Crime (2020) emphasised the importance of developing targeted programmes for young people. Key features of the South Korean model that can be adapted for Kazakhstan include an emphasis on juvenile justice. Instead of being isolated, young people are given the opportunity to realise their responsibility to the victim and society, repair the damage, and reintegrate into society. This is directly related to Kazakhstan's initiatives to improve work with juvenile delinquents (Adilbekov, 2024) and the desire to provide them with a second chance.

Models of family conferences and group meetings, where the facilitator helps all participants speak out, hear each other and reach consensus on a recovery plan, will be effective for Kazakhstan, with its family and clan ties. This will involve not only direct participants in the conflict, but also their relatives, which is the main thing for supporting and monitoring the implementation of agreements. Individualised recovery plans, which include not only material

reparations, but also apologies, community service, participation in training programmes, psychological assistance, and other measures aimed at rehabilitating the offender and restoring the victim, are better than standard punishments. The effectiveness of such meetings will depend on the qualifications of the facilitators, so Kazakhstan can develop specialised training programmes for mediators, social workers, and psychologists who will work in these models, focusing on the skills of active listening, empathy, conflictology, and cultural sensitivity, which is in line with the United Nations Office on Drugs and Crime (2020) recommendations for professionalisation. For a full understanding of the potential for adaptation of the East Asian experience in Kazakhstan, Table 2 provides a comparative analysis of the main practices of restorative justice in Japan and South Korea, including specific recommendations for their implementation in Kazakhstan's legal and socio-cultural context.

Table 2. Comparative analysis and recommendations for Kazakhstan on adaptation of restorative justice models in Japan and South Korea

Comparison aspect	Japan (main practices)	South Korea (main practices)	Recommendations for Kazakhstan (context-sensitive)
Cultural foundations	"chyova "(harmony), "omiyari" (understanding), focus on reconciliation and restoring social ties.	Strong family ties, collectivism, and a focus on reconciliation and community reintegration, especially for young people.	Actively use the institutions of aksakals and biys to legitimise and root restorative practices that resonate with the traditional values of "кешірім" (forgiveness) and "татулacy" (reconciliation).
Mechanisms at the pre-trial stage	Broad application of "apologies and compensation", a non-harassment policy based on reconciliation and reparation.	Victim-offender mediation programmes, juvenile reconciliation commissions, and early-stage cases.	Expand pre-trial mediation for minor and moderate offences, develop clear guidelines for prosecutors on taking reconciliation and compensation into account as grounds for terminating proceedings.
Focus on juvenile justice	There is a present but less pronounced emphasis on structured "family conferences" compared to Korea.	Central role in the "Law on juvenile justice". Models of "family conferences" and "group meetings" for minors.	Develop specialised restorative juvenile justice programmes, including family conference models, with a focus on responsibility, reconciliation, and community involvement in reintegration.
Probation and resocialisation	"Law on probation and protection", cooperation of the prosecutor's office with probation authorities and social services, "advisers on social reintegration".	Similar probation programmes with a focus on individualised re-socialisation plans and community support.	Strengthen the institution of probation by integrating social workers (modelled on "social reintegration advisers"), and ensure cooperation with local communities and educational institutions to support released persons.
Professionalisation and training	Established practices, although without a single centralised structure for mediators. The prosecutor's office has social security specialists.	Advanced training and certification systems for facilitators for rehabilitation conferences.	Creation of a single centralised structure for training and certification of mediators and facilitators of restorative justice, setting quality standards, as recommended by UNODC.
Legislative changes (proposals)	Adaptation of the principles of the "Law on speeding up legal proceedings" for unloading courts through out-of-court settlement.	Implementation of mechanisms for dismissing cases from court based on restorative conferences, as provided for in the Juvenile Act.	Amendment of the Code of Criminal Procedure and the Law "On mediation", clearly defining the limits of the application of reconciliation and mediation in cases of varying severity, and strengthening the legislative framework for probation with a restorative potential.

Source: created by the author based on sources Looking at crime... (n.d.), Ministry of Justice of Japan (n.d.), Japan Federation of Bar Associations (n.d.a), Act of Japan No. 88 (2007), Rules for Handling Juvenile Affairs No. 376 (2007), Law of the Republic of Kazakhstan No. 401-IV (2011), Criminal Procedure Code of the Republic of Kazakhstan No. 231-V (2014), Law of the Republic of Kazakhstan No. 38-IV (2016), Act of the Republic of Korea No. 17505 (2020), United Nations Office on Drugs and Crime (2020; 2022b), Zh.K. Kenzhebekova (2024)

Adaptation of the experience of Japan and South Korea in Kazakhstan should be based on joint work between innovative approaches and national traditions. Institutions of biys and aksakals that have historically played the role of conciliators and moral authorities (Kenzhebekova, 2024) can be integrated into contemporary restorative justice programmes. For example, they can act as honorary facilitators in group meetings or provide mentoring support to juvenile delinquents as part of probation programmes. This will not only strengthen the legitimacy of such programmes in the eyes of local communities, but also ensure cultural acceptance, which is fundamental to their success. One of the key areas of adaptation is the development and implementation of specialised programmes of restorative justice for minors. These programmes should focus on early intervention, the application of restorative practices at the earliest possible stages of conflict; on responsibility, helping minors to understand the consequences of their actions; on reconciliation with the victim, creating safe spaces for dialogue; and on active community engagement, involving schools, parent committees, and youth organisations. In addition, it is important to expand awareness-raising not only on mediation, but also on broader concepts of restorative justice, explaining their benefits to society as a whole. This can be

implemented through educational programmes in schools, universities, and through targeted media campaigns that consider the cultural specifics of Kazakhstan. Cooperation with UNODC in the framework of the Programme for Central Asia 2022-2025 (United Nations Office on Drugs and Crime, 2022b) can provide the necessary methodological support and resources for the implementation of these initiatives. Thus, Kazakhstan has a unique opportunity to combine its historical experience of informal conflict resolution with the best international practices of restorative justice, especially those successfully tested in Japan and South Korea. This will create an effective and culturally appropriate system that will contribute not only to reducing crime and recidivism, but also to building a more just, harmonious and cohesive society where conflicts are resolved through dialogue, responsibility, and recovery.

Further development and improvement of the restorative justice system in Kazakhstan requires not only internal legislative changes and strengthening of existing institutions, but also a strategic view of international experience. East Asian countries, particularly Japan and South Korea, set an example as their restorative justice systems successfully combine modern legal approaches with deep-rooted cultural traditions of conflict resolution. This experience is particularly relevant for Kazakhstan, given the existence of its own informal traditions of reconciliation, such as the institutions of biys and aksakals, which have already been discussed as an important socio-cultural resource. Adapting models from Japan and South Korea can provide Kazakhstan with unique tools for improving the effectiveness of restorative justice, especially in the context of reducing recidivism, which is a priority for UNODC, as noted in the Commission on Crime Prevention and Criminal Justice (2022) and United Nations Office on Drugs and Crime (2024). Thus, the further development of the restorative justice system in Kazakhstan requires specific legislative changes based on a strategic analysis of international experience. To improve the effectiveness of the system and reduce recidivism, it is also necessary to expand prosecutor's discretion according to the Japanese model, making changes to Article 68 of the Penal Code of the Republic of Kazakhstan No. 226-V (2014) (Dismissal... in connection with reconciliation) to allow its application at the pre-trial stage by the prosecutor (and not just by the court), subject to full redress. Also integrate "family conferences" based on the experience of South Korea into the Law of the Republic of Kazakhstan No. 401-IV (2011), creating a separate, mandatory protocol for cases involving minors. Formalise community participation by integrating traditional institutions (aksakals) into the Law of the Republic of Kazakhstan No. 38-IV (2016) as official public advisers, similar to the Japanese "social reintegration advisers".

Discussion

The results obtained, which relate to the potential of adapting the models of restorative justice of Japan and South Korea in Kazakhstan, highlight a number of key aspects that are of significant theoretical and practical importance. In particular, the implementation of recommendations based on the cultural, pre-trial, juvenile, probation and legislative aspects of East Asian models can significantly transform Kazakhstan's criminal justice system. These findings are consistent with a broad international discourse on the need to decolonise criminology and search for alternative, more contextually sensitive approaches to justice, which was highlighted by P. Yu & J. Liu (2024). Their study analysed the dominance of Western approaches and demonstrates how the contribution of Asian criminology, in particular the theoretical developments of P. Yu & J. Liu, enriches the discipline and restores the balance of knowledge. The recommendations of this study on Kazakhstan are based on an in-depth analysis of the Asian experience, are a contribution to this process of "decolonisation" of criminological thought, offering not just copying, but adaptation based on local characteristics. An analysis of the cultural foundations of restorative justice in Japan and South Korea, with their emphasis on harmony, understanding, and collectivism, has shown that these principles have deep parallels with the traditional values of Kazakh society. The proposal of this study to actively use the institutions of aksakals and biys to legitimise and root restorative practices correlates with the study by A.I. Hamzani *et al.* (2025), who described the traditions of restorative justice in Indonesian Muslim society. Their findings showed that traditions based on the principles of collective discussion and agreement are deeply rooted and can become the basis for the future implementation of restorative justice, even in criminal cases against life. This confirms that in Kazakhstan, as in Indonesia, cultural characteristics can serve as a solid foundation for the introduction of restorative approaches, ensuring a more equitable and conciliatory resolution of conflicts.

As for pre-trial mechanisms, the analysis in this study of Japanese reconciliation and reparation policies, and South Korean victim-offender mediation programmes, highlights the potential for expanding pre-trial mediation for small and medium-level offences in Kazakhstan. This is consistent with the research by O.T. Cao & T. Van Vu (2024), who analysed models of restorative justice as a tool for active participation of victims in criminal proceedings and reducing recidivism. They found that approaches such as mediation between the victim and the offender effectively combine punishment with reconciliation. This conclusion is one of the most important for Kazakhstan, where, as the experience of Vietnam shows, which faces similar challenges in shaping its judicial system, such models can be adapted to create more flexible and humane mechanisms for responding to crimes. The development of clear guidelines for the prosecutor's office to consider reconciliation as grounds for termination of proceedings is a direct application of these international practices.

The focus on juvenile justice, which is central to South Korea with its models of "family conferences" and "group meetings" for minors, is relevant to Kazakhstan. The recommendations of this study for the development of

specialised restorative juvenile justice programmes are consistent with the Campbell systematic review protocol developed by H. Gaffney *et al.* (2024). Their study was aimed at evaluating the effectiveness of restorative justice programmes in reducing crime and recidivism among children and young people, emphasising the importance of considering the characteristics of participants and the conditions for implementing interventions. This demonstrates the global trend of recognising restorative justice as an effective tool in working with young people.

The analysis of this study on probation and resocialisation highlights the need to strengthen the institution of probation in Kazakhstan through the integration of social workers, such as "social reintegration advisers" in Japan, and cooperation with local communities. These findings are confirmed by I. Amarini *et al.* (2024), who analysed the development of the concept of social reintegration through the use of restorative justice in criminal proceedings in Indonesia. They confirmed that the success of social reintegration is possible only if the community, the state and law enforcement agencies work closely together. This means that the effectiveness of probation is not limited only to control, but also includes the active involvement of a wide range of social actors. Application of restorative justice in the penitentiary system, as demonstrated by the systematic review by L. Perrella *et al.* (2024) that covered the use of mediation and rehabilitation conferences in prisons, has a positive impact on developing conflict management skills, improving interpersonal relationships, and increasing the responsibility of offenders. This underlines that restorative justice is not exclusively a pre-trial tool, but can be successfully integrated into all stages of the criminal process, including serving a sentence.

From the standpoint of legislative changes, this study highlighted the need to modify the Code of Criminal Procedure and the Law of the Republic of Kazakhstan No. 401-IV (2011) to clearly define the boundaries of the application of reconciliation and mediation in cases of varying severity. This suggestion correlates with the conclusions of C.F. Yudhatama & E.Q. Pangestika (2024), who analysed the ineffectiveness of deprivation of liberty in solving crimes against property in Indonesia and suggests applying compensation to the victim as the main punishment. Their study showed that this approach may be more effective in compensating victims than traditional incarceration. Similarly, research by X. Zhang & J. Zhang (2024) on the application of restorative justice in environmental crime cases in China demonstrates that completely replacing conventional justice with restorative justice is unrealistic, but combining them can provide positive results. This means that Kazakhstan's legal system must find an optimal balance between punitive and restorative elements, which will increase its effectiveness and fairness.

In addition, it is important to consider the growing role of digital technologies in justice. The study by P. Romero-Seseña (2025) on the use of the online environment in rehabilitation mediation during the pandemic in Europe identified both positive opportunities (accessibility, security) and limitations (reduced quality of interaction). This indicates that Kazakhstan should develop digital tools for restorative justice, while ensuring the preservation of the quality of interaction and safety of participants. Additionally, L. van Schilgaarde (2024) analysed how tribes in the United States are implementing models of restorative justice based on indigenous traditions to restore jurisdiction and improve well-being, illustrating the potential for a return to traditional institutions in justice. This highlights that the use of aksakal and biy institutions in Kazakhstan is not just a revival of the past, but a strategic step towards creating more equitable and legitimate justice systems that consider the unique cultural heritage. The study by G. Li *et al.* (2025) on the role of the digital economy in ensuring energy equity, although relevant to a different industry, demonstrated that technological development can contribute to resource reallocation and cost reduction, which is one of the main factors for supporting probation and re-socialisation programmes. Thus, the results obtained have established that Kazakhstan has a unique opportunity not only to borrow the best practices of restorative justice, but also to organically integrate it with its own deep-rooted cultural traditions. This will create a hybrid model that is both modern, efficient, and culturally sensitive.

Conclusions

The conducted research revealed significant gaps in the restorative justice system of Kazakhstan and substantiated the relevance of adapting advanced models of Japan and South Korea. The purpose of the study – investigating and identifying gaps, and developing practical recommendations – was fully achieved through a comprehensive comparative analysis of the legislative framework, mediation, probation, and juvenile justice practices in the countries under study, and based on the historical and cultural context of Kazakhstan. Key results showed that the probation system shows almost twofold regional imbalances (from 113.8 to 222.0 per 100 thousand population) and a fundamental lack of data on recidivism. The institute of mediation notes low public awareness, the lack of a single certification body, and outdated data on criminal cases (as of 2018). As a result of the first task, it was found that the most relevant and adapted elements of East Asian models for Kazakhstan are: deep rooting of restorative practices in cultural values (emphasis on harmony and reconciliation), which has parallels with Kazakh traditions; a developed system of pre-trial mediation and non-prosecution policy in Japan; specialised programmes of restorative justice for minors in South Korea (family conferences); integration of social workers and public initiatives into the probation system. The second task, which concerned the substantiation of ways to integrate Kazakhstan's traditional conflict resolution institutions, was also successfully completed. It was established that the institutions of aksakals and biys, which have historically played a key role in resolving disputes based on the principles of justice and reconciliation,

can be effectively involved in models of restorative justice. Their authority and deep knowledge of the local context will ensure legitimacy and promote widespread adoption of community-based rehabilitation practices, strengthening the social reintegration of offenders and support for victims. Regarding the third task – identifying the necessary legislative and institutional changes – the study offers specific recommendations. It is necessary to amend the Code of Criminal Procedure and the Law "On mediation" to clearly define the limits of application of reconciliation and mediation in cases of varying severity, and to expand the powers of mediators. In addition, it is important to create specialised probation units to work with minors and ensure their integration with public organisations and educational institutions. It is recommended to develop state training programmes for qualified mediators and social workers who can effectively implement the principles of restorative justice.

The limitations of the study lie in its theoretical nature. The study was also limited to analysing the experience of only two East Asian countries, which may not reflect the full range of restorative justice options. Areas for further research include: conducting pilot projects on the implementation of adapted models of restorative justice in certain regions of Kazakhstan; empirical assessment of their effectiveness through quantitative and qualitative indicators (recidivism rate, victim satisfaction, dynamics of social reintegration); developing detailed training programmes for mediation and probation specialists; studying public opinion on restorative practices and cultural barriers to their implementation.

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Conflict of Interest
None.

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Human trafficking in Myanmar and cooperation within ASEAN: Sexual exploitation and forced labour in the construction sector

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Abstract. The aim of the study was to examine the development and extent of human trafficking problems in Myanmar during 2010-2025. The methodology included a theoretical analysis of the concept of human trafficking and the factors that cause this phenomenon, a documentary analysis of legal documents, and a comparative analysis of international reports on Myanmar, which allowed comparing the legal framework, enforcement mechanisms, and regional cooperation. Human trafficking has been studied as a complex phenomenon that encompasses forced labour and sexual exploitation and is carried out through the recruitment, transportation, and use of persons against their will. It has also been established that its prevalence is caused by poverty, economic and social vulnerability, unequal access to education and social services, conflicts, political instability, and inadequate legal protection. The situation in Myanmar in 2019-2023 was analysed, where 1,105 complaints about forced labour were recorded, of which 707 (≈64%) were resolved, 23 children were released, and 18 military personnel were brought to justice. Data on 418 Rohingya refugees who suffered abuse was summarised, of whom 70.1% were men, 29.6% were women, and 0.3% were non-binary persons; In 86% of cases, forced labour prevailed, and in 87% of cases, recruitment was carried out through promises of employment, most often by neighbours, strangers, and acquaintances. It was concluded that effective counteraction to human trafficking requires a combination of national and international measures to criminalise exploitation, complaint mechanisms, training of law enforcement officers and prosecutors, awareness-raising campaigns, and interstate coordination, and international documents form standards for the protection of victims and coordination of investigations, strengthening cooperation between countries to detect, prevent, and prosecute such crimes. The results of the study can be used by government and international organisations to develop policies, programmes to protect victims, and improve mechanisms to combat human trafficking in Myanmar

Keywords: counteraction mechanisms; victims; operational practices; protection of victims; international reports

Introduction

The relevance of the topic is conditioned by the fact that human trafficking in Myanmar combines human rights violations with transnational migration processes and shadow labour markets, where sexual exploitation and forced labour remain the riskiest, in particular in the construction industry. Socio-economic inequality, armed conflict, internal displacement, and labour migration increase the vulnerability of the population to recruitment, debt dependence, fraudulent employment, and exploitation, and extending these practices beyond state borders makes them difficult to detect and prosecute. The problem of the study is the limited consistency of legal norms and practical counteraction mechanisms between the countries of the region, which weakens the protection of victims and the effectiveness of investigations in cross-border cases. In these circumstances, cooperation within ASEAN (Association of SouthEast Asian Nations) is of key importance as a tool for policy coordination, regulatory harmonisation, and joint response of law enforcement and social services to trafficking-related crimes.

Theoretical approaches to human trafficking analysis are based on understanding the interaction of consent, coercion, and fraud. Researchers have thoroughly investigated this problem, offering various scientific approaches and interpretations that reflect the multidimensional nature of the phenomenon of human trafficking and different views on the mechanisms of its occurrence and reproduction. For example, J.S. Albanese *et al.* (2023) showed that a victim's formal consent to migration or employment masks hidden forms of coercion, debt dependence, and manipulation. Formal consent occurs when the victim officially agrees to migration or employment without realising the actual pressure, debt obligations, or manipulation that effectively restricts their freedom of choice. Further, R. Andrijasevic (2021) expanded the understanding of forced labour through an analysis of global supply chains, highlighting the intersection of labour exploitation, migration, and gender inequality. Forced labour includes forms that include physical or psychological coercion, restriction of the employee's freedom, debt dependence, threat of punishment, and manipulation to force them to perform work against their will. The issue of sexual exploitation is closely linked to child trafficking. D. Nazer & J. Greenbaum (2020) stressed that children from regions of armed conflict and poverty are vulnerable to sexual exploitation, including commercial sexual violence. This is conditioned by a combination of economic vulnerability, lack of protection and social support, which leads children from conflict regions to exploitation and violence.

Labour exploitation of migrants in construction has much in common with other forms of forced labour. The experience of agricultural migrants was analysed by J.S. Norwood (2020), who identified universal risks associated with lack of legal protection, language barriers, and dependence on employers. In practice, this is conditioned by the exploitation of migrants by employers who restrict their rights, manipulate wages and working conditions, and language barriers and lack of legal protection do not allow them to effectively defend their interests. Comparative studies from Central Asia add to the understanding of institutional approaches to combating human trafficking. The study by A. Khamzin *et al.* (2022) emphasised the importance of interstate coordination, criminal law mechanisms, and prevention. In practice, this works through joint investigations, the exchange of information between law enforcement agencies, and the implementation of crime prevention programmes. The effectiveness of combating trafficking in persons increases if national strategies are aligned with regional initiatives and the institutional capacity of responsible bodies is strengthened. N. Gloss *et al.* (2025) demonstrated that effective counteraction is possible only if economic, social, and legal instruments are combined. Such an integrated approach helps to reduce the vulnerability of migrants and increases the coherence of states' actions in preventing labour and sexual exploitation. The role of media in shaping public understanding of human trafficking was revealed by H.K. Tekare (2025), who showed that the choice of narratives affects political priorities and public support for anti-work measures. This includes information campaigns, publications, thematic reports, and educational programmes aimed at raising public awareness, developing a critical attitude towards human trafficking and stimulating support for relevant political and human rights activities. Conceptual approaches to modern slavery proposed by R. Weitzer (2020) and J. Winterdyk & J. Jones (2020) allowed viewing human trafficking in Myanmar as part of a global exploitation system where regional cooperation acts as a response tool. It was established that regional cooperation includes coordination of interstate bodies, exchange of information, joint human rights initiatives, and coordinated measures to combat human trafficking to improve the effectiveness of the response to exploitation within the region.

Despite the aspects highlighted by the above researchers, there are still gaps in scientific discourse regarding the comprehensive analysis of human trafficking in Myanmar in combination with ASEAN regional cooperation mechanisms. The relationship between sexual exploitation and forced labour in the construction sector has been studied to a limited extent considering cross-border migration and informal labour markets. Insufficient attention was paid to evaluating the practical effectiveness of ASEAN joint initiatives in preventing the exploitation of migrants and protecting victims. The purpose of the study was to analyse the problems of human trafficking in Myanmar in the period 2010-2025. The objectives of the study were: to analyse theoretical approaches to the interpretation of the concept of human trafficking and systematise the factors that determine its occurrence; to carry out a documentary analysis of international and regional regulatory and analytical sources on human trafficking and forced labour; to analyse key

international reports to assess the scale of the phenomenon and the effectiveness of counteraction mechanisms.

Materials and Methods

The study covered the period 2010-2025. The methodological basis was: theoretical analysis of scientific approaches to the definition of human trafficking and systematisation of factors of its spread; documentary analysis of international and regional legal acts; comparative analysis of key international reports by IndustriALL Global Union (2025), V. Mishra (2025) on the situation in Myanmar. Using theoretical analysis of H. Stöckl *et al.* (2021), R. Rupita *et al.* (2025), the concepts of human trafficking, forced labour in construction, and sexual exploitation were investigated, their content characteristics were revealed, and the relationship between these phenomena as complementary forms of exploitation was established. Within the framework of this analysis, the key factors of the spread of human trafficking in the world were systematised. The criteria for selecting sources were theoretical validity and relevance to the concepts of human trafficking, forced labour, and sexual exploitation.

Using the method of comparative analysis, the processes of sexual exploitation and forced labour in construction were compared. The criteria for the analysis were the phenomenon, the mechanism for its implementation, the main risks, barriers to detection, and the need for regional cooperation to protect victims. The documentary analysis covered the norm and procedure criteria, the ASEAN document, the tools through which they are implemented, and the gaps in the selected documents. A chronological comparison of approaches in the period 2010-2025 with a distinction between before and after the implementation of ACTIP (Anti-Corruption and Transparency Initiative for the Pacific) allowed recording step-by-step changes in the use of response tools and monitoring approaches, tracking the evolution of practices without evaluating their effectiveness. Materials included: UNODC – United Nations Office on Drugs and Crime (2022), IOM – International Organisation for Migration (2023), United States Department of State (2010; 2023; 2024), ASEAN-Australia Counter Trafficking (2024; 2025). In addition, a structural and functional analysis was performed.

The categories of analysis were the type of tool or mechanism, application to a particular form of operation, implementation tools (coordination, training, standardised procedures, indicators, monitoring), and existing gaps or areas of reinforcement. The analysis was based on documents from Association of Southeast Asian Nations (2014; 2015; 2021), ILO – International Labour Organisation (2017; 2021; 2022), and the United Nations Office on Drugs and Crime (2017; 2020). Additionally, materials from Karen Human Rights Group (2017), and United States Department of State (2025a; 2025b) were used. These sources were chosen because of the authority, relevance, and complexity of the coverage of the problem. The analysis covered aspects of international policy, legal framework, regional cooperation, enforcement and protection of victims, statistics and monitoring of cases, and local evidence and specific cases of exploitation. Based on the analysis of the above-mentioned international sources, recommendations were formulated to combat sexual exploitation and forced labour, which cover comprehensive measures of prevention, protection of victims, law enforcement, and international cooperation.

Results

Sexual exploitation and forced labour in construction: Mechanisms, risks, and barriers to detection. Human trafficking includes forced labour and sexual exploitation as interrelated forms of exploitation carried out through the recruitment, transportation, transfer, and use of persons against their will for material gain or other forms of control. It is a serious violation of human rights and combines economic and sexual aspects, making the phenomenon multidimensional and transnational. Forced labour, as a form of human trafficking, is characterised by the use of physical or psychological coercion, restriction of freedom of movement, and the inability to refuse to perform work without the threat of punishment and can manifest itself in various sectors of the economy, such as construction, agriculture, industrial production, or housework. Sexual exploitation, as another component of human trafficking, involves the forced use of persons for commercial sexual services, prostitution, pornography or other forms of sexual violence for the profit of third parties (Rupita *et al.*, 2025). According to the International Labour Organisation (2021), 108 complaints about forced labour were received in 2019, of which 48 met international criteria, and the National Complaints Mechanism (NCM), established in 2020, resolved 20 of the 38 cases received through interim mechanisms. In total, 707 (~64%) of the 1,105 complaints received were resolved between 2018 and 2020. Mass information campaigns and training seminars covered more than 500 thousand citizens and 4,252 institutions, and among minors out of 1,105 cases, 23 children were released, while 18 military personnel were brought to justice. Changes occurred primarily at the institutional and procedural levels through the introduction of a national complaints mechanism and the improvement of the system for dealing with cases of forced labour. In addition, they have manifested themselves in improving the effectiveness of the response, expanding preventive information measures, and strengthening the protection of vulnerable groups, in particular minors. The data show that government and ILO measures have contributed to reducing complaints and improving the response system to forced labour, but there is still a need to strengthen victim protection, effectively punish violators, and further implement legislative changes (International Labour Organisation, 2021). Victims of sexual exploitation are simultaneously subjected to forced labour and psychological control, which makes it difficult for them to independently defend their rights and seek help. The relationship between these phenomena is manifested in the fact that human trafficking is a general process of exploitation and forced labour and

sexual exploitation are specific forms of its implementation. The main causes of trafficking are poverty, social and economic vulnerability, unequal access to education and social services, conflict, political instability, and insufficient legal protection. In addition, there is a high risk of exploitation during mass migration, economic crises, and the lack of effective institutional countermeasures. Theoretical analysis of these phenomena allows identifying their content characteristics, common features and differences, and emphasises the need for an integrated approach to preventing, protecting victims and ensuring effective law enforcement at the national and international levels (Stöckl *et al.*, 2021).

In South-East Asia, sexual exploitation poses the greatest threat to girls and women from poor rural areas, internally displaced persons, children from conflict zones, and undocumented migrants, who face a combination of social vulnerability, economic instability, and limited access to legal protection. The typical scheme of exploitation is multi-stage: recruitment through promises of legal work, educational opportunities or humanitarian assistance, further movement to the city or abroad, and the establishment of control through debt dependence, threats, confiscation of documents, and social isolation. This dynamic is particularly common in the cross-border context of ASEAN due to high population mobility, open borders between states, and shadow migration channels that make it difficult to track victims. The main barriers to counteraction are the lack of documents for migrants, fear of deportation, lack of legal awareness, corrupt practices, and limited mechanisms for identifying victims. In addition, forced labour in construction most often affects poor rural men and women, internally displaced persons, and undocumented migrants, who, due to economic instability, social vulnerability, and limited access to legal protection, find themselves in conditions of exploitation that include recruitment under the guise of legal work, relocation to construction sites, deprivation of documents, debt dependence, threats and social isolation, and high mobility of the population, open borders and shadowy migration channels make it difficult to identify victims, while fear of deportation, corruption, and lack of legal awareness make it difficult to protect them. In Myanmar, the issue of forced labour remains relevant due to a combination of socio-economic, legal, and migration factors, especially for people with low levels of education, temporary migrants, and people with irregular legal status who are looking for work abroad and agree to offers from intermediaries without proper verification of working conditions. Table 1 provides a comparative description of sexual exploitation and forced labour in the construction sector on key features that reflect the forms of attraction, coercive mechanisms, operating conditions, and socio-legal consequences for victims.

Table 1. Comparison of sexual exploitation and forced labour in construction

Phenomenon	Mechanism	Main risks	Detection barriers	What regional cooperation requires
Sexual exploitation	Recruitment through promises of work or help → relocation → debt control, threats, isolation	Debt dependence, threats, confiscation of documents, social isolation	Lack of documents for migrants, fear of deportation, corruption, limited identification of victims	Coordination of cross-border investigations, information exchange, protection of victims, harmonisation of national policies, common standards for the protection of victims, including Myanmar
Forced labour in construction	Withholding passports/ salaries, debt dependence, travel restrictions, inflated fines, threats of release or deportation	Violation of labour rights, financial dependence, psychological control	Private sector out of control, fear of treatment, irregular status of migrants	Joint monitoring, coordination of labour inspectors, data exchange between ASEAN countries, Myanmar's participation in cross-border worker protection programmes and standardised protocols

Source: compiled by the author based on the analysis of IndustriALL Global Union (2025), V. Mishra (2025)

Comparative analysis showed that sexual exploitation and forced labour in construction, particularly among migrants from Myanmar, share a common logic of functioning, which is based on the vulnerability of migrants, control through debt dependence and fear of loss of legal status, while differing in forms of coercion and areas of implementation. Both phenomena are characterised by systemic concealment due to informal practices, limited access of victims to protection mechanisms, and insufficient institutional coordination, which made it difficult to detect them in a timely manner. It was established that effective counteraction requires not only national measures, but also regional interaction, in particular, the harmonisation of monitoring standards, information exchange, and joint actions between ASEAN states, in particular, considering the specifics of the situation in Myanmar, which confirms the complementary nature of these forms of exploitation and the need for an integrated approach to overcoming them.

Characteristics of international and regional sources on human trafficking and forced labour. ACTIP (Association of Southeast Asian Nations, 2015) serves as a basic regional document that sets mandatory standards for criminalising human trafficking and sexual and labour exploitation, defines states' obligations to protect and support victims, and provides for interstate interaction in the investigation and prosecution of criminal networks. The implementation of these norms at the practical level is ensured by ASEAN regional plans and working mechanisms, in particular, the ASEAN Plan of Action Against Trafficking in Persons (Association of Southeast Asian Nations, 2021), which "translates" ACTIP standards into specific

procedures through coordination of member states, training programmes for police and social services, application of risk indicators and forced labour, systematic monitoring of implementation and regular reporting, thus ensuring consistent and practically oriented implementation of the provisions of the convention in the context of Myanmar and other ASEAN countries. Table 2 illustrates how the norms and standards of ASEAN and international organisations are implemented through coordination, training, standardised procedures, and indicators to combat human trafficking and forced labour, while pointing out existing gaps and the need to strengthen mechanisms.

Table 2. Norms and mechanisms of ASEAN and international organisations to combat human trafficking and forced labour

Institute	Obligations or standards	Implementation tools	Gaps / what needs to be reinforced
UNODC	Sets international standards for preventing human trafficking, investigating crimes, and protecting victims	Inter-state coordination, training programmes for law enforcement, SOP for investigations, data exchange	Limited detail of sector risks and specific groups, insufficient standardisation of reporting
IOM	Provides methods for safe migration, risk assessment, and support for vulnerable groups	Trainings, guides, risk indicators, assessment of migrant vulnerability	Insufficient coordination with national legislation, limited implementation of indicators in the construction and industry sector
U.S. Department of State	Monitoring the global state of human trafficking, evaluating the effectiveness of national policies	Regular reports, analytics, recommendations for states	Reports are not always integrated into local mechanisms, weak feedback on implementation of recommendations
ASEAN-Australia Counter Trafficking	Establishes cross-border procedures for cooperation between law enforcement officers and prosecutors, protection and escort of victims	Cross-border task forces, joint investigative actions, coordination, training, exchange of evidence	Limited consistency in practical application, insufficient standardisation of procedures and monitoring of implementation

Note: SOP – Standard Operating Procedure

Source: compiled by the author based on the United Nations Office on Drugs and Crime (2022), International Organisation for Migration (2023), ASEAN-Australia Counter Trafficking (2024; 2025), United States Department of State (2025a; 2025b)

The analysis of Table 2 shows that international and regional instruments establish a framework for combating trafficking and forced labour by combining standards for the prevention, protection of victims, and investigation of crime with specific implementation tools such as interstate coordination, training, standardised procedures, and data exchange. The use of these mechanisms is aimed at improving the effectiveness of the law enforcement response, protecting vulnerable groups of migrants and providing a systematic approach to identifying risks in different sectors, while the integration of national policies and practical applications remain fragmented, which highlights the need to unify procedures, strengthen monitoring, and harmonisation with local contexts. In 2010-2025, Myanmar's approaches to combating human trafficking evolved from case recording and launching complaint mechanisms to more active documentation and international/regional coordination. However, there were still high risks of forced labour in the construction sector due to the demand for cheap labour and weak control of private contractors. That is why further analysis focuses on how ASEAN regional mechanisms have been applied to Myanmar. Table 3 summarises the key tools and institutional mechanisms of ASEAN aimed at preventing sexual exploitation and forced labour in the construction sector.

Table 3. Instruments and mechanisms of ASEAN to combat sexual exploitation and forced labour in construction

ASEAN tools and mechanisms	Application towards sexual exploitation (Myanmar)	Application towards forced labour in construction (Myanmar)	Gaps / what needs to be reinforced
ASEAN legal standards and conventions	Establish mandatory standards for criminalising sexual exploitation, in particular the recruitment of female migrants from Myanmar, and define obligations for inter-state coordination, victim protection, and access to assistance	Form a general legal basis for criminalising forced labour of migrants in construction, but do not consider specific sector risks, do not detail control and response mechanisms	Requires the development of sectoral-oriented legal guidelines for construction, clarification of standards of proof, and coordinated implementation of norms in national legislation
ASEAN Convention Against Trafficking in Persons, Especially Women and Children (ACTIP)	It is a key tool for countering sexual exploitation, providing coordination of criminal prosecution, victim identification, and interstate cooperation on cross-border networks	It is applied to cases of labour exploitation in construction indirectly, without clear adaptation to the specifics of the industry and contract chains	Requires a clearer interpretation of ACTIP in the context of labour exploitation in construction and the development of industry recommendations

Continued Table 3

ASEAN tools and mechanisms	Application towards sexual exploitation (Myanmar)	Application towards forced labour in construction (Myanmar)	Gaps / what needs to be reinforced
ASEAN action plans to combat trafficking in persons	Provide procedures for identifying victims of sexual exploitation, training programmes for law enforcement and social services, and regional coordination	States are focused on identifying migrant labour exploitation, but practical applications to the construction sector are fragmented and unsystematic	Requires defining clear risk indicators for construction, strengthening implementation monitoring, and regular reporting
Mechanisms for cross-border cooperation and information exchange	Provide for the exchange of operational information, coordination of investigations and prosecution of transnational sexual exploitation networks, regarding recruitment routes and methods	Used to identify illegal intermediaries and recruiters in construction, but practical implementation remains limited	There is a lack of joint task forces, agreed standards for collecting evidence, and systematic harassment of recruiters in the construction sector
ASEAN Committee on Migrant Workers (ACMW)	Indirectly promotes the protection of migrants vulnerable to sexual exploitation through recommendations on the rights of migrant workers	Has the potential to influence the working conditions of migrants in construction, but its recommendations are mostly declarative in nature	The ACMW mandate needs to be strengthened, and its recommendations integrated into national inspection mechanisms
ASEAN monitoring and advisory mechanisms (AICHR, sectoral working groups)	Used to advocate for the rights of victims of sexual exploitation and to create a regional human rights discourse	Limited use for systematic monitoring of forced labour in construction, especially in the context of Myanmar's political instability	The mandate for data collection, independent monitoring, and industry-specific analytical reports should be expanded

Source: compiled by Association of Southeast Asian Nations (2014; 2015; 2021), Karen Human Rights Group (2017), United Nations Office on Drugs and Crime (2017; 2020), International Labour Organisation (2017; 2022), United States Department of State (2010; 2023; 2024; 2025a; 2025b)

The table shows that the effectiveness of countering sexual exploitation and forced labour in construction in Southeast Asia depends on the interaction of legal, coordination, and operational mechanisms. Legislative standards provide a framework for criminalising violations, creating a formal framework for prosecuting perpetrators and protecting victims, while action plans and regional coordination define consistent procedures for victim identification and risk assessment, facilitating a systematic response by states. Cross-border information-sharing mechanisms enable rapid detection and blocking of recruitment and exploitation networks. The causal relationship is that legislative frameworks and action plans define standards and processes, and their implementation through coordination and information sharing directly affects the effectiveness of victim protection and prevention of violations, while lack of coherence and insufficient implementation of procedures weakens the effectiveness of these measures.

Recommendations on combating sexual exploitation and forced labour in Myanmar. To combat trafficking and exploitation, it is established that ASEAN member states must criminalise sexual exploitation and forced labour, and inter-state coordination of investigations and protection of victims. According to ACTIP (Association of Southeast Asian Nations, 2015), such standards are mandatory for implementation at the national level, including the obligation to establish legal mechanisms to protect victims and jointly prosecute criminal networks. Based on this, it is recommended to strengthen the use of ACTIP in Myanmar by clearly identifying victims, providing access to shelters and psychological support, and implementing coordinated coordination procedures between ASEAN states.

Effective operation of regional action plans has been found to improve the identification and protection of victims, and monitoring of risks and recruitment schemes. The ASEAN Plan of Action Against Trafficking in Persons (Association of Southeast Asian Nations, 2021) demonstrates that through training programmes for police and social services, the establishment of risk indicators and the regular exchange of information, ACTIP standards can be practically implemented. Based on this, it is recommended to develop specialised risk indicators for sexual exploitation and forced labour in construction, strengthen implementation monitoring and regular reporting, and standardise procedures for collecting data on victims.

An analysis of international reports has shown that cross-border recruitment networks remain the main channel of exploitation of migrants, especially from Myanmar to ASEAN countries. According to the International Labour Organisation (2021) and the International Organisation for Migration (2023), recruitment involves job promises, displacement, and control due to debt, threats, and social isolation, which creates significant barriers to detection and protection. On this basis, it is recommended to strengthen interstate cooperation through contact points, regular exchange of evidence, joint investigative actions, and the development of standard procedures for the identification and protection of victims. Data from the Anti-Trafficking Working Group (2023) and reports by the United States Department of State (2023) confirm that labour exploitation in construction is particularly vulnerable due to the private sector, complex subcontracting chains and recruitment agencies, and the fear of deportation and irregular status of migrants. Based on these findings, it is recommended

to strengthen monitoring of construction sites, ensure transparent recruitment practices, implement coordinated procedures for protecting affected workers, and organise access to legal support and alternative sources of income. For both areas, it is recommended to strengthen ASEAN regional cooperation through joint training programmes for law enforcement agencies and the prosecutor's office, regular exchange of information on risks and recruitment schemes, conducting joint operations against organised criminal groups, and develop risk assessment standards and methods for monitoring the implementation of legislation, which will create an effective and sustainable system for combating human trafficking at the ASEAN level.

Discussion

Human trafficking in Myanmar is emerging as a multi-level phenomenon in which sexual exploitation and forced labour in the construction sector are linked to regional migration processes, the integration of exploitation practices into legal economic sectors, and a combination of structural, institutional, and social factors in the context of limited inter-state interaction within ASEAN. Human trafficking in Myanmar is largely linked to economic instability and high levels of poverty. These factors encourage people to look for work abroad, making them vulnerable to recruitment. The results of the study are consistent with the approaches to the interpretation of the very concept of human trafficking presented by J. Dahlstrom (2020), which demonstrated the elasticity of the legal and social meanings of this phenomenon. The main groups that are exploited are women and children, especially from ethnic minorities. They are most often victims of sexual exploitation and forced labour. This interpretation explains why victims in the construction sector of Myanmar and ASEAN countries are not identified as victims of human trafficking at the institutional level. Sexual exploitation of women and girls in Myanmar is closely linked to gender inequality and social marginalisation. This conclusion is consistent with the findings of J. Gacinya (2020), which proved the role of the construction sector in shaping the risks of human trafficking. A high concentration of forced labour was recorded in the construction sector. This is conditioned by a lack of control over working conditions and a large number of informal contractors. Political instability and armed conflict identified as key background factors for human trafficking correlate with the findings of M. Kakar & F. Yousaf (2021), who analysed the relationship between political turbulence, economic instability, and forced forms of exploitation. The findings confirmed that instability in Myanmar creates an environment in which forced labour in construction becomes economically beneficial to employers but almost invisible to control mechanisms. Exploitation is based on informal labour relations, debt dependence, and limited employee mobility. Similar characteristics were found by A. Khan *et al.* (2022) in a study of human trafficking in Pakistan, where the construction industry is a high-risk area. Informal labour relations and weak government controls create conditions for systematic exploitation of migrants in this sector. Human trafficking cases were documented through reports by the U.S. Department of State, ILO, and UNODC. These documents include statistics, recruitment routes, and types of exploitation. Attention was paid to the role of technology in recruiting victims. It appears that digital platforms are used for fraudulent employment and sexual exploitation, which is consistent with the systematic review by L. Gezinski & K. Gonzalez-Pons (2022). Technological tools expand the capabilities of criminal networks, while making it more difficult to identify human trafficking using conventional methods.

The response to human trafficking within ASEAN remains fragmented and focuses primarily on criminal law measures. Legislation such as the Towns Act (1907) and Myanmar Law Library (2012) provide a legal basis for combating forced labour. They help to officially record violations and bring those responsible to justice, but they do not record all cases and are quite outdated. This approach correlates with the critical analysis of social services presented by A. De Shalit *et al.* (2020), which showed that reducing the problem to criminal justice limits opportunities for long-term support for victims. The lack of cross-sectoral coordination identified in the study confirms the need to consider human trafficking as a problem related to health, social policy, and migration management. The interaction of human trafficking and domestic violence recorded in individual cases of sexual exploitation is consistent with the results of E. Koegler *et al.* (2022). The findings show that exploitation is accompanied by psychological control, threats, and isolation, making it difficult for victims to seek help even within the available regional mechanisms. ACTIP creates regional standards for combating human trafficking. The convention documents define states' obligations to protect victims and criminalise exploitation. The combination of violence and dependence on exploiters increases the length of stay of persons in situations of forced labour and sexual exploitation. The role of medical and community professionals in identifying cases of human trafficking is confirmed by the findings of M. Combs & T. Arnold (2021), who emphasised the potential for interdisciplinary interaction. In ASEAN countries associated with labour migration from Myanmar, this potential is used to a limited extent, which reduces the effectiveness of early identification of sexual and labour exploitation. Features of the normative response to sexual exploitation correlate with the analysis of N. Insani *et al.* (2023), who pointed out contradictions between religious, legal, and international approaches to combating human trafficking. In some ASEAN countries, cultural and regulatory constraints influence policies to protect victims, especially in cases of sexual exploitation. This configuration of operation is consistent with conclusions of J. Wen *et al.* (2020), who focused on the systematic use of economic dependence, social isolation, and limited access to alternative sources of income as key mechanisms for retaining victims in situations of sexual exploitation. The present study also highlighted the internal causes of

human trafficking, in particular, weak law enforcement and corruption. These factors make it difficult for victims to access protection and justice. Exploitative practices are supported not so much by direct physical violence as by a combination of structural constraints and psychological control, which makes it difficult to identify and overcome these forms of criminal activity. The results correlate with the opinion of S. Yesufu (2020), where human trafficking was described as a process supported by socio-economic inequality and limited access to legal protection mechanisms. The study found that forced labour in the construction sector in Myanmar is clearly transnational in nature and is often associated with labour migration to other Southeast Asian countries. Workers are attracted through agents who offer legal employment, but after crossing the border, working conditions are transformed into a form of exploitation.

During periods of economic instability, there is an increase in the vulnerability of migrant workers and women, which expands the scope for traffickers. This conclusion is consistent with the arguments of J. Todres & A. Diaz (2020), who demonstrated that pandemic restrictions increase the risks of human trafficking through loss of income, limited mobility, and reduced institutional controls. In addition, the ILO and UNODC monitoring programmes allow collecting data on cases of forced labour in the field. Such documents are used to develop preventive measures and train civil servants. Similar processes were reflected in the conceptual model by T. Washburn *et al.* (2022), where economic shocks were seen as a catalyst for labour exploitation and modern slavery, which is manifested in the growth of informal employment, increased debt obligations of workers, and a decrease in the ability of state institutions to exercise proper control over working conditions. Cooperation within ASEAN is fragmented and mainly focuses on declarative commitments, while practical mechanisms for information exchange, joint investigations, and victim protection remain limited. This conclusion is consistent with the provisions of B. Orsini (2022), who emphasised that the effectiveness of combating human trafficking depends on coordinated actions of law enforcement agencies, standardised procedures, and interstate trust. The absence of these elements leads to transnational criminal networks exploiting gaps between national jurisdictions. The emphasis on criminal prosecution without parallel development of victim support systems limits the effectiveness of anti-criminal policies. In cases of sexual exploitation and forced labour, victims are often not identified as victims, which reduces the level of seeking help. This situation correlates with the conclusions of K. Marburger & S. Pickover (2020), which emphasised the need for a comprehensive approach to working with victims, including psychological assistance, social reintegration, and legal support, as the lack of coordinated support services leads to re-vulnerability and increases the risk of re-engaging individuals in exploitative practices. Sectoral studies have shown that construction, fishing, agriculture, and domestic work are the riskiest. Documentation of cases in these sectors is aimed at strengthening legislative control and improving employee protection. A similar position was taken by G. Sprang *et al.* (2022), considering human trafficking as a public health issue that requires cross-sectoral interaction. The involvement of minors in exploitative practices demonstrates the intersection of human trafficking with child labour and family poverty. Although the database focuses on Myanmar, the recorded patterns coincide with the results of N. Letsie *et al.* (2021), which in an eight-year analysis of child trafficking cases demonstrate repeated social and economic prerequisites for exploitation. This indicates the universality of certain mechanisms, regardless of geographical location. Transport infrastructure and logistics routes play a role in supporting human trafficking channels, especially in cross-border areas. It turns out that control over transport hubs and migration routes remains uneven. This result is consistent with the analysis by K. Sokat (2022), where transport was considered as an element in the implementation of human trafficking and in its prevention, since control over logistics routes and transport hubs allows for more effective identification of victims and interruption of channels of movement of exploited persons. The findings demonstrate that sexual exploitation and forced labour in the construction sector in Myanmar are influenced by economic vulnerability, limited coordination among states, and the lack of integrated support systems for victims. Alignment with international research suggests that these processes reflect a broader global trend in human traffic king and labour exploitation.

Conclusions

The study found that human trafficking in Myanmar was manifested through forced labour and sexual exploitation, which was realised through the recruitment, transportation, and use of persons against their will for economic gain. Specific cases of exploitation in construction, agriculture, domestic work and among Rohingya refugees have been documented, with poverty, social vulnerability, and lack of effective legal protection identified as the main causes of the phenomenon. During the period 2018-2023, national and international mechanisms such as NCM, ILO, and UNODC documented more than a thousand complaints, resolved most of them, and conducted mass information campaigns and training seminars for citizens and the private sector. The data also showed that the majority of victims were recruited through promises of work in shelters or homes, and the main method of release was self-release and the help of relatives or organisations, which highlighted the importance of an integrated approach to the protection and prevention of human trafficking.

Documents and initiatives implemented during 2010-2025 have strengthened Myanmar's ability to combat human trafficking and forced labour. In Myanmar, the introduction of international and regional instruments provides a systemic framework for combating human trafficking and forced labour. Legislation and agreements criminalise

exploitation, form national complaint mechanisms, protect victims, and improve monitoring, staff training, and statistics. Cooperation with international organisations and cross-border agreements increase the effectiveness of law enforcement, coordination between law enforcement agencies and prosecutors, and information and educational campaigns contribute to raising public awareness. The implementation of clear victim protection standards and regional action plans provides a comprehensive response to exploitation cases, strengthens international cooperation, and enhances the effectiveness of national policies. These documents have provided Myanmar with effective tools for legislative, operational and preventive responses, improved coordination, systematic protection of victims, and control over cases of forced labour and sexual exploitation. The recommendations focus on strengthening legislation, ensuring the effective functioning of the National Complaints Mechanism, and conducting training programmes for civil servants and law enforcement officials to ensure effective protection for victims and proper investigation of cases of forced labour and sexual exploitation. They also provided for the development of economic support for vulnerable communities, monitoring the private sector, and enhancing international cooperation, enabling Myanmar to reduce exploitation, increase security and stability in the system against trafficking in persons. Further research should focus on the effectiveness of the national mechanism for identifying and responding to cases of sexual exploitation among ethnic minorities in remote areas of Myanmar.

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Drawing on an analysis of Rohingya refugee cases and statistics on forced labour in Myanmar, B. Seriev made a case for the need for a sectoral approach to combating human trafficking within the framework of ASEAN cooperation. The author personally reviewed a vast body of international documentation covering the period 2010-2025 and prepared the final text of the article, including the development of specific risk indicators for the construction sector.

Conflict of Interest
None.

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The use of blockchain technologies in the investigation of cybercrimes in India and Vietnam

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Abstract. The aim of the study was to determine the level of effectiveness of digital forensics of virtual assets in law enforcement practices in India and Vietnam. The methodology was based on the conceptual-methodological method, regulatory and legal analysis, scenario-typological classification, case-study, and structural-logical modelling. It has been established that assessing the effectiveness of blockchain forensics should be based not only on on-chain analysis tools, but also on the complete operational chain of actions of the authority (artifact collection → on-chain analysis → identification of intermediaries → procedural actions → international cooperation → evidence formalisation). The effectiveness of blockchain forensics was operationalised through the metrics of asset restraint/recovery, disruption, attribution leverage, evidentiary robustness, and time-to-intervention. The presence of Anti-Money Laundering mechanisms and procedural procedures was a key condition for the transition from technical tracing to property measures and proving in criminal proceedings. It has been observed that in Indian practice, the main emphasis was placed on property results, which allowed for the seizure of assets worth approximately 1,646 crore rupees in the BitConnect case and the freezing of over 77 BTC in the E-Nuggets case. The success of investigations was ensured by a rapid transition from transaction analysis to interaction with exchanges, which effectively restricts criminals' access to crypto assets. Vietnamese investigations focus on large-scale investment pyramids, where losses amounted to nearly 10 trillion dong and over 51 million USDT. Effectiveness in these cases was manifested through the complete shutdown of fraudulent platforms and the detention of organisers, achieved by combining on-chain payments with digital traces in accounts and logs. Evidentiary robustness requires formalised procedures concerning the data source, reproducibility, and the chain of custody, as well as a standardised sequence of actions: "on-chain tracing → establishment of a control point (Virtual Asset Service Provider / device) → procedural action". The practical significance lies in the implementation of the results in the activities of law enforcement agencies, the judiciary, and the educational process to enhance the effectiveness of combating offences in the digital sphere

Keywords: evidence; data; on-chain; assets; effectiveness; route

Introduction

The proliferation of crypto assets and services based on blockchain technologies has transformed the nature of cybercrime: phishing, investment fraud, extortion, and money laundering combine off-chain infrastructure (pseudo-platforms, communication channels, affiliate networks) with an on-chain payment layer, within which transactions pass through public ledgers, stablecoins, and exchange services. In such circumstances, the blockchain serves as a source of data relevant to the investigation; however, its practical value depends on the procedural conversion of technical findings into admissible evidence and legal consequences. On-chain tracing without off-chain verification and proper documentation of digital artifacts generally fails to yield a legally robust outcome. A critical aspect was understanding how law enforcement agencies apply blockchain tools in actual cases and which factors determine the effectiveness of such practices in different jurisdictions, particularly in India and Vietnam.

The existing scholarly discourse on India was viewed through the lens of policy development and research trends in the field of cryptocurrencies and Distributed Ledger Technology (DLT). The work of K. Ghosh & P.K. Das (2025) demonstrated that the regulatory framework and institutional responses to virtual digital assets influence how the research and applied agenda concerning risks, compliance, and control was shaped. This underscores that political and regulatory approaches act as a "multiplier" of law enforcement capabilities but do not, in themselves, guarantee the reproducibility of evidentiary conclusions in criminal cases. In the realm of India's legal challenges, D. Halder & A. Saiyed (2022) established that cryptocurrency offences have a victimological dimension: low user awareness and regulatory gaps increase victim vulnerability and contribute to the mass involvement of victims in investment fraud schemes. This explains the socio-legal prerequisites for the spread of crypto-investment fraud and highlights the need for evidentially robust investigation procedures that combine on-chain tracing with off-chain verification and proper documentation of digital evidence.

In a study by P. Seerwani & M.P. Ram Mohan (2025), it was found that Virtual Asset Service Providers (VASPs) act as institutional "control points" through which technical on-chain data can be linked to identifying information, compliance obligations, and legal procedures. This approach substantiates why the effectiveness of blockchain forensics in investigative practice depends on access to VASP data and the ability to convert on-chain tracing into procedural decisions (data requests, freezing/seizure, evidentiary formalisation). F. Prakash & H. Sadawarti (2022) established that the use of blockchain approaches in the chain of custody model enhances the integrity, traceability, and change control of digital evidence, reducing the risk of substitution or loss of evidentiary information during its handling and transfer. This supports the thesis that "on-chain ↔ off-chain" integration must be accompanied by standardised procedural documentation of artifacts; otherwise, technically correct conclusions do not ensure sufficient evidentiary robustness.

Scholarly sources from Vietnam primarily emphasise the nature of fraudulent ecosystems and the procedural requirements for digital evidence. Transnational scam schemes, according to the work of H.T. Luong & H.M. Ngo (2024), were characterised by a resilient organisational structure and adaptive monetisation models, which complicate their termination within a single jurisdiction and necessitate inter-agency and international coordination. This explains why, in cases with "off-chain" dominance, investigation effectiveness depends on rapid access to digital traces and procedures for interaction with infrastructure providers and foreign partners, not solely on on-chain tracing. Research by T.T.T. Nguyen (2025) showed that in Vietnamese criminal proceedings, the effectiveness of working with digital evidence was determined by compliance with standards of admissibility, reproducibility, and proper documentation, which directly influence the judicial assessment of technical findings. This means that blockchain analytics acquires evidentiary value only under the condition of procedurally correct documentation and the integration of on-chain data with off-chain sources (accounts, logs, devices); otherwise, technically substantiated claims remain procedurally vulnerable.

In the context of Kazakhstan, Y. Saniyazova *et al.* (2024) established that the institutionalisation of digital forensics in Kazakhstan enhances the capacity of law enforcement agencies to investigate cybercrimes through the systematic use of digital traces, expert methodologies, and appropriate infrastructure. The authors emphasised that even with technically available data (digital artifacts of financial transactions), effectiveness was determined by the procedural quality of evidence collection, preservation, and interpretation. The effectiveness of combating internet fraud, as shown in the work of S. Shaisultanov *et al.* (2024), largely depends on the coherence of investigative operations with the procedural formalisation of their results and the timeliness of obtaining data from intermediaries and services. This reinforces the thesis regarding the necessity of a clear sequence: "detection of a digital trace → establishment of a control point → procedural action", which was analogous to the approach for converting on-chain findings into legally significant outcomes. T. Simbayev (2025) noted that mechanisms for the confiscation of digital assets without a conviction give rise to specific legal and procedural challenges concerning the proof of criminal origin, ensuring proper asset control, and adhering to property rights guarantees. Even with successful tracing of fund movements, the final outcome (freezing/seizure/confiscation) depends on the legal basis and procedural standards, not solely on the technical reconstruction of transactions.

Existing studies have mainly focused on either the regulatory and legal aspects of the cryptosphere or general issues of digital evidence, but have not sufficiently explained how on-chain tracing translates into procedurally and

legally robust results through integration with off-chain data and "control points" (primarily VASPs). Therefore, the aim of the study was to evaluate the use of blockchain technologies to combat cybercrime in India and Vietnam. To achieve this goal, the following tasks were set: to operationalise the assessment of the effectiveness of blockchain forensics in cyber investigations, analyse publicly documented cases of cybercrime in India and Vietnam, and develop guidelines for standardising procedures based on the identified limitations of on-chain analytics to minimise the loss of evidence and increase the evidentiary robustness of conclusions.

Materials and Methods

The research was conducted using a comprehensive approach that combined conceptual-methodological analysis, scenario-typological classification of typical cryptocurrency crime scenarios, regulatory and legal analysis of the legal frameworks of India and Vietnam, a case study of five publicly documented cases from official law enforcement communications, and structural-logical modelling to assess the transition from on-chain analysis to procedural outcomes. Through the method of conceptual-methodological analysis, the content of blockchain/cryptocurrency forensics was clarified, and basic analytical constructs were defined (transaction graph, address clustering, the distinction between "address/wallet", the role of VASPs and off-chain sources). This was done to substantiate which specific data and artefacts were relevant for forensics and which assumptions (including probabilistic ones) require explicit documentation and verification. Using the scenario-typological classification method, typical cryptocurrency crime scenarios were systematised – investment scam/Ponzi, pseudo-exchanges/pseudo-Decentralised Exchanges (DEX), stablecoin payments, ransomware – with the recording of their on-chain/off-chain indicators, typical limitations/countermeasures, and key evidentiary requirements. This approach enabled the unification of interpretation and the linking of technical procedures (tracing, clustering, interaction with VASPs, seizure of artefacts) with procedural requirements (chain of custody, reproducibility, procedural data requests). The aforementioned scenarios were selected as representative because they reflect the most common models of criminal monetisation and differ in the ratio of on-chain/off-chain components and the role of infrastructural control points, allowing for a comparison of the conditions for "converting" analysis into a procedural outcome. The selection criteria were the presence of repeatable analytical features suitable for coding, relevance to performance metrics (attribution leverage, disruption, asset restraint/recovery, evidentiary robustness), and the practical significance of evidentiary requirements for law enforcement interaction with VASPs and infrastructure providers. This enabled the formation of a unified coding scheme suitable for subsequent effectiveness assessment using operationalised metrics.

Using the regulatory-legal method, the legal framework for qualifying cybercrimes and handling digital evidence in the jurisdictions of India and Vietnam was analysed. These jurisdictions were chosen due to their different models of concluding investigations and, consequently, the different conversion of on-chain analysis into outcomes: in India, property measures (freeze/seizure/attachment) predominate; in Vietnam, disruption and arrests in cases where the off-chain component dominates. For India, the Act of the Information Technology No. 21 (2000), The Prevention of Money-Laundering Act No. 15 (2003), and the official report (press release) of the CoinDesk (2025) were analysed. For Vietnam, the Criminal Procedure Code No. 101 (2015), the Law on Cybersecurity No. 24 (2018), and the Anti-Money Laundering Law No. 14 (2022) were examined. These documents were selected as framework sources that define access to digital data, Anti-Money Laundering (AML)/property measures concerning crypto-assets, and procedural evidentiary requirements, and also reflect the practice of their application in documented cases. This was done to establish which specific norms and institutional powers in India and Vietnam enable or limit the transformation of on-chain analysis results into procedurally significant actions (obtaining/securing evidence and property measures concerning crypto-assets and individuals).

To systematise and analyse the technical and procedural parameters of the practical application of blockchain technologies and assess their effectiveness, the case-study method was applied to five publicly documented cybercrime cases: E-Nuggets (India Today, 2022) and the BitConnect (CoinDesk, 2025) cases in India. Also included were Winrich/Wintop (Ho Chi Minh City Public Security Department, 2021), Matrix Chain (MTC) (Ministry of Public Security, 2025a), and KAYPLE (Ministry of Public Security, 2025b) in Vietnam. The selection was determined by the presence of a clear crypto component (Bitcoin (BTC)/Tether (USDT), VASPs) and the possibility to compare the Indian model of property measures with the Vietnamese model of disruption. The choice of these specific cases was due to their representativeness: they involve complex transaction routes, specific fraudulent platform models, and significant scales of losses. The analysis was performed by comparing the cases based on the role of crypto/on-chain routes, off-chain control points (VASPs/devices/accounts), procedural actions, and the level of evidentiary value. This allowed for an assessment of the actual conversion of technical tracing into legal consequences (asset seizure, arrests, scheme disruption) under different national law enforcement models.

Using the method of structural-logical modelling, a system of five operationalised metrics was presented – asset restraint/recovery, disruption, attribution leverage, evidentiary robustness, time-to-intervention – and a structural-logical model of the operational chain was developed following the scheme "on-chain tracing → identification of control point (VASP/custodian/device) → procedural action". The selection of these indicators was due to their ability to encompass the entire operational chain of actions

from detection to asset recovery, their established status in the scientific literature on digital forensics, which ensures the validity of the analysis, and allows for distinguishing between the jurisdictional models of property control in India and the disruption of criminal infrastructures in Vietnam. This enabled an assessment of the effectiveness of transforming technical on-chain data into a legally significant evidentiary base and tangible law enforcement outcomes, identification of critical limitations of blockchain analytics (obfuscation methods, lack of off-chain artefacts), and formulation of directions for standardising expert reports to enhance the reproducibility and evidentiary robustness of conclusions in judicial proceedings, particularly in India and Vietnam. A limitation of the study was the use of exclusively open-source data concerning India and Vietnam, the uneven detail of available reports, and the probabilistic nature of analytical conclusions in blockchain forensics, particularly regarding attribution and the reconstruction of complex obfuscation schemes.

Results

Effectiveness of blockchain forensics in cybercrime investigations in India and Vietnam

Blockchain forensics (or cryptocurrency forensics) in the context of cyber investigations was a set of methods for collecting, normalising, analysing, and interpreting data from blockchain networks and associated digital artefacts with the aim of establishing facts regarding the movement of assets, relationships between addresses, and events relevant to criminal proceedings (Atlam *et al*., 2024). In practice, blockchain forensics was predominantly applied by combining on-chain data with off-chain sources (data from exchanges/custodial services, wallet providers, devices, network logs, etc.), as the blockchain itself contains a limited set of attributes sufficient for the legal identification of a specific individual (Dudani *et al*., 2023). The basic abstraction of analysis was the transaction graph, where nodes represent addresses/accounts and/or transactions, edges represent asset transfers between addresses, considering direction, time, and value. The graph representation allows for the reconstruction of asset movement sequences, identification of 'concentration nodes', identification of typical "layering" patterns, and determination of probable entry/exit points into the fiat system. In investigative practice, it was necessary to distinguish between an address as an identifier on the network (a public key or derived value depending on the blockchain) and a wallet as a software/hardware mechanism for managing keys and signing transactions. This distinction has implications for evidentiary value: the blockchain records addresses and transactions, while control over the wallet (keys) was established through devices, seed phrases, backups, or through the provider of custodial services (Dudani *et al*., 2023, Atlam *et al*., 2024).

One of the key approaches was address clustering, i.e., the grouping of addresses that were likely controlled by a single entity or belong to a single service infrastructure. Such conclusions were based on heuristics specific to a particular network and transaction model (for example, for Unspent Transaction Output (UTXO) networks – change address patterns), as well as on behavioural indicators (frequency, rhythm, typical routes) (Dudani *et al*., 2023; Atlam *et al*., 2024). Clustering was probabilistic in nature and requires documenting assumptions and verifications, as clustering errors can impact legal interpretation. A critical point for identification was the VASP – exchanges, bureaux de change, custodial providers. These entities may possess Know Your Customer (KYC)/AML data and operational logs linking blockchain addresses/accounts to real identities or payment instruments (Dudani *et al*., 2023; Atlam *et al*., 2024). In practical terms, this means that on-chain analysis was used to identify relevant addresses and transaction routes, after which interaction with VASPs within procedural frameworks becomes critical.

Blockchain forensics deals with reproducible artefacts that can be re-examined: transaction identifiers, transaction linkage to a block, timestamps (temporal context, which depends on the protocol/network and was not always a precise "real-time" marker of the event), as well as input/output addresses, amounts, fees, and smart contract call parameters (where applicable). Crucially, the data source (node, indexing provider, analytical tool) must be correctly recorded, and the "reproducibility" of the procedure for obtaining results must be ensured, as discrepancies in sources/indexing or tool parameters can affect interpretation (Dudani *et al*., 2023; Atlam *et al*., 2024). Given the probabilistic nature of clustering and the dependence of attribution on off-chain sources, it was advisable to correlate blockchain forensics results with typical criminal typologies and procedural requirements. In different scenarios, key roles may be played either by the gaps between on-chain transfers and off-chain platform data, or by the service infrastructure, conversion, and interaction with VASPs as sources of KYC/AML data. Simultaneously, the requirements of evidence remain immutable: recording the data source, describing tools and procedures, ensuring reproducibility of results, and maintaining the chain of custody for relevant digital artefacts (Table 1).

Table 1. Scenarios of crypto-asset use in cybercrime and requirements for procedurally admissible evidence

Scenario	Characteristics	Typical Limitations/ Countermeasures	Key Evidence Requirements
Investment scam / Ponzi, "crypto platforms"	On-chain routes (txid, addresses, token transfers), correlation with off-chain data, graph analysis/ clustering, "anchors" via VASPs	Off-chain balances may be falsified; amount splitting; use of different networks/routes; dependence on VASP data availability	Chain of custody for devices/logs; procedurally correct acquisition of off-chain data; transparency of methodology and minimisation of assumptions

Continued Table 1

Scenario	Characteristics	Typical Limitations/ Countermeasures	Key Evidence Requirements
Pseudo-exchanges / pseudo-DEXs (fraudulent "services")	Deposit addresses/conversion routes, intersections with VASPs, infrastructure analysis (domains/logs)	Cross-chain transfers; use of intermediaries; rapid infrastructure changes; imitation of DeFi functions without genuine decentralisation of control	Procedural seizure/preservation of digital traces (servers/logs/accounts); chain of custody; formalising requests to providers
Stablecoins (USDT) as a common payment pattern in crypto scenarios	Token transfers, on/off-ramps, attribution via VASPs, graph patterns	High velocity of movement; multi-chain nature of stablecoins; sum fragmentation; circumvention via intermediary services	AML mechanisms for requesting data/restricting transactions; documenting data sources and ensuring reproducibility
Ransomware (contextual scenario)	Payment patterns/tracing in Bitcoin; large-scale on-chain activity analysis Bitcoin	Use of trace obfuscation techniques; rapid movement and splitting; dependence on availability of off-chain data	Chain of custody for digital artefacts; reproducibility of on-chain pattern interpretation

Source: compiled by the author based on A.B. Turner *et al.* (2020), F.-C. Tsai (2021), S. Dudani *et al.* (2023), N.T. Nguyen *et al.* (2023), H.F. Atlam *et al.* (2024)

The effectiveness of investigations involving a crypto component was determined not merely by the fact of on-chain tracing, but by the presence of attribution points and the ability to transform technical findings into procedurally admissible evidence. On-chain analysis (graph, clustering, route reconstruction) primarily serves as "navigation", whereas the decisive stage was reaching off-chain sources – primarily VASPs and related Know Your Customer (KYC)/ AML data or service infrastructure artefacts. Hence, a key limitation follows: the more a criminal model avoids regulated services (cross-chain transfers, intermediaries, rapid infrastructure changes, obfuscation), the harder it was to transition from tracing to an evidentially complete outcome. Scenarios differ in the type of "gap" between on-chain and off-chain data: for Ponzi/pseudo-platforms, falsified internal balances were critical; for pseudo-exchanges, it was control over withdrawal points and infrastructure instability. Stablecoins represent more of a payment pattern, reinforcing the importance of rapidly identifying off-ramps and applying AML mechanisms. Common to all scenarios were the requirements of evidence – chain of custody, reproducibility of the methodology, and documentation of data sources and assumptions; without these, on-chain analysis remains an analytical, not a procedural, result.

The regulatory and legal framework determines how the state can qualify cybercriminal acts, obtain, secure, and evaluate digital evidence, and identify and restrict the movement of criminal proceeds, including assets in the form of cryptocurrencies. To assess the application of blockchain forensics in cybercrime investigation, the interaction of two domains was key: the cyber domain (incident, data, and infrastructure handling) and the financial-legal domain (AML, seizure/freezing/confiscation of assets). In practical terms, the former domain provides access to digital traces, while the latter creates the legal mechanism for implementing investigation results concerning assets and proceeds. The Act of the Information Technology No. 21 (2000) forms the basic framework for legal response to cyber incidents and legitimises work with digital artefacts (electronic data, computer systems, logs, communications, service data). Concurrently, in crypto cases, the Act serves as the "entry-level" legal layer: it supports the qualification of the cyber incident and work with digital traces, but does not provide a self-sufficient mechanism for legal control over crypto-assets as criminal proceeds. Therefore, in cases where cybercrime was monetised through crypto-assets, the financial-legal perspective becomes decisive. The central instrument in this domain was The Prevention of Money-Laundering Act No. 15 (2003), which allows property or the value of property derived from unlawful activity to be considered an object of special state measures. For crypto cases, this was critical: an on-chain asset (cryptocurrency/tokens) or funds converted into crypto can be placed under legal control as the equivalent of criminal proceeds. Blockchain forensics establishes transaction routes and points of intersection with services/wallets; however, practical effectiveness for the law enforcement system was achieved when the technical result was transformed into a procedural action (access restriction, freezing, seizure, prospect of confiscation).

Consequently, the indicator of success was not only the reconstruction of the transaction route but also the achievement of legal control over the asset through freezing or seizure. Institutionally, The Prevention of Money-Laundering Act No. 15 (2003) was implemented through the competencies of financial law enforcement agencies; for instance, public communications by the CoinDesk (2025) describe tracing complex transaction chains, identifying crypto-wallets, and the subsequent seizure/control of assets under The Prevention of Money-Laundering Act No. 15 (2003). For India, the effectiveness of blockchain forensics should be assessed through the link: "on-chain tracing → identification of a controlled point/vehicle → procedural action under The Prevention of Money-Laundering Act". Separately, the issue of the legal status of crypto-assets

must be considered. The Indian approach to crypto-assets also has a constitutional-legal dimension, which sets the boundaries for regulatory measures and law enforcement, providing the theoretical foundation explaining the multi-component nature of the regulatory model (combining cyber law, AML logic, and public law principles).

The Normative Model of Vietnam was described as three-layered. Law on Cybersecurity No. 24 (2018) establishes the framework for state response to cyber incidents and regulatory interaction in cyberspace, including the powers of relevant authorities and requirements for digital infrastructure entities. This law creates the environment for data access and incident response; without it, on-chain outcomes lack sufficient procedural support from off-chain artefacts (logs, accounts, communications) necessary for evidentiary purposes. Anti-Money Laundering Law No. 14 (2022) (effective from 01.03.2023) establishes the financial-legal basis for combating money laundering and international cooperation. Its applied significance lies in forming procedural grounds for financial control and the application of restrictive measures. The Criminal Procedure Code No. 101 (2015) defines the procedure for obtaining, securing, and evaluating evidence, and consequently, the conditions under which digital artefacts related to crypto-assets acquire procedurally admissible status. Analytically, this was key for assessing effectiveness: even high-quality on-chain analysis loses practical value without the procedurally correct acquisition and recording of off-chain data and the proper documentation of the chain of evidence.

In summary, India and Vietnam differ in the configuration of the legal "circuits" for converting on-chain analysis into a procedural outcome. In India, the cyber circuit (Act of the Information Technology No. 21, 2000) provides the legal basis for working with digital artefacts, while the financial-legal circuit (The Prevention of Money-Laundering Act of India No. 15, 2003) provides the instruments for property-related measures. Consequently, practical effectiveness was more frequently documented in the forms of freeze/seizure/attachment after gaining access to controlled infrastructure or key storage media. In Vietnam, the normative model was three-layered (cyber response – AML – criminal procedure), and the ultimate effect depends on the coordinated access to off-chain artefacts and their procedural documentation, which was critical in cases dominated by pseudo-platforms and "virtual" balances. The differences in the types of publicly documented outcomes between jurisdictions were explained not by the technical capabilities of on-chain analysis, but by the varying institutional and procedural capacity to rapidly integrate the cyber circuit with financial-legal mechanisms and evidentiary requirements.

The effectiveness of blockchain technology application in cyber investigations

For crypto cases, what was decisive was not merely "transaction identification", but evidential reliability, particularly an unbroken chain of custody. A technological approach discussed in the literature was the "blockchain of custody" – recording key events in the evidence lifecycle in an immutable ledger (Tsai, 2021). However, this does not substitute for procedural requirements concerning initial seizure and forensic handling and was only meaningful as an additional mechanism for integrity control. Separately, the practical effectiveness of blockchain analysis depends on the ability to trace an on-chain trail to a controlled/identifiable point (service/provider/infrastructure); typical barriers include obfuscation, the use of services that complicate tracing, rapid movement of assets between instruments/networks, and other techniques that increase the risk of clustering errors and dependence on off-chain data (Dudani *et al*., 2023; Atlam *et al*., 2024). A distinct class of problems was constituted by "off-chain" fraudulent schemes, where legally significant was the separation of simulated interface data from the actual on-chain movement of assets (Nguyen *et al*., 2023). Cross-country differences manifest in the method of legally converting the on-chain trail: in Indian cases, effectiveness was documented through procedurally formalised measures against assets, whereas in Vietnamese cases, it was through a combination of dismantling the scheme and the procedural documentation of evidence within the cyber framework, AML countermeasures, and criminal procedure. On this basis, Table 2 was presented, demonstrating how the respective legal circuits were implemented in the practice of India and Vietnam, from the type of offence and crypto-component to specific actions by authorities and measurable outcomes.

Table 2. Practical implementation of regulatory circuits in crypto cases in India and Vietnam

Country / Case	Type of Offence	Blockchain/Crypto Component	Actions by Authority	Outcome
India BitConnect, 15.02.2025	Crypto-investment fraud / "cryptocurrency fraud"	Analysis of "complex web of transactions" in crypto wallets, use of dark web to complicate tracing	Tracking/analysis of transaction network, searches, seizure of digital devices, seizure of crypto with transfer under ED control	Seizure of crypto assets ~ ₹1,646 crore (approx.), ₹13,50,500 in cash and a Lexus car, as well as digital devices; previously (within this case) property attached worth ~ ₹489 crore (approx.)
India E-Nuggets, 28.09.2022	Cyber fraud / money laundering	Exchange route (WazirX → Binance), BTC as object of freezin	Tracing the route, freezing BTC on Binance, searches (cash seizure)	77.62710139 BTC frozen, estimated equivalent: USD 1,573,466 (≈ ₹12.83 crore), cash of ₹17.32 crore seized earlier during search

Continued Table 2

Country / Case	Type of Offence	Blockchain/Crypto Component	Actions by Authority	Outcome
Vietnam, MTC / Matrix Chain, 28.05.2025	Investment fraud via "sàn giao dịch tiền ảo" (pseudo-platform)	Crypto platform as a mechanism for raising funds, focus on scale of fundraising / investments/ losses: "gần 10 ngàn tỷ đồng" (nearly 10 trillion VND) (software development cost 20,000 USDT, "platform" model specified: each participant pays 1 USDT into a "platform fee wallet", stated proportions of fund distribution from "platform fee wallet": 40% / 5% / 55% (leaders/advertising/ personal use)	Operational measures/ operation, uncovering the scheme	Scale: "gần 10 ngàn tỷ đồng", cited 394,276,762 USDT (~ over 10,000 billion VND) and >138,000 accounts
Vietnam, KAYPLE, 21.12.2025	Fraud involving investor solicitation	as a payment crypto-layer, funds transferred to crypto wallets controlled by the organiser; "balances" in the interface described as "virtual"	Uncovering; procedural actions against involved persons, establishing the scale of damage	Scale of damage (crypto + equivalent) – number of investor "wallets": over 4,000; amount linked to crypto payments: over 51 million USDT, equivalent in national currency ~ 1.275 billion VND (1.275 trillion VND); procedural outcomes (detentions/expansion) – apart from the two main figures, the release notes the detention of another 8 related individuals (+8 total)
Vietnam, Winrich/Wintop, 30.12.2021	Fraud via web platforms	Route: purchase on an exchange (Binance mentioned) ➔ conversion to USDT ➔ transfer to organisers wallet	Uncovering; detention of involved persons, recording victim statements	At the time of the release publication, there were already 9 statements, and the total amount of misappropriated funds according to these statements exceeded 12 billion VND

Source: compiled by the author based on Ho Chi Minh City Public Security Department (2021), India Today (2022), CoinDesk (2025), Ministry of Public Security (2025a), Ministry of Public Security (2025b)

The application of blockchain technologies in the investigation of cybercrimes proves effective not as a self-sufficient evidentiary tool, but rather as a navigational and analytical layer. This layer enables the restoration of fund flows, the identification of controlled "points of influence" (primarily VASPs/exchanges, custodians, devices, and accounts), and the subsequent conversion of on-chain findings into procedural actions. An analysis of publicly documented outcomes reveals distinct models for the "conclusion" of investigations. In the Indian cases, the emphasis was placed on property-related measures with quantifiable volumes (freeze/seizure/attachment). This reflects a focus on the financial and legal control of assets and the swift achievement of tangible property results through regulated infrastructure or physical access to storage media/keys. This was evident, for instance, in the E-Nuggets case, where tracing the exchange route creates a point of control for freezing BTC, and also in the BitConnect case, where, despite tracing difficulties, the outcome was achieved by combining on-chain tracing with searches and the seizure of digital devices and crypto assets. In contrast, the Vietnamese cases typically involve large-scale investment frauds with a pronounced "off-chain" component (pseudo-platforms, "virtual" balances in user interfaces, organisational networks for soliciting investments). Here, the blockchain primarily serves as a payment layer and an indicator of scale, with publicly documented effectiveness manifested through the exposure and dismantling of schemes, arrests, and the documentation of the scale of funds or accounts involved. In such models, the evidentiary "stitching" together of on-chain payments with off-chain artefacts (accounts, platform logs, communications, KYC/AML data) becomes critical. Without this, on-chain conclusions remain technically plausible but procedurally vulnerable. Overall, the difference between India and Vietnam within the examined cases was explained not so much by the analytical tools employed, but by the availability of attribution control points and off-ramp infrastructure, the specific weight of the off-chain component in the criminal modus operandi, and the capacity of the legal framework to promptly transform technical findings into tangible property and procedural outcomes. This ultimately determines the measurable effectiveness of blockchain forensics in investigative practice.

The evaluation of the effectiveness of applying blockchain technologies in cybercrime investigations was conducted on the basis of operationalised metrics that reflect the stages of transforming a technical trace (on-chain data) into a law enforcement outcome. The proposed metrics align with approaches described in the literature on

cryptocurrency/blockchain forensics and the admissibility of digital evidence (Tsai, 2021; Dudani *et al.*, 2023; Atlam *et al.*, 2024). Given the uneven level of detail in official press releases, the assessment was conducted according to the principle of "publicly documented / not documented", without reconstructing missing procedural details. Key metrics include: Asset restraint / recovery – whether the freezing, seizure, or other legal restraint of assets (including crypto assets) was documented, and whether volumes/amounts were specified; Disruption – whether the termination of the scheme/platform, arrests, searches, or other measures that prevent the continuation of the offence were documented; Attribution leverage – whether "bridges" between on-chain data and specific individuals/organisations (VASPs/exchanges, wallet control, seized devices, account credentials) were documented; Evidentiary robustness – whether approaches to preserving/documenting digital evidence (chain of custody, seizure of storage media, handling of keys, etc.) were described; in their absence, this aspect was assessed as "not documented", with standards substantiated by scientific literature; Time-to-intervention – whether the source contains temporal markers allowing for an assessment of the interval between the event/discovery and key measures; in the absence of a chronology – "not documented". The structural and logical model of the operational chain for transforming on-chain data into a law enforcement outcome was presented in Figure 1.

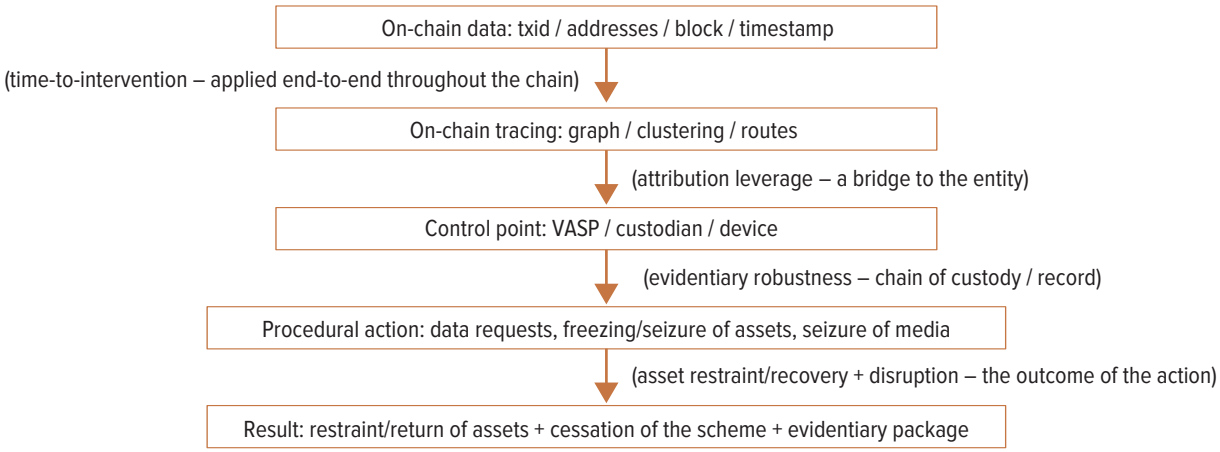

Figure 1. Structural and logical model of the operational chain for transforming on-chain data into a law enforcement outcome

Note: time-to-intervention was a cross-cutting metric for the entire chain, while evidentiary robustness was assessed based on procedural formalisation and chain of custody at the stage of procedural actions

Source: compiled by the author based on F.-C. Tsai (2021), S. Dudani *et al.* (2023), H.F. Atlam *et al.* (2024)

To assess effectiveness, it was advisable to consider not only on-chain analysis tools but also the operational chain of law enforcement actions: recording the initial report and collecting digital artefacts (addresses, TXIDs, communications); conducting on-chain analysis and identifying entry/exit points; identifying intermediary services (exchanges/VASPs); undertaking procedural actions to preserve data and restrict asset disposition; liaising with foreign jurisdictions; and formalising evidence in accordance with criminal procedure requirements. The presence of AML mechanisms and procedural protocols was decisive for the transition from technical tracing to property measures and proof in criminal proceedings. The synthesis presented in Table 2 indicates differences in the type of publicly documented outcomes: in the Indian cases, the emphasis was on property measures (freezing, seizure, attachment of assets) with quantifiable amounts, whereas in the Vietnamese cases, the focus was on exposing schemes, making arrests, and highlighting the scale of funds involved; information on the freezing or seizure of crypto assets was presented much more sparingly in public communications.

In India, on-chain tracing combined with the seizure of digital storage media predominantly yields results in the sphere of financial and legal asset control, reflected in indicators of freezing/seizure. The rapid transition from the on-chain graph to attribution points through regulated intermediaries (VASPs) and subsequent procedural actions was decisive. However, limitations include obfuscation techniques, cross-chain transfers, and the circumvention of regulated infrastructure, which complicate proving ownership and recovering assets. The Vietnamese cases typically involve large-scale investment frauds with a significant "off-chain" component, where the on-chain data serves as a payment channel and an indicator of scale. Effectiveness here was demonstrated through the dismantling of schemes and the documentation of the scale and network of involved entities, rather than solely through property-related outcomes. The main risks were associated with a deficit of off-chain data and its short retention periods, the multi-network nature of stablecoins, and manipulations with off-chain balances. To ensure evidentiary robustness, clear procedures

concerning data sources, reproducibility, and the chain of custody were necessary; otherwise, on-chain conclusions remain technically plausible but procedurally vulnerable.

Therefore, it was advisable to formulate directions for practical recommendations aimed at standardising working procedures, enhancing reproducibility, and minimising the loss of evidentiary information at the "on-chain ↔ off-chain" interface. It was necessary to formalise a typical sequence of actions: "on-chain tracing → establishing a point of control (VASP/custodian/device) → procedural action" (data request, freezing/seizure of assets, seizure of storage media). To unify outcomes in each case, it was recommended to document a minimum set of technical artefacts: txid, addresses, block height, temporal markers, as well as relevant parameters of token transfers/smart contracts (where applicable). Separate chain of custody rules should be established for hardware and mobile wallets, seed phrases, private keys, backups, and account access credentials. Mandatory elements must include access logging, integrity controls (hashing), role-based access segregation, and regulated conditions for the storage and transfer of storage media/data between units.

To enhance the evidentiary resilience of conclusions, it was advisable to systematically combine on-chain analytics (transaction graphs, clustering, typical transaction routes) with off-chain sources: KYC/AML data from VASPs, platform logs, and telecommunications and payment trails. This approach reduces reliance on probabilistic heuristics and increases the reproducibility of attribution claims. Given that relevant data (log records, account information, technical metadata) may have limited retention periods, and assets move rapidly between networks and services, it was prudent to formalise channels for expedited inquiries to VASPs and procedures for mutual legal assistance. This increases the likelihood of the timely application of restrictive measures and the preservation of evidence. It was recommended to unify the report structure for blockchain forensics, mandating a description of: the methodology, data sources (node/indexer provider), tools and their parameters, assumptions and verifications, as well as the steps necessary for result reproduction. This reduces the risk of methodological discrepancies and simplifies expert evaluation and judicial verification. It was advisable to include practical modules in training programmes on blockchain forensics, the typology of crypto-fraud (investment schemes, pseudo-platforms, stablecoin usage), interaction with exchange/custodial infrastructure, as well as the basic principles of evidentiary assessment of digital artefacts and the requirements for the procedural documentation of results. Thus, the effectiveness of employing blockchain forensics in cybercrime investigation was determined not by on-chain tracing itself, but by the presence of controlled attribution points (primarily VASPs) and the capacity of the legal framework to convert technical findings into procedural actions concerning assets and evidence.

Discussion

The study's results demonstrated that the effectiveness of applying blockchain forensics depends not solely on technical tracing, but on the complete implementation of the operational chain for transforming data into admissible evidence. This aligns with the findings of A. Trozze *et al.* (2022), who, in their systematic review, harmonise the definition of crypto-frauds and incorporate practitioner assessments (expert consensus), thereby strengthening the "bridge" between academic models and law enforcement/regulatory reality. This directly corresponds to the approach in the current study of "publicly documented/not documented" and to the fact that different jurisdictions publish different types of outcomes: in India – predominantly freeze/seizure/attachment with volumes, in Vietnam – disruption and the scale of involvement. Furthermore, the work of G. Arnone *et al.* (2025) demonstrates the mechanisms by which organised groups use cryptocurrencies for money laundering, fraud, and extortion, while also highlighting the gaps/limitations of enforcement frameworks and the need for cross-border cooperation. This correlates with the assertion of the current study that the presence of AML mechanisms and procedural frameworks was decisive for the transition from technical tracing to asset-related measures and proof. This precisely explains the differences in the types of publicly documented outcomes between jurisdictions and the varying conversion of on-chain analytics into asset seizure/forfeiture or scheme disruption.

The studies by B. Acharya & T. Holz (2024) and S. Ji *et al.* (2023) approach the problem differently, yet demonstrate a common conclusion: in contemporary 21st-century crypto-frauds, technical on-chain analysis was necessary but predominantly insufficient for achieving a law enforcement outcome. In the case of "pig butchering" demonstrated by B. Acharya & T. Holz (2024), off-chain communications, fake investment infrastructure, and social engineering play a key role, whereas the blockchain was used primarily as a payment channel. In contrast, S. Ji *et al.* (2023) found that even with advanced methods for detecting scam patterns (including Machine Learning (ML) approaches), the primary practical barrier remains the conversion of detected on-chain indicators into subject attribution, procedural actions, and an evidentiary base. This correlates with the results of the current study, where effectiveness was determined by the ability to integrate on-chain traces with off-chain data and infrastructural control points (VASPs, accounts, devices, user accounts), as evidenced in the KAYPLE case involving "virtual balances" and real payments in USDT to controlled wallets. The real effectiveness of blockchain forensics was determined not merely by the detection of on-chain patterns, but primarily by their procedural verification through off-chain sources and points of infrastructural control, which ensures attribution and the transformation of technical data into admissible evidence and effective measures of influence.

The study's results indicated that a key condition for converting on-chain analysis into practical outcomes was

the rapid transition to attribution points through regulated intermediaries (VASPs) and subsequent procedural actions for data preservation and asset restraint, which aligns with the conclusions of A.B. Turner *et al.* (2020). The authors synthesised analysis techniques for illicit Bitcoin transactions and emphasised that attribution in a pseudonymous environment remains the key barrier. Practically significant outcomes require the combination of blockchain analytics with legal and organisational response mechanisms. Tracing was merely one stage, while the outcome was shaped through procedural actions and interaction with infrastructure providers. Illustrative in this context was the E-Nuggets case, where the documented outcome was linked to reaching exchange infrastructure and freezing BTC, i.e., the realisation of a "control point".

In their work, C. Carpentier-Desjardins *et al.* (2025) identified an evidence-based taxonomy of Decentralized Finance (DeFi) crime and demonstrated the role of DeFi actors as targets, intermediaries, or even malicious participants. The authors operationalise the role of DeFi actors in events as targets, intermediaries, or malicious participants, demonstrating that criminal activity can be directed against legitimate protocols as well as realised through maliciously created infrastructure. Empirical results show that events where DeFi actors were targets constitute approximately half of the incidents but were associated with the dominant share of aggregate financial losses, whereas events initiated by DeFi actors as perpetrators account for a smaller share of losses. Furthermore, events were mapped to the technical layers of the DeFi stack, allowing differentiation between the levels where incidents concentrate and the levels where the greatest losses occur, with a notable role for the protocol and interface/oracle layers. These findings were consistent with the results of the current study regarding the limitations of purely on-chain detection without the rapid involvement of infrastructural control points and off-chain sources necessary for attribution and the procedural conversion of technical indicators into law enforcement outcomes. Metrics of disruption and attribution leverage become critical precisely for DeFi/pseudo-platforms, where detection without rapid access to a control point does not translate into a law enforcement outcome.

K.E. Castro Severiche *et al.* (2025) formulate research questions, specifically concerning publication trends, the classes/types of ML algorithms applied for model training, and the limitations and challenges of automated Ponzi scheme detection in decentralised transaction environments. The authors concluded that dominant solutions rely on features of transaction behaviour and/or smart contract characteristics, but their practical applicability was limited by issues of label quality, experiment reproducibility, and data and tool variability. This correlates with the current study's emphasis on formalised procedures, a standardised sequence of actions "on-chain → control point (VASP/custodian/device) → procedural action", and measuring effectiveness through operationalised metrics. This substantiates the need for standardising procedures for the reproduction of results concerning the mandatory description of tools and analysis parameters.

The research findings confirmed that on-chain analysis/graph techniques (including ML detection) serve as a form of "navigation", whereas reaching points of attribution/control and corroborating conclusions with off-chain data become decisive. In the absence of such points and off-chain verification, technical conclusions were difficult to transform into procedurally admissible evidence. This aligns with the work of H. Kanezashi *et al.* (2022), who demonstrated that heterogeneous Graph Neural Networks (GNNs) can enhance the quality of fraud/phishing detection in Ethereum by accounting for heterogeneous nodes and links, as well as issues of label imbalance. However, such approaches primarily facilitate the identification of suspicious patterns and probabilistic classification of activity, but they do not ensure subject attribution or the procedural admissibility of the obtained conclusions without involving off-chain sources and evidence preservation procedures. ML enhances the analytical stage, but the ultimate effect depends on integration with law enforcement procedures.

The research results indicated that the practical effectiveness of forensics with a crypto component depends on the completeness of the operational chain, specifically on the seizure/preservation of digital artefacts and the subsequent procedural conversion of the findings. In publicly documented cases, this was manifested through the combination of on-chain analysis with actions concerning devices and media (for example, the seizure of digital devices in the BitConnect case). This correlates with the approach of A. Bhattarai *et al.* (2025), as the authors propose instrumental automation precisely for the stage identified as critical in the current study – the rapid extraction and initial preservation of mobile digital artefacts necessary for subsequent procedural interpretation and attribution. In their study, A. Bhattarai *et al.* (2025) proposed a comprehensive approach to automating crypto-forensics on mobile platforms, combining ML, image processing, and Natural Language Processing (NLP) for the rapid automated extraction/triage of crypto-artefacts from Android and Apple mobile operating systems (iOS). The authors describe the automated detection of cryptocurrency wallets and associated artefacts (including logs/databases) on a device, as well as the extraction of relevant traces from images, web activity, and SMS communications. Procedurally correct handling of mobile wallets/keys and standardisation of the chain of custody for the relevant media and access credentials were essential.

In the work by Sakshi *et al.* (2023), a blockchain-oriented framework, the Blockchain-based Evidence Preservation Framework for Internet of Things (BEvPF-IoT), was proposed for preserving multimedia digital evidence from IoT environments to ensure its integrity and traceability. The solution combines Ethereum as a register for metadata/hashes and the InterPlanetary File System (IPFS) as a distributed content store, allowing the separation of large file storage from their immutable logging. The authors defined

a sequence of forensic processing operations (registration, storage, access/verification) aimed at minimising the risks of unauthorised modification of evidence. The feasibility of the approach was substantiated experimentally through performance evaluation and overhead assessment in the blockchain network (including latencies and operational costs). This correlates with the evidentiary robustness metric in the current study, where effectiveness was evaluated based on the presence of a documented chain of custody and the procedural admissibility of digital evidence. At the same time, the results of this study underscored that blockchain-based registration mechanisms cannot replace primary seizure and forensic preservation; instead, they serve a supplementary function of confirming immutability and access control after evidentiary materials have been obtained. Effectiveness, as understood in the current study, was determined by the integration of such registration mechanisms into the full operational chain and adherence to chain of custody procedures. Thus, the differing institutional capacities of jurisdictions to implement the operational forensic chain leads to variations in publicly documented outcomes (freeze/seizure/attachment or disruption). Therefore, enhancing practical effectiveness requires not only the development of detection methods but, above all, the strengthening of procedural and infrastructural mechanisms that ensure attribution and the procedural transformation of on-chain indicators into legally significant evidence and coercive measures.

Conclusions

The research outcomes defined blockchain forensics as a set of methods for collecting, normalising, and analysing data from blockchain networks to establish links between addresses and events relevant to criminal proceedings. The fundamental analytical model was the transaction graph, which reflects the movement of assets considering time and amount, enabling the identification of concentration nodes, layering schemes, and points of entry/exit into the fiat system. In the context of proving facts, a distinction must be made between the address as a network identifier and the wallet as a key management mechanism; actual control over assets was confirmed through access to seed phrases, private keys, or custodial services. Since address clustering was probabilistic in nature, the results necessitate mandatory documentation of assumptions to avoid errors in legal interpretation. Intermediaries (VASPs) possess critical operational logs that link blockchain accounts with real-world payment instruments. To ensure the reproducibility of an investigation, the precise set of technical artefacts must be recorded: txid, block height, timestamps, and smart contract call parameters. Stablecoins were considered a prevalent payment pattern, requiring the rapid identification of off-ramp points for the application of AML procedures. The effectiveness of an investigation was based on the interaction between the cyber domain (infrastructure-focused work) and the financial-legal domain (asset seizure mechanisms).

Vietnams regulatory model operates on three levels: cyber incident response, financial anti-money laundering measures, and the criminal procedural evaluation of evidence. In the Matrix Chain case (Vietnam), the use of a "platform fee wallet", to which each participant paid a fixed fee of 1 USDT, was documented. An additional mechanism for controlling the integrity of the evidence lifecycle was the blockchain of custody approach, which complements rather than replaces the primary seizure of artefacts. In the Indian BitConnect case, besides the seizure of digital devices, the confiscation of a Lexus car and over 1.3 million Indian rupees in cash was documented, alongside the attachment of ancillary property valued at 4.89 billion rupees. Furthermore, in the E-Nuggets case, tracing the exchange route WazirX → Binance enabled the freezing of cryptocurrency and the additional seizure of cash amounts totalling 173.2 million rupees during searches. A difference in case resolution models was observable between the countries: in India, asset-related measures dominate due to rapid access to regulated infrastructure or physical access to keys. In Vietnam, large-scale investment frauds with an off-chain component (pseudo-platforms, "virtual" balances) were more prevalent, where the blockchain serves as a payment layer, and the outcome was primarily recorded as the disruption of schemes and the arrest of organisers. Ultimately, effectiveness in both jurisdictions was determined by the ability to promptly convert tracing into procedural actions against assets and individuals. It was advisable to unify the structure of expert reports, including a description of data indexing sources and the steps necessary to reproduce the analysis results. Future research should be directed towards standardising the interaction of law enforcement agencies with VASPs, automating the analysis of DeFi and cross-chain operations, and utilising ML for the preventive detection of fraudulent patterns under conditions of high obfuscation.

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Author Contributions

Aigerim Shegebaeva established the methodological framework for research into blockchain forensics and developed a set of criteria for assessing its effectiveness in the investigation of cybercrimes. The author analysed the legal frameworks of India and Vietnam, examined practical case studies involving BitConnect, E-Nuggets, Matrix Chain, KAYPLE and Winrich/Wintop, and formulated recommendations regarding the standardisation of work with on-chain data, VASPs, digital artefacts and evidence.

Conflict of Interest

None.

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Forensic pathology in cross-border homicide between Kazakhstan and South Asia

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Abstract. The study aimed to analyse specific features of integrating forensic pathology tools into cross-border homicide investigations in Kazakhstan and selected South Asian countries through the lens of the hypothetical scenario illustrating how such integration could function in practice. The comparative policy analysis revealed that despite the geographical and sociocultural proximity, the countries had varying state regulations of forensic pathology practices, which could potentially affect cross-border homicide investigation. The Republic of Kazakhstan has adopted a two-layer system with an articulated structure of expert bodies, accreditation mechanisms, and reporting rules, whereas India, Pakistan, and Nepal do not have specific laws to regulate forensic investigation practices. In these countries, forensic practices are informed by the National Human Right Commission's guidelines on autopsy, commonly informed by the universally accepted standards. The hypothetical scenario involving a 34-year-old Pakistani entrepreneur discovered near the Kazakh-Kyrgyz border in the Almaty Region revealed hindrances to cross-border homicide investigation, including the lack of standardised forensic procedures, weak bilateral and multilateral legal frameworks, as well as culture- and language-specific barriers. Considering the detected barriers, it was recommended to standardise national forensic investigation procedures, strengthen legal frameworks rooted in the International Criminal Police Organisation and World Health Organisation standards and promote procedural transparency and accountability through regular peer audits. The obtained results can be used to facilitate cross-border homicide investigation to create a safer space for the Central and South Asia residents

Keywords: autopsy; investigation; medical service system; standardisation; criminal procedure code; mutual legal agreement

Introduction

The relevance of this research lies in the growing need to ensure effective cooperation in criminal justice amid the intensifying processes of globalisation. As international mobility, migration, and transnational business relations expand, law enforcement systems face new opportunities for collaboration, such as shared databases, joint investigative teams, and forensic capacity-building initiatives (UNODC – United Nations Office on Drugs and Crime, n.d.; Interpol, 2023). However, these opportunities are accompanied by serious challenges, such as the rise of transnational crimes, including cross-border homicides, which require complex coordination among multiple jurisdictions, different legal systems, and diverse standards of forensic investigation.

G. Abi Chaker (2024) in his research stressed the crucial role of forensic pathology in investigating unnatural deaths and providing data preconditioning legal and judicial outcomes. The author explained the contribution of forensic medicine to the fight against crime through a range of investigative methods, including autopsies, DNA analysis, and imaging technologies. E.G. Brooks (2023) identified forensic pathology as a public health endeavour. As explained by the cited author, tracking how and why individuals die could be used as a means of helping others to survive.

Previous studies, including the work of N.K. Gupta & S. Bhadauria (2024), focused on the contribution of forensic pathology to homicide investigation. The cited researchers stressed that forensic pathology utilised a range of tools to establish evidence that can be used in reaching a murder conviction. R. Koul *et al.* (2024) pointed out to the multidisciplinary nature of forensic pathology, which implied access to varied tools to collect, preserve, and investigate physical evidence from a crime scene. The multidisciplinary nature of forensic pathology also meant that this science discipline provided insights into patterns and profiles of criminal behaviours that could be used to draft homicide prevention strategies. M. Arif *et al.* (2023) studied the role of forensic pathology in providing legitimate evidence in homicide cases. The mentioned researchers further stressed that despite numerous opportunities, the use of forensic pathology in homicide investigation also implies a repertoire of challenges.

K. Wezi *et al.* (2025) concluded that integrating forensic pathology into Zambian criminal justice system and public health infrastructure involved overcoming multiple hindrances. According to the cited experts, those hindrances were associated with resource constraints, workforce shortages, and the lack of standardised protocols. In previous research, special attention was paid to the challenges of applying forensic pathology tools to homicide investigation. A. Devarajan *et al.* (2025), in particular, emphasised ethical concerns in homicide investigation, including informed consent and privacy issues. A. Devarajan *et al.* also argued that the lack of universal legal standards could be the hurdle to using forensic pathology in the homicide investigation context. The need for harmonised standards and practices was confirmed by F. Chatzinikolaou *et al.* (2025) who studied the role of forensic pathology in investigating the cases of neonaticides and infanticides. The mentioned authors argued that consistent classification protocols were needed to differentiate between the causes of infant deaths and conduct investigations in case of violent death.

Although forensic pathology is a fairly well-researched topic, insufficient attention has been paid to using its tools and techniques to support cross-border homicide investigation. Considering the detected gap, this study aimed to analyse the role of forensic pathology in cross-border homicide investigation between Kazakhstan and South Asia. This aim involved accomplishing the following objectives: to compare the legal, institutional, and procedural frameworks governing forensic pathology in the Republic of Kazakhstan and South Asian countries; to examine the hypothetical scenario evaluating the impact of forensic-pathology practices on cross-border homicide investigation; and to propose evidence-based recommendations for harmonising forensic-pathology practices and strengthening regional cooperation mechanisms.

Materials and Methods

This mixed methods research combined qualitative and quantitative elements by comparative legal and policy analysis with a structured assessment of forensic procedures and capacities across countries using predefined analytical indicators. The qualitative aspect involved systematic document analysis of statutes, regulations, policy papers, and international agreements, while the quantitative-descriptive element consisted of comparing the extent of compliance with procedural standards, for example, chain of custody documentation, autopsy reporting formats, presence of ISO/IEC 17025 (2025) based accreditation, across national systems. The sample of four countries (N = 4), including Kazakhstan, India, Pakistan, and Nepal, was selected according to the criteria of shared or emerging cross-border criminal and legal cooperation links, comparable geopolitical relevance, differences in legal and forensic governance frameworks, and existing reports of transnational criminal incidents along Central and South Asian routes.

The comparative legal and policy analysis was conducted through a document analysis approach rather than a formal content analysis. It included examination of the National Human Rights Commission (NHRC) Guidelines on Autopsy (Viswakanth, n.d.), the CPC – Criminal Procedure Code of the Republic of Kazakhstan No. 231 (2014), the Law of the Republic of Kazakhstan No. 44-VI LRK (2017), The National Penal (Code) Act No. 36 (2017), and The Mutual Legal Assistance (Criminal Matters) Act No. 22 (2020). In addition, bilateral and regional legal cooperation frameworks were reviewed to verify the existence of transboundary legal collaboration, such as "Compendium of the national legal requirements for international judicial cooperation in the Central Asian countries" (United Nations Office on Drugs and Crime, n.d.), which documents formal cooperation

procedures between Kazakhstan and South Asian countries, and South Asian Association for Regional Cooperation – SAARC Convention on Mutual Assistance in Criminal Matters (2008). Comparison was structured across analytical domains, including authority to conduct forensic examinations; standards for evidence collection and chain of custody; forensic documentation and reporting requirements; mutual legal assistance (MLA) mechanisms.

Technological and procedural tools in forensic pathology were also compared, highlighting that India and Pakistan predominantly rely on manual autopsy protocols and limited DNA-profiling infrastructure, while Kazakhstan has expanded its digital forensic capabilities, implemented ISO-aligned laboratory accreditation, and developed inter-agency biometric data-sharing platforms. Due to the limited availability of publicly reported cases involving cross-border homicide investigations between Kazakhstan and South Asian states, a hypothetical scenario was analysed. It was grounded in secondary sources such as regional crime reports, UNODC and SAARC legal cooperation guidelines, academic literature on transnational homicide patterns, and documented forensic pathology practices. The case was analysed in terms of forensic procedures undertaken (autopsy sequence, chain of custody management, laboratory testing methods compliant with ISO standards) and institutional coordination challenges across jurisdictions.

Results

In Kazakhstan, forensic examinations are mandated to be completed within 30 days, as stipulated by the Criminal Procedure Code of the Republic of Kazakhstan No. 231 (2014) and Law of the Republic of Kazakhstan No. 44-VI LRK (2017), with exceptions for complex cases requiring extended timelines. In contrast, Nepal lacks standardised timelines for forensic examinations, leading to potential delays in investigations (Atreya *et al.*, 2022). Regarding MLA, Kazakhstan has established electronic transmission provisions for MLA requests, facilitating communication with several jurisdictions; however, the effectiveness of these mechanisms depends on the willingness and capacity of partner countries to reciprocate (United Nations Office on Drugs and Crime, n.d.). The detected disparities in forensic examination timelines and MLA execution rates underscore the need for harmonised standards and enhanced cooperation between Kazakhstan and specific South Asian countries, including Nepal, to improve the effectiveness of cross-border forensic investigations. The varying practices, requirements, and standards might hinder the use of forensic pathology in cross-border homicide investigation. Considering this, the comparative analysis was performed to evaluate state approaches to regulating the integration of forensic pathology into crime management, including cross-border homicide investigation. The results of the comparative analysis are presented in the Table 1.

Table 1. State regulation of forensic pathology practices in the Republic of Kazakhstan and selected South Asian countries

Domain / Document	Kazakhstan	India	Pakistan	Nepal
Authority to conduct forensic examination	CPC lets investigators/courts appoint experts; Forensic Law defines expert bodies & procedures.	NHRC urges post-mortems by qualified forensic pathologists with videography & oversight (guidance, not statute).	MLA Act allows foreign evidence/expert requests but leaves domestic exams to national laws.	Penal Code substantive only; forensic authority in Nepal's procedural law.
Evidence collection & chain of custody	CPC + Forensic Law mandate seizure, transfer & storage rules; implementing SOPs define chain-of-custody.	NHRC checklists for collecting, sealing, videographing & forwarding samples/reports.	MLA Act regulates cross-border evidence transfer but not domestic custody standards.	Penal Code silent; chain-of-custody under CPC / regulations.
Forensic reporting	Written expert opinions with methods, findings; parties can challenge/appoint counter-experts.	Model post-mortem report, videography, timely submission to NHRC.	Enables transmission of expert reports abroad; domestic format applies.	Penal Code does not govern reports; procedural law does.
MLA	CPC provides channels via prosecutor/courts; Forensic Law allows international cooperation by expert bodies.	NHRC gives no MLA rules; India uses separate MLA statutes/treaties.	MLA Act = main statute for cross-border evidence, depositions, experts.	Penal Code has no MLA provisions; separate treaties/procedures used.
Accreditation / expert qualifications	Forensic Law sets expert accreditation & institutional standards; CPC governs appointment in court.	NHRC: qualified forensic doctors & transparency; licensing via medical councils.	MLA Act silent; domestic bodies accredit experts.	Penal Code silent; qualifications via Nepal's forensic/medical authorities.

Source: compiled by the author of the study based on B. Viswakanth (n.d.), Criminal Procedure Code of the Republic of Kazakhstan No. 231 (2014), The National Penal (Code) Act No. 36 (2017), Law of the Republic of Kazakhstan No. 44-VI LRK (2017), The Mutual Legal Assistance (Criminal Matters) Act No. 22 (2020)

The comparative analysis revealed a spectrum of legal and procedural approaches to forensic pathology across the four jurisdictions, which has direct consequences for cross-border homicide investigations. The Republic of Kazakhstan stands out with a two-layer system: its Criminal Procedure Code of the Republic of Kazakhstan

No. 231 (2014) regulates how investigations are conducted, while the Law of the Republic of Kazakhstan No. 44-VI LRK (2017) goes further by defining the structure of expert bodies, accreditation mechanisms and reporting rules. This produces a unified statutory model in which investigators or courts can appoint experts under clearly prescribed procedures and know that evidence collection, transfer, and expert reporting are covered by a single legal framework. India's NHRC's Guidelines on Autopsy (Viswakanth, n.d.), by contrast, are not a law but a binding form of administrative guidance. They focus on safeguarding rights and transparency in sensitive situations, especially custodial or suspicious deaths, by prescribing the use of qualified forensic pathologists, videography of post-mortems, standardised reporting formats, and secure handling of samples. While not enacted as a statute, these guidelines create a de facto national standard of care and accountability in the most contentious forensic cases.

The National Penal (Code) Act No. 36 (2017) and The Mutual Legal Assistance (Criminal Matters) Act No. 22 (2020) occupy a different position. Pakistan's Act does not itself regulate domestic forensic standards or chain of custody but provides a modern mechanism to send and receive evidence and expert testimony internationally. It establishes a central authority, sets out the content of requests, and defines grounds for refusal, confidentiality and reciprocity, which means it covers all essential elements for cross-border cooperation. Nepal's Penal Code, in turn, is substantive criminal law that defines offences and penalties; procedural rules for evidence collection, expert appointment and MLA requests are found in other laws and treaties rather than in the Code itself. Thus, while Kazakhstan and India are comparatively strong on domestic forensic regulation and transparency, Pakistan succeeds in international evidence transfer**,** and Nepal relies on a more fragmented procedural framework.

The comparison also revealed the varying impact of national frameworks on the implementation of forensic pathology tools in homicide investigation. In Kazakhstan, a homicide case involving a foreign suspect could draw on the Forensic Law's provisions to accredit experts, secure chain of custody, and prepare a standardised report that would be admissible abroad. In India, a custodial death with cross-border implications would automatically trigger NHRC-mandated videography and detailed reporting, which improves credibility for foreign courts but still requires a separate MLA channel for transmittal. In Pakistan, investigators could rapidly invoke the MLA Act to request forensic samples or expert testimony from another state, but the admissibility of such evidence at home would depend on domestic forensic lab standards governed by separate rules. In Nepal, investigators would need to coordinate across multiple statutes and institutions, since the Penal Code itself does not provide the procedural tools. These differences highlight key factors shaping the use of forensic pathology in cross-border homicide investigation. The first difference is statutory clarity: countries with an explicit forensic law, such as the Republic of Kazakhstan, can standardise practice and reduce evidentiary disputes. The second discrepancy is an institutional accreditation**:** without recognised qualifications or accreditation for experts, the reliability of forensic evidence may be challenged abroad. The third difference implies centralised MLA procedures: a clear central authority and request process (Pakistan) shortens timelines and reduces political friction. Finally, oversight and transparency mechanisms, such as India's NHRC requirements for videography and model reports, enhance credibility of evidence when presented to foreign courts. Together these elements determine not only the speed and effectiveness of cross-border homicide investigations but also the admissibility and trustworthiness of forensic pathology findings in another jurisdiction's courts.

Forensic pathology in cross-border homicide investigation: Case study

In this hypothetical scenario, the body of a 34-year-old Pakistani entrepreneur was discovered near the Kazakh–Kyrgyz border in the Almaty Region of Kazakhstan. The victim had travelled from Nepal via India several weeks earlier for gemstone trading. Initial police assessments suggested a transnational criminal motive involving illicit financial transactions, consistent with observed patterns of economic-linked homicides among mobile South Asian nationals in Central Asia and the Gulf region (United Nations Office on Drugs and Crime, n.d.). Such crimes often involve multiple jurisdictions, making effective forensic investigation and international coordination critical for justice outcomes.

Kazakh authorities promptly initiated an investigation in collaboration with Pakistan's Federal Investigation Agency and SAARC Convention on Mutual Assistance in Criminal Matters (2008). Preliminary inquiries revealed that the suspect group, comprising both Kazakh and South Asian nationals, coordinated the crime across multiple jurisdictions, highlighting the need for cross-border forensic cooperation to establish the sequence of events and link the individuals involved. A full medico-legal autopsy was conducted by the Centre for Forensic Medicine of Kazakhstan in accordance with the Criminal Procedure Code of the Republic of Kazakhstan No. 231 (2014). The autopsy revealed multiple blunt-force cranial injuries, extensive internal haemorrhage, and post-mortem burning, indicating both assault and attempts to conceal evidence. Toxicological analyses detected sedatives, including benzodiazepines, suggesting premeditation. Standard protocols for collection, preservation, and documentation of forensic evidence were observed, with chain-of-custody documentation recorded at each stage, in line with ISO/IEC 17025 (2025) recommendations for laboratory quality management.

Given the absence of the victim's local dental and DNA records, Kazakhstan's forensic team coordinated with Pakistan and Nepal through Interpol's International DNA Gateway (Interpol, 2023). Family reference samples and antemortem dental radiographs were transmitted through

formal Interpol channels. However, this process required over six weeks due to the lack of ISO/IEC 17025 (2025) certified forensic laboratories in Pakistan and Nepal. The delays were also due to the need to provide an adequate translation of witness testimony and forensic reports to support cross-border investigation. The delays illustrate how disparities in laboratory accreditation and procedural standards can impede timely evidence verification and affect the legal admissibility of forensic findings (Bhan *et al.*, 2025).Kazakh forensic experts reported additional challenges in standardising terminology, report formatting, and evidence interpretation with South Asian counterparts, reflecting broader issues identified by WHO – World Health Organization (2020) regarding autopsy practice variability in low- and middle-income countries. Differences in standards affected the comparability of postmortem findings and delayed integration into criminal proceedings.

The Ministry of Internal Affairs of Kazakhstan issued MLA requests under bilateral agreements and Commonwealth of Independent States (CIS) treaties. India and Pakistan responded with travel logs, immigration data, and telecommunications metadata. Nevertheless, the absence of a digital platform for secure transmission of forensic data necessitated physical transport of DNA samples via diplomatic pouches, further prolonging the investigative timeline (United Nations Office on Drugs and Crime, n.d.). Nepal's Department of Forensic Medicine provided comparative documentation from a 2022 unsolved homicide with a similar modus operandi. However, differences in cause-of-death classification, laboratory protocols, and chain-of-custody verification prevented direct case linkage, underscoring the challenges of harmonising cross-border forensic procedures.

The suggested scenario highlights multiple systemic obstacles to effective cross-border forensic investigations. First, the lack of harmonised forensic standards or joint certification schemes among Kazakhstan and South Asian partners limits mutual recognition of results. Second, bureaucratic procedures, differing privacy regulations, and the reliance on diplomatic channels delay biological evidence transfer. Third, limited interoperability of forensic information systems and terminologies hampers timely analysis. Finally, jurisdictional fragmentation and complex MLA processes can outweigh operational urgency, allowing potential perpetrators to evade accountability.

Despite these obstacles, the case underscores the crucial role of forensic pathology in establishing cause of death, reconstructing pre- and post-mortem events, and validating legal claims in multi-jurisdictional contexts. Forensic evidence provided objective documentation of trauma and toxicology, enabling investigators to identify suspect coordination and modus operandi. Furthermore, the integration of forensic pathology into the investigation highlighted the need for continuous capacity-building, knowledge exchange, and standardisation between Kazakhstan and South Asian counterparts. Comparative analysis suggests that harmonised forensic protocols, including ISO-certified laboratory practices, digital evidence transfer, and joint training initiatives, could significantly enhance the efficiency and credibility of cross-border investigations. Establishing a regional forensic cooperation platform, akin to the European Network of Forensic Science Institutes, would facilitate rapid evidence-sharing, improve inter-laboratory reliability, and ensure consistent documentation practices. Such measures would strengthen judicial processes, reduce investigation delays, and enhance international trust in forensic results.

The introduced case emphasised that while Kazakhstan possesses robust forensic infrastructure, disparities with South Asian partners in accreditation, standardisation, and MLA implementation impede seamless cross-border homicide investigations. The scenario demonstrated that integrating forensic pathology into international cooperation frameworks is essential for timely justice delivery, evidentiary reliability, and effective deterrence of transnational criminal activity. By adopting harmonised standards, digital communication platforms, and coordinated training programs, Kazakhstan and its South Asian partners could overcome existing obstacles and establish a model for efficient, collaborative transnational forensic investigation.

Facilitating the integration of forensic pathology into cross-border homicide investigation

Based on the above analysis, it was concluded that the integration of forensic pathology into cross-border homicide investigation was hindered by several external barriers. One barrier was associated with the varying types of forensic medical service systems in the Republic of Kazakhstan and selected South Asian countries. The key disparities are summarised in the Table 2 below.

Table 2. Forensic medical service systems in the selected countries

Country	Institutional model (type of forensic medical service system)	Supervising authority / Death investigation structure	Key historical basis & integration barriers	Cooperation potential
Kazakhstan	Centralised, state-integrated forensic medical service.	Ministry of Justice; forensic institutions embedded in national investigative system.	Institutionalised since 1951 (Republican Bureau of Forensic Medical Examination). Barriers: bureaucratic hierarchy, slow procedural flexibility.	High – ISO-aligned accreditation, digital forensic infrastructure, existing MLA mechanisms.
India	Mixed (federal-state), integrated into public health and legal structures.	Police conduct inquests; magistrates oversee custodial/maternal death investigations.	Early institutionalisation (1822 Calcutta, 1835 Madras medical colleges). Barriers: fragmented jurisdiction, regional disparities.	Moderate – NHRC autopsy guidelines, expanding forensic education.

Continued Table 2

Country	Institutional model (type of forensic medical service system)	Supervising authority / Death investigation structure	Key historical basis & integration barriers	Cooperation potential
Pakistan	Police-led, state-integrated medical forensic services.	Ministry of Interior; police supervise death investigations with medical officers.	Formal inclusion of medical practitioners in forensic work since laws of 1979. Barriers: limited forensic infrastructure, reliance on manual autopsies.	Moderate – Mutual Legal Assistance Act, 2020 enables cross-border legal cooperation.
Nepal	Decentralised, state-provided medicolegal services.	Police investigate criminal deaths; Chief District Officers supervise custodial death inquiries.	Medicolegal autopsies initiated in the 1960s. Barriers: resource scarcity, lack of ISO accreditation and training.	Low – weak institutional capacity, limited readiness for international forensic cooperation.

Source: compiled by the author of the study based on Mutual Legal Assistance (Criminal Matters) Act No. 22 (2020), S. Mussabekova *et al.* (2022), A. Abbas *et al.* (2024), A.N. Badanova *et al.* (2024), P. Dixit *et al.* (2024), A.N. Rana *et al.* (2024), A. Acharya *et al.* (2025)

The table shows that the capacity for international cooperation in forensic pathology across Kazakhstan, India, Pakistan, and Nepal is largely shaped by how and when their forensic systems were institutionalised, as well as by their current governance structures. Kazakhstan, with a centrally managed system established in 1951 and aligned with ISO standards and digital forensic tools, demonstrates the highest readiness for cross-border collaboration. India has a long historical foundation in forensic medicine dating back to the 19th century, but its mixed federal–state system creates regional disparities that moderate its cooperation potential despite national NHRC guidelines. Pakistan's police-led model, formally involving medical professionals since 1979, faces infrastructural limitations but benefits from The Mutual Legal Assistance (Criminal Matters) Act No. 22 (2020), giving it moderate cooperation capacity. Nepal, where medicolegal services began in the 1960s, remains decentralised, under-resourced, and lacks accreditation mechanisms, resulting in the lowest preparedness for international forensic cooperation.

Considering the institutional discrepancies and capacity gaps outlined in Table 1 and evidenced in the hypothetical scenario, a set of targeted recommendations was formulated to enhance the integration of forensic pathology into cross-border homicide investigations. The need to standardise forensic protocols emerged from both the comparative analysis and the case findings, which demonstrated that fragmented procedures in India, Pakistan and Nepal, especially in evidence collection, chain of custody and autopsy documentation, often lead to data loss, misinterpretation and rejection of expert reports. As shown in Kazakhstan's ISO-aligned system, harmonised standards improve interoperability; therefore, unified protocols based on World Health Organization (2020) and Interpol (2023) models are proposed to facilitate reliable evidence exchange.

It was also concluded that there is a clear need to strengthen bilateral and multilateral legal frameworks. This is because Mutual Legal Assistance Acts are applied unevenly across countries; for example, Pakistan already has such legislation, India has only partially adopted such legislation, while Nepal lacks it altogether. In addition, the hypothetical scenario pointed out that unclear timelines for submitting reports make cooperation difficult, especially in the countries like Kazakhstan, where strict deadlines for documentation are legally required. Formalising MLA Agreements (MLAAs) would address barriers identified in the table, including bureaucratic rigidity, fragmented jurisdiction and weak institutional capacity, by introducing standardised procedures for transmitting reports, biological samples and expert testimonies. Such MLAAs, rather than solely relying on regional working groups or shared laboratories, would create enforceable legal obligations, clarify responsibilities and allow inclusion of remote consultations, joint investigations and mutual recognition of forensic documentation – the elements that are directly derived from the theoretical framework emphasising institutional compatibility and legal synchronisation.

Furthermore, the recommendation to conduct regular audits and peer reviews stemmed from the hypothetical scenario, according to which, lack of transparency and accountability discouraged evidence sharing and public reporting, particularly in decentralised or police-led systems like those of Nepal and Pakistan. While Kazakhstan's structured oversight demonstrates the benefits of supervision, the absence of external evaluation mechanisms in South Asian countries supports the introduction of peer review as a tool for ensuring procedural accuracy and cross-border admissibility of findings. Inviting independent experts from partner countries to review autopsy practices and reporting aligns with international forensic standards and reduces procedural discrepancies highlighted in the comparative table. In conclusion, the proposed measures are not abstract policy suggestions but derive directly from comparative institutional analysis, the theoretical model of forensic cooperation and the practical constraints revealed in the case study. Strengthening standardisation, MLA-based legal mechanisms and transparency instruments collectively addresses the identified obstacles and supports the operational integration of forensic pathology into transnational homicide investigations.

Discussion

This research study emphasised the significance of cross-border cooperation in homicide investigation and crime prevention. The analysed case revealed that timely identification of individual patterns helps to reduce the risk of recurring crimes even if the suspect is outside the country. The significance of cross-border cooperation in homicide investigation was also confirmed in previous research, including F. Casino *et al.* (2022). Upon inspecting 36 research articles, the cited authors concluded that cross-border cooperation facilitated timely exchange of information needed for the effective homicide investigation. The consistency was noted between the mentioned findings and the results of the comparative analysis of the state regulation of forensic pathology practices carried out in this research. Both works, although inspecting preconditions for cross-border cooperation in criminal investigation, however, varied in their focus. While the abovementioned work had a broader focus, involving the exchange of any type of digital data, the present research has narrowed down its scope to MLAAs. Although stressing the significance of cooperation, this research study, however, did not neglect the impact of hindrances to cross-border homicide investigation. The analysed hypothetical scenario, in particular, revealed that cultural and linguistic features might slow down cross-border homicide investigation, especially in the absence of standardised protocols. The validity of the reached conclusions was confirmed through inspecting previous works, including N.T. Ika Bey & J.U.U. Domche Teko (2024). The mentioned experts, for example, stressed that while the application of mother tongue fosters cross-border cooperation, it might also become the source of communication breakdowns and incorrect interpretation of evidence. The case study analysis carried out in this research emphasised that despite shared cultural and linguistic roots, countries might differ in their dialects and legal terminologies, which affects cross-border homicide investigation.

This research study further argued that some of the mentioned differences and associated hindrances might be addressed through the use of universally accepted protocols. Based on the case study analysis, some countries, including Pakistan, lack uniform reporting standards, meaning their forensic reports might vary considerably across the regions. The need for standardised reporting was also confirmed in previous studies, including V. Cirielli *et al.* (2021). The mentioned experts studied 493 post-mortem examinations carried out in 2015-2018 and concluded that adherence to universal reporting standards could support robust cooperation between forensic and clinical pathologists. The detected difference was, however, in the fact that the cited experts assessed standardised reporting at the national level, while the current research study examined such reporting in the cross-border context. The discrepancy was also detected between this research study and the work of M.K. AlMazroua & N.F. Mahmoud (2022) whose Forensic Laboratory-Arabian Gate (FLAG) platform was designed to support the implementation of unified investigation practices rooted in the international standards. The mentioned researchers argued that the standardised platform would promote the best investigation practices and their coherency in the field of forensic science, which is consistent with the results of this research study. However, unlike M.K. AlMazroua & N.F. Mahmoud, who limited their study to the Arab region, this research advocated for the use of standardised protocols across several regions. The significance of such protocols was also emphasised by H.A.H. Almakrami *et al.* (2024) whose systematic review included such regions as North America, Europe, Asia, and Middle East. Despite a broader research focus, the above cited work is theoretical, while this research study is empirical. The detected difference means that in contrast to the work selected for comparative analysis, the results of this research study can be applied to facilitate the integration of forensic pathology in cross-border homicide investigation.

This research also examined the need for proper data management in carrying out cross-border forensic examination. The significance of proper data management was, for example, assessed by comparing forensic reporting strategies in Kazakhstan, where time frames are set in the Law of the Republic of Kazakhstan No. 44-VI LRK (2017) and Pakistan and India, where specific time frames are absent, which leads to some data being outdated and excluded from the evidence base when conducting cross-border homicide investigation. The significance of data management in forensic investigation was also elaborated in previous research, including S.L. Moulin *et al.* (2024), who studied cross-border profiling in Switzerland and France. The mentioned researchers stressed that forensic profiling method could be helpful in detecting series of fraudulent activities; which means that proper data management can support investigation and reduce re-offense rates at the state and cross-border levels. Despite the mentioned similarities, the work of S.L. Moulin *et al*., examining fraudulent activities, differs from this research study focused on homicide investigation. Partial consistency was also found between this research study and the work of N. Martynenko (2025) contrasting methodological support of forensic activity in Ukraine and the USA. The afore cited author in her work stressed the relationship between data management and forensic examination effectiveness and advocated for supporting such management at the legislative and regulatory levels. Similar to N. Martynenko, this research study examined the peculiarities of legal and regulatory support of forensic activities; but had a broader focus involving the Central Asian and South Asian regions. Cross-border data management in forensic investigations was also discussed by L.C. Diaz-Perez *et al.* (2022) whose research was focused on four Latin American countries. The holistic data management model introduced by L.C. Diaz-Perez *et al.* contained some elements elaborated further in this research study, including international agreements, accrediting authorities, and public and private forensic investigation agents.

However, the varying geographical and sociocultural focus of the mentioned studies suggests that the obtained results might be applied only after preliminary verification and contextualisation. A relatively similar context was found in the work of Z. Zhuan (2024) who examined forensic data management as a part of the Belt and Road initiative. Similar to this research study, the work of the cited author highlighted that the presence of traditional MLAAs does not make stakeholders immune to the challenges in cross-border data forensics. The mentioned researcher suggested overcoming the detected hindrances through developing digital forensic standards in line with the Belt and Road strategic goals. The semantic parallel was drawn between Z. Zhuan's recommendations to align forensic data management standards to the Belt and Road strategic goals and this research study's suggestion to standardise forensic data management and reporting practices to facilitate cross-border homicide investigation between the Republic of Kazakhstan and South Asia.

Therefore, similarities found between this research and previous studies suggests that the selected topic is relevant and requires further examination. The detected similarities also indicated the presence of universal challenges and persisting issues in applying forensic pathology tools to cross-border homicide investigation. The presented study, however, makes its own contribution to the existing discourse due to its unique focus, which is cross-border homicide, and the context involving Kazakhstan and some South Asian countries.

Conclusions

The integration of forensic pathology tools in cross-border homicide investigation between the Republic of Kazakhstan and selected South Asian countries remains a challenging issue. The comparative legal analysis of state regulation of forensic pathology practices in the Republic of Kazakhstan, India, Pakistan, and Nepal revealed state-specific peculiarities that might affect cross-border homicide investigation. In contrast to the Republic of Kazakhstan, which has established a two-layer system with a defined structure of expert bodies, accreditation mechanisms, and reporting rules, India, Pakistan, and Nepal do not have a separate law to inform forensic pathology practices. In these South Asia countries, forensic pathology experts are expected to align their practices to the National Human Rights Commission's guidelines on autopsy. Although guidelines might vary from country to country, they have a common goal of safeguarding human rights in potentially sensitive situations, supporting evidence-based data collection and analysis procedures, as well as enhancing transparency and accountability of forensic pathology procedures.

The hypothetical scenario analysis and comparison of forensic medical service systems across the selected countries revealed some barriers to cross-border cooperation in homicide investigation. The most common hindrances included the lack of standardised data forensic data collection, analysis, and reporting procedures; culture- and language-specific barriers; limited transparency and accountability of the forensic investigation system; weak or absent bilateral and multilateral legal frameworks; and low trust in the national crime investigation system. The study of the detected barriers informed the following recommendations to support the integration of forensic pathology tools into the cross-border homicide investigation: standardisation of national forensic investigation procedures rooted in the universally recognised Interpol and WHO protocols; strengthening of bilateral and multilateral legal frameworks through adopting MLAAs; and conducting regular audits and peer reviews of cross-border investigation processes. Audits were recommended to promote procedural accountability and facilitate an alignment of forensic procedures with international standards so that the collected evidence is admissible in courts across jurisdictions.

The study has several limitations, including a comparatively small sample that was limited to the Republic of Kazakhstan and three South Asian countries. Future studies might rely on a wider sample of countries, as well as include countries from different regions. The obtained results can be used to integrate forensic pathology strategies and tools to facilitate cross-border homicide investigation and create a safer space for the nationals of Central Asian and South Asian countries.

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Conflict of Interest

None.

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Juvenile justice reforms in Central Asia

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Abstract. The aim of the research was to determine the effectiveness of various models for reforming juvenile justice systems in Central Asian countries – Kazakhstan, Kyrgyzstan, Uzbekistan – with a comparative analysis of the Chinese experience. The study was conducted in three stages using a comprehensive methodology based on the analysis of regulatory acts of Kazakhstan, Kyrgyzstan, Uzbekistan, and China, official statistics from international organisations, and reports from human rights institutions. The research results established three main reform models in the Central Asian countries: the establishment of a full-fledged network of 19 specialised juvenile courts in Kazakhstan; the transformation of judicial practice through the introduction of alternative sanctions without structural changes in Kyrgyzstan; and the gradual introduction of specialised elements coupled with an increase in the minimum age of responsibility in Uzbekistan. Empirical analysis revealed high effectiveness of the reforms through quantitative indicators: an 83.3% reduction in the number of convicted minors in Kazakhstan from 2,654 to 443 individuals, and a 92% reduction in the application of imprisonment to children in Kyrgyzstan from 178 to 13 cases during the period from 2005 to 2024. As of the end of 2024, minors constitute only 0.2% of the total prison population in Kazakhstan, corresponding to approximately 64 individuals out of 32,171 convicted persons. The proportion of minors in the total prison population decreased to 0.19-0.20% in Kazakhstan and Kyrgyzstan compared to 0.80-1.67% in China and Uzbekistan. Legal analysis confirmed the gradual alignment of national legislation with international standards through the increase of the minimum age of criminal responsibility in Uzbekistan from 13 to 14 years and the introduction of comprehensive alternative sentencing measures. The practical significance of the study lies in the potential use of the analysis results for improving national strategies for juvenile justice reform, developing methodological recommendations for state authorities and international organisations, and formulating scientifically grounded approaches for the implementation of global child protection standards in post-Soviet legal systems

Keywords: juvenile offenders; international standards; alternative measures; law enforcement practice; deprivation of liberty; specialised courts

Introduction

The reform of juvenile justice systems in Central Asian countries has become critical in the context of global state commitments to child protection and the need to align national legislation with international standards of juvenile justice. The post-Soviet countries of the region, having inherited repressive approaches to working with child offenders, faced a discrepancy between national legislation and modern standards after acceding to the Convention on the Rights of the Child… (1989) and related international treaties, which created legal obligations to introduce specialised approaches to juvenile offenders. The main problems of non-compliance included the absence of specialised courts for hearing cases involving minors, limited application of alternative sentencing measures, insufficient training of law enforcement agencies, and a lack of effective rehabilitation mechanisms. Cultural traditions of authoritarian upbringing, socio-economic constraints in funding specialised programmes, and legal traditions oriented towards punitive measures created additional obstacles to the implementation of reforms. Regional specifics determined unique reform trajectories: Kazakhstan chose the path of creating specialised juvenile courts and developing probation services; Kyrgyzstan focused on alternative sentencing measures without structural changes to the judicial system; while Uzbekistan and Turkmenistan long maintained traditional approaches. These differences reflect varying paces of political modernisation and the degree of engagement in international cooperation in the field of children's rights, which necessitates comprehensive scientific analysis to identify effective models and practices.

A comprehensive analysis of the institutional aspects of juvenile justice was carried out by D. Ospanova *et al.* (2025), who identified key patterns in the formation of juvenile courts in foreign countries and determined that the establishment of specialised justice for minors was conditioned by a combination of social reform movements, changes in the legal philosophy regarding youth crime, and the necessity of applying rehabilitative approaches instead of punitive measures. The researchers demonstrated the effectiveness of the European system of juvenile justice, which is characterised by attention to children's rights, flexibility of sanctions, and the prioritisation of educational measures over punishment, while attributing particular importance to the specialisation of judges and a deep understanding of adolescent psychology. Y. Buribayev *et al.* (2023) focused on the issues of judicial specialisation in the context of Kazakhstani practice and substantiated the necessity of creating specialised social and labour courts as a means of enhancing the effectiveness of justice. The authors established that the specialisation of the judicial system constitutes the basis of its development and an important tool for dynamic progressive development, while simultaneously emphasising the need for a cautious approach to implementing specialisation, taking into account potential side effects on the proper administration of justice.

Procedural aspects of juvenile participation in criminal proceedings were analysed in detail by Z. Zhumabayeva (2020), who identified gaps in legislative regulation and deficiencies in the mechanism for realising minors' right to legal representation. The researcher established the incomplete content of the concept of "legal representative of a minor participant in criminal proceedings" and insufficient regulation of the procedural status of legal representatives, particularly regarding the representation of the interests of child witnesses and victims. G. Sheishekeeva *et al.* (2024) investigated the specifics of the diversion of minors from criminal justice in the system of the Kyrgyz Republic and identified three main components of this institution: formal conditions for applying diversion, guarantees of rights during its application, and organisational-procedural issues. The authors established that the national legislation of Kyrgyzstan generally complies with the United Nations Standard Minimum Rules for the Administration of Juvenile Justice, however, questions regarding the types of offences for applying diversion and lowering the age threshold from 16 to 14 years remain debatable. M. Musabayev *et al.* (2023) analysed theoretical provisions and legal norms of the administrative-legal protection of minors in European countries and identified priority areas for the administrative-legal protection of children's rights, including improving juvenile justice bodies, enhancing the quality of social services, and ensuring children's access to justice through the creation of specialised courts and the introduction of alternative measures.

U. Saliev (2023) analysed the legal frameworks and social initiatives for the protection of minors in Uzbekistan and established the multifaceted nature of children's rights, encompassing education, healthcare, protection from exploitation, and access to justice. The author demonstrated that the constitutional-legal status of children is guaranteed by the new Constitution of the Republic of Uzbekistan and relevant laws, while attributing particular importance to the Law of the Republic of Uzbekistan No. LRU-263 (2010) as a key instrument for protecting children's rights. G. Rakhimova *et al.* (2024) conducted a comprehensive analysis of the evolution of child protection laws in Kazakhstan since gaining independence and identified three phases of development: formation, establishment, and early development. The researchers identified improvements in various aspects of child protection, including the refinement of legislative goals and principles, while simultaneously noting that nearly half of the country's children live below the poverty line. Y. Shapoval *et al.* (2025) analysed the Kazakh approach to the rehabilitation and reintegration of children repatriated from Syria and Iraq under the humanitarian operation "Zhusan" and identified key elements of a successful programme through the restoration of children's legal status, minimisation of stigmatisation, and support for social rehabilitation. M. Nazim *et al.* (2024) conducted a comparative analysis of different countries' approaches to reforming juvenile justice systems and demonstrated the

necessity of a comprehensive approach to address problems of inequality in access to justice and the absence of universal standards, emphasising the importance of balancing public safety and rehabilitation. However, a comparative analysis of the effectiveness of different juvenile justice models in the context of the cultural and legal specificities of Central Asian countries remains an under-researched aspect of the scientific literature.

The aim of the study was to determine the patterns and specificities of the transformation of juvenile justice systems in Central Asian countries from inherited Soviet models to models compliant with international child rights standards. The research objectives were:

1. To analyse the institutional and legislative reforms of juvenile justice in Central Asian countries (Kazakhstan, Kyrgyzstan, Uzbekistan) considering the experience of China (PRC) to identify the main models of legal system transformation and to reveal specific regional approaches to the modernisation of juvenile justice;

2. To conduct an empirical analysis of the effectiveness of the implemented reforms through statistical indicators to assess the practical results of the humanisation of juvenile justice systems;

3. To undertake a legal analysis of the compliance of national juvenile justice systems with international child rights standards to establish the degree of implementation of the principles of the UN Convention on the Rights of the Child.

Materials and Methods

The research was conducted based on a comprehensive theoretical-legal approach, utilising the conceptual frameworks of international human rights law and comparative jurisprudence. The theoretical foundation consisted of doctrinal provisions regarding the implementation of international standards for child protection into national legal systems, particularly the principles enshrined in the Convention on the Rights of the Child… (1989) and related international instruments, including the Resolution of the United Nations General Assembly No. A/RES/40/33 (1985), the Resolution of the United Nations General Assembly No. A/RES/45/112 (1990), and the Resolution of the United Nations General Assembly No. 45/113 (1990). The methodological framework was composed of concepts of transitional justice and the theory of legal transformation in post-Soviet states, which enabled an analysis of the specificities of the transition from repressive to rehabilitative models of working with juvenile offenders. The research was conducted in three sequential stages corresponding to the set objectives, each involving the application of specific methods and analysis of relevant groups of sources to ensure a comprehensive examination of the issues surrounding juvenile justice reform in the region.

The first stage of the research was dedicated to analysing the institutional and legislative reforms of juvenile justice in Central Asian countries using historical-legal and comparative-legal methods. The historical-legal method was applied to study the genesis and evolution of juvenile justice systems, allowing for the tracing of the transformation from Soviet models to modern specialised systems through an analysis of key normative legal acts, namely the Concept for the Development of the Juvenile Justice System of the Republic of Kazakhstan (Decree of the President of the Republic of Kazakhstan No. 646, 2008), the Law of the Republic of Kazakhstan No. 401-IV (2011), Penal Code of the Republic of Kazakhstan No. 226-V (2014) and CPC – Criminal Procedure Code of the Republic of Kazakhstan No. 231 (2014) and the Law of the Republic of Kazakhstan No. 38-IV LRK (2016), and the Criminal Code of the Kyrgyz Republic No. 19 (2017). The comparative-legal method provided the opportunity to juxtapose different national approaches to reform through an analysis of the institutional models of Kazakhstan, Kyrgyzstan, and Uzbekistan, as well as a comparison with the Chinese experience based on the Law of the People's Republic of China (2020), the Law of the People's Republic of China No. 40 (2021), and the working report of the Supreme People's Court of the PRC (Xinhua News Agency, 2021) to identify regional specificities and common trends.

The second stage involved an empirical analysis of the effectiveness of the implemented reforms using the statistical method and the method of content analysis of official reports. The statistical method enabled a quantitative analysis of the dynamics in indicators related to the application of punishments to juveniles, based on data from the World Prison Brief: Kazakhstan (n.d.), World Prison Brief: China (n.d.), World Prison Brief: Kyrgyzstan (n.d.), World Prison Brief: Uzbekistan (n.d.), UNICEF (United Nations Children's Fund) reports for Kazakhstan (Juvenile justice, n.d.; Dialogue about the future…, 2024), Kyrgyzstan (Protecting children, n.d.; UNICEF Kyrgyzstan Country Programme 2023-2027, 2023), and Uzbekistan (Access to justice for children, n.d.; Child-friendly justice system…, 2024), as well as materials from the Joint Staff Working Document (2023), official data from the State Penitentiary Service of the Kyrgyz Republic (2024), and reports from the Supreme People's Procuratorate of the People's Republic of China (2021). Reports from the United Nations Office on Drugs and Crime (2024) regarding the development of non-custodial sanctions in the region were also utilised. The systemic-structural method was used to analyse the interconnections between different elements of juvenile justice systems and to identify patterns in their functioning through a comparison of statistical indicators from different countries and reform periods.

The third stage included a legal analysis of the compliance of national systems with international child rights standards using the formal-legal method and the method of legal hermeneutics. The formal-legal method was applied to analyse provisions of national legislation and international legal instruments to establish the degree of conformity of national norms with international standards. Analytical materials from international human rights organisations served as additional sources, namely reports (Minimum ages of

criminal…, n.d.; Our programmes: Central Asia, n.d.; Experts: Juvenile justice..., 2021; Monitoring the criminal justice sector…, 2025, which provided an independent assessment of the state of children's rights observance in the studied countries. Reports from the US Department of State on human rights (United States Department of State, 2023) and government responses to questions from the Committee on the Rights of the Child (2023) were analysed. This comprehensive source base ensured the objectivity of the research by combining official statistical data, normative legal acts, and independent analytical assessments from international organisations, thereby contributing to the achievement of the research aim through a comprehensive examination of juvenile justice reform processes in the region.

A limitation of the study was the absence of complete statistical data on recidivism among juveniles and the long-term results of rehabilitation programmes in all the studied countries, which complicated a full assessment of the effectiveness of different reintegration models. This circumstance necessitated a focus on available indicators of punishment application and institutional changes as the primary indicators of reform effectiveness.

Results

Institutional and legislative reforms of juvenile justice in Central Asian countries

The analysis of the development of juvenile justice in the Central Asian region demonstrates a gradual transition from the inherited Soviet model to specialised juvenile justice systems that comply with international child rights standards. In the 1990s, the situation in the sphere of juvenile justice in the region was far from meeting international requirements: a 1999 UNICEF study noted systemic violations of children's rights in the justice process in Central Asia, from the moment of detention and pre-trial detention to sentencing and serving punishment. Throughout the criminal justice process for children, instances of police brutality aimed at extracting confessions were frequently recorded, juveniles were routinely held in pre-trial detention, judges and investigators lacked specialised training in working with children, alternative measures were practically not applied, and consequently, juveniles were often sent to places of deprivation of liberty even for relatively minor offences, where conditions of detention were poor, sometimes bordering on inhuman (UNICEF Regional Office..., 2012).

The Republic of Kazakhstan demonstrated the most consistent approach to building a comprehensive juvenile justice system, initiating this process with the approval of the Concept for the Development of the Juvenile Justice System for 2009-2011 (Decree of the President of the Republic of Kazakhstan No. 646, 2008). This strategic document defined the fundamental directions of transformation: creating specialised juvenile courts throughout the country, forming police units for juvenile affairs with preventive and investigative functions, introducing a probation service to supervise the execution of non-custodial sentences, developing a system for coordination between child protection institutions, building social-psychological support services within the juvenile justice system, as well as specialised training for judges, prosecutors, and other professionals working with children (UNICEF Regional Office..., 2012). The practical implementation of this concept occurred rapidly: after an experimental launch of two pilot courts in Astana and Almaty in 2007, by February 2012, an extensive network of 19 specialised courts was operational in all regional centres and major cities of the country. Kazakhstan became the first state in Central Asia and the entire post-Soviet space to introduce a full-fledged system of juvenile courts for handling criminal, civil, and administrative cases involving children (Syzdykova *et al*., 2021).

Parallel to the judicial reform, a comprehensive transformation of other institutions within the juvenile justice system took place. Positions for juvenile prosecutors were created within the prosecution bodies, and specialised units of juvenile affairs inspectors were formed within the police, their activities focused on the prevention of youth crime and the investigation of offences committed by children. An important step was the transfer of reception-distribution centres for juveniles from the Ministry of Internal Affairs to the education system, transforming them into Centres for Temporary Isolation, Adaptation, and Rehabilitation of Juveniles under the leadership of the Ministry of Education and Science. This measure signified a fundamental change in philosophy from a punitive to a socio-rehabilitative approach: juvenile offenders are held not in conditions resembling detention centres, but in special educational institutions under the supervision of educators, with prosecutors losing the right to arbitrarily place children in such institutions. To ensure the coordination of efforts among various agencies in implementing juvenile justice, the Human Rights Commissioner (Ombudsman) was endowed with a mandate to conduct independent monitoring of the situation regarding children's rights in criminal proceedings. Services for free legal aid for children and centres for socio-legal services for juveniles and their families also began to be established (UNICEF Regional Office..., 2012).

Legislative reforms in Kazakhstan have reflected a fundamental shift in approaches to the criminal liability of minors. In 2014, the Penal Code of the Republic of Kazakhstan No. 226-V (2014) and Criminal Procedure Code of the Republic of Kazakhstan No. 231 (2014) came into force, embodying the principles of the humanisation of punishment for children. The application of detention for minors at the pre-trial stage was significantly restricted: whereas prior to the 2014 reforms, the 1997 Criminal Procedure Code permitted holding a minor without a court sanction for up to 72 hours, after the new CPC-2014 came into effect, the maximum period of such detention for minors was reduced to 24 hours in exceptional situations related to particularly serious crimes, and it can only be extended to 72 hours with a court sanction. Detention became an exceptional preventive measure, with alternatives such as transfer to parental supervision, bail, or house arrest. The legislator expanded the possibilities for

exemption from criminal liability through the application of compulsory measures of an educational nature, probation, and mediation. The adoption of the Law of the Republic of Kazakhstan No. 401-IV (2011) allowed for the application of reconciliation procedures in cases involving juvenile offenders, facilitating the implementation of restorative justice in practice. A key achievement was the adoption of the Law of the Republic of Kazakhstan No. 38-IV LRK (2016), which introduced a comprehensive probation system in the country. According to this law, probation is defined as a system of supervision measures and socio-legal assistance aimed at correcting the behaviour of individuals, including minors, and preventing them from reoffending. The probation service monitors the execution of non-custodial sentences by convicted children and provides them with comprehensive support for resocialisation, ranging from assistance in continuing education to employment or receiving psychological help.

The Kyrgyz Republic chose an alternative model of reforms, focusing its efforts on transforming sentencing policy and ensuring alternative measures without establishing separate specialised judicial institutions. Instead, within some courts of general jurisdiction, judges responsible for juvenile cases were appointed and juvenile judicial panels were created. The main emphasis of the Kyrgyz reforms was a radical change in judicial practice regarding the sentencing of children. A series of legislative changes, notably the adoption of the new Criminal Code of the Kyrgyz Republic No. 19 (2017), which introduced more opportunities to avoid imprisoning children, reflected a fundamentally different approach compared to raising the age of criminal responsibility. Instead of changing age thresholds, Kyrgyzstan opted for a strategy of humanising punishment: it abolished imprisonment for non-serious crimes and for individuals under 16 for crimes of medium gravity, reduced the maximum prison term from 15 to 10 years, and expanded non-punitive sanctions, including community service. At the same time, the system provides for referral to closed-type special educational institutions for a period of 6 to 24 months, although Kyrgyzstan has only one such special school for boys aged 11-14, with the majority of its pupils being placed there due to truancy or running away from home rather than for offences. A key feature of the Kyrgyz model has been the widespread practice of suspended sentences, which are possible for any crime except particularly serious ones, directly focusing on providing alternatives to imprisonment rather than changing the age of responsibility (UNICEF Regional Office..., 2012).

The Republic of Uzbekistan began active juvenile justice reforms somewhat later compared to Kazakhstan and Kyrgyzstan, especially after President Shavkat Mirziyoyev came to power in 2016. The delay in reforms was due to previous state policy, which was characterised by limited readiness for structural changes in the judicial system and less engagement with international child protection initiatives (UNICEF, 2015). President Mirziyoyev initiated a policy of large-scale reforms aimed at liberalising and democratising society, including bringing national legislation into line with international standards. His administration intensified cooperation with international organisations on human rights protection and building a rule-of-law state (Presidential Decree of the Republic of Uzbekistan No. UP-4947, 2017). As evidenced by a UNICEF and Supreme Court of Uzbekistan study, the country still lacks specialised judges, prosecutors, and lawyers working exclusively on cases involving children. All cases concerning minors are heard by general courts, which often leads to insufficient consideration of the age-specific characteristics of the defendants. The state guarantees a free defence lawyer only to children in conflict with the law, whereas child victims or witnesses do not have automatic access to legal assistance (Access to justice for children, n.d.).

The most important step was raising the minimum age of criminal responsibility. Historically, Uzbek criminal law had a specific provision: the general age of responsibility was 16, for most serious crimes it was 14, but for intentional murder under aggravating circumstances, liability began at 13 (Minimum age of criminal…, 2021). Henceforth, no person under the age of 14 can be held criminally liable in Uzbekistan, which aligns with the recommendations of the Committee on the Rights of the Child (2007), and the principles of the UN Convention on the Rights of the Child (United Nations General…, 1989).

With UNICEF support, a Strategy and Action Plan on Ensuring Children's Access to Justice is being developed, which is intended to lay the groundwork for creating a more specialised juvenile justice system. This strategy is expected to provide for the introduction of training for judges and investigators on child psychology, and possibly the creation of separate juvenile panels in courts or special court chambers within the system of courts of general jurisdiction (Access to justice for children, n.d.). While such courts do not yet exist, Uzbekistan is focusing on other elements of the reform: improving offence prevention and developing alternatives to punishment. In cooperation with UNICEF, two closed special institutions for "difficult" adolescents have been reformed, introducing behaviour correction and preparation for reintegration into society programmes instead of a punitive approach. Within the investigative units of the Ministry of Internal Affairs, at least 3 "child-friendly rooms" have been created for interviewing children using a special, child-friendly methodology, which were subsequently expanded to 39 police departments across the country. This allows for the interrogation of child victims or witnesses of crimes in a safe environment, taking into account their psychological state.

The Chinese model of juvenile justice is distinguished by the scale of its institutional infrastructure and the specifics of coordination between different levels of the system. To ensure uniformity in law enforcement practice, the Supreme People's Court in 2021 established a separate office and six regional juvenile divisions, which develop standardised approaches to hearing cases involving violence, bullying, and child trafficking (Xinhua News Agency, 2021).

Legislative reforms included the 2020 Juvenile Protection Code, which introduced family guidance programmes and inter-agency commissions for monitoring children's cases (Law of the People's Republic of China, 2020), and the Law of the People's Republic of China No. 40 (2021), which establishes the priority of non-punitive measures and grants equal educational rights to minors under probation. Compared to the experience of Central Asian countries, the Chinese model is characterised by centralised coordination through a vertical system of specialised divisions and shows similarities with the Kazakh approach regarding the development of probation and mediation, while differing in the significantly larger scale of its institutional network and an emphasis on standardising judicial practice through separate coordination structures.

The experience of Central Asian countries in the field of juvenile justice reform demonstrates the importance of a comprehensive approach to the transformation of legal systems. The success of reforms is largely dependent on the political will of the state, the presence of strategic planning, and effective coordination between different institutions. The Kazakh model confirms that the gradual introduction of alternative sentencing measures combined with institutional changes can lead to a radical reduction in the number of children in the penitentiary system. The Chinese experience demonstrates the possibility of creating a large-scale institutional infrastructure for juvenile justice, although legislative decisions regarding the differentiation of the minimum age of criminal responsibility remain a subject of debate in the context of international standards. At the same time, regional experience attests that the pace and depth of reforms differ significantly depending on socio-economic conditions, legal traditions, and societal readiness for change.

Empirical analysis of reform effectiveness: Statistical indicators and comparative analysis

Statistical analysis of the results of juvenile justice reforms in Central Asian countries demonstrates the significant effectiveness of the implemented measures in reducing the repressiveness of the system and increasing its humanity. The analysis covers the period from 2009 to 2017 due to the limited availability of systematic official statistics for later periods, as national penitentiary systems in the region do not always maintain separate records for minors or publish such data with the necessary regularity. In Kazakhstan, during the specified period, the number of registered crimes committed by children decreased from 6,651 to 3,148 cases per year, representing a reduction of 52.7%. The trend in the number of convicted minors is important: whereas 2,654 children were convicted in 2009, only 443 were convicted in 2017, meaning a reduction of 83.3% or an almost six-fold decrease (Juvenile justice, n.d.). According to the latest available data, as of the end of 2024, the proportion of minors in Kazakhstan's penitentiary system is only 0.2% of the total prison population, confirming the sustainability of the positive trend in reducing the application of custodial sentences for children (World Prison Brief: Kazakhstan, n.d.). This was made possible by the broader application of alternative measures instead of criminal penalties, specifically probation, mediation, and suspended sentences.

Substantial changes have occurred in the application of custodial measures. The number of minors held in pre-trial detention centres decreased from 475 individuals in 2009 to 166 in 2017, representing a reduction of 65.1%. In correctional institutions, the number of children decreased even more radically: from 427 individuals at the end of 2009 to only 49 in 2017, i.e., a reduction of 88.5% or more than 8.7 times (Juvenile justice, n.d.). According to official statistical data from the World Prison Brief: Kazakhstan (n.d.), maintained based on information from the national prison administration via the organisation Penal Reform International (Our programmes: Central Asia, n.d.), as of 26 December 2024, minors under the age of 18 constitute 0.2% of the total prisoner population, which amounts to approximately 64 individuals out of a total of 32,171 convicted persons. Due to the implementation of a policy of humanising criminal legislation, the overall penitentiary contingent has more than halved: from 78,029 individuals in 2000 to 32,171 individuals in 2024, and the incarceration rate decreased from a peak of 566 persons per 100,000 population in 2002 to 163 persons in 2024, contributing to the country's shift from leading positions in the world ranking in the early 2000s to moderate indicators in the international context (World Prison Brief: Kazakhstan, n.d.). Detailed statistical indicators of the detention of minors in the custodial system by country in the region are presented in Table 1.

Table 1. Indicators of minors in custodial systems (2018-2024)

Country	Date of data	Prison population, persons	Incarceration rate (per 100,000)	Proportion of minors, %
Kazakhstan	26 December 2024	32,171	163	0.20
Kyrgyzstan	31 December 2023	7,728	112	0.19
Uzbekistan	1 January 2022 / September 2022*	29,000	85	1.67
China	31 December 2018**	1,690,000	119	0.80

Note: *the absolute number of minors (484 individuals) was reported by the delegation of Uzbekistan during the 91st session of the UN Committee on the Rights of the Child (12 September 2022) – this is the most recent officially stated indicator; the ratio 484 / 29,000 = 1.67 %; **data for China as of 31 December 2018 are the latest official statistical indicators published by the national penitentiary administration. Subsequent data are not officially published

Source: created by the author based on World Prison Brief: Kazakhstan (n.d.), World Prison Brief: China (n.d.), World Prison Brief: Kyrgyzstan (n.d.), World Prison Brief: Uzbekistan (n.d.), Joint Staff Working Document (2023)

Analysis of the data presented in Table 1 demonstrates certain differences in the approaches of Central Asian countries and China to the application of custodial sentences for minors, reflecting different stages of reforming their national juvenile justice systems. Contrasting results are observed between Kazakhstan and Kyrgyzstan as reform-leading countries, China with intermediate indicators, and Uzbekistan as a state in the initial stages of transformation. The statistical indicators confirm the effectiveness of a comprehensive approach to reform, where legislative changes are accompanied by institutional transformations and changes in law enforcement practices. The lowest indicators for the share of minors among prisoners are demonstrated by Kazakhstan (0.20%) and Kyrgyzstan (0.19%), which contrasts significantly with the indicators of Uzbekistan (1.67%) and China (0.80%), showing an eightfold difference between the countries with the lowest and highest indicators. The statistical data from the table reveal the potential for further improvement of juvenile justice systems in the region, particularly in the context of achieving full compliance with the principle of ultima ratio – using deprivation of liberty only as a measure of last resort, as stipulated by Article 37(b) of the UN Convention on the Rights of the Child. The indicators in Uzbekistan (1.67%) and China (0.80%) may reflect not only different starting points for reforms but also such specific factors as limited financial resources for developing alternative programmes, insufficient training of judicial personnel in the field of juvenile justice, and traditional law enforcement practices oriented towards punitive measures, highlighting the necessity of considering the national context when assessing the effectiveness of reform.

Kyrgyzstan demonstrated the most notable results in reducing the application of custodial sentences for minors. The number of cases where custodial sentences were imposed on minors decreased by 92% over the period from 2005 to March 2024 – from 178 sentences to only 13 cases (Dialogue about the future…, 2024). This result was achieved thanks to key legislative changes, particularly the adoption of the Criminal Code of the Kyrgyz Republic No. 19 (2017), which expanded the possibilities for applying alternative sentencing measures, including the abolition of imprisonment for non-serious crimes for persons under 16 years of age and a significant expansion of non-custodial sanctions (Dialogue about the future…, 2024). According to data from the State Penitentiary Service of the Kyrgyz Republic (2024), in the single republican juvenile correctional colony, only 13 convicted individuals are serving their sentences against a capacity limit of 134 persons, demonstrating a radical shift in judicial practice towards suspended sentences, probation, and transfer under parental supervision. The success of juvenile justice reforms became part of a broader transformation of the entire criminal system of Kyrgyzstan, evidencing the systemic nature of changes in approaches to justice. According to United Nations Office on Drugs and Crime (2024), despite a 22% increase in the total number of convictions from 2020 to 2023, the number of non-custodial sentences increased by 55%, and the overall prison population decreased by 20% from 9,658 to 7,728 prisoners. This dynamic confirms the effectiveness of a comprehensive policy of humanising criminal justice, where successful practices in working with juvenile offenders are gradually extended to the entire system, demonstrating the possibility of a successful transition from punitive to rehabilitative approaches even in post-Soviet legal systems with limited resources (United Nations Office on Drugs and Crime, 2024).

A comparative analysis with the Chinese experience reveals distinct trends in regional approaches to juvenile justice. China introduced specialised justice for minors: the first juvenile court in the People's Republic of China was established as early as 1984 in Shanghai, after which juvenile divisions of courts were gradually created in many cities (Minimum ages of criminal…, n.d.). The minimum age of criminal responsibility in China has been relatively high for a long time: the general age is 16, and for certain serious crimes – 14 (China: Revised juvenile…, 2021). The Chinese system has traditionally proclaimed the principle of "education first, punishment second" regarding minors. According to data from the Supreme People's Procuratorate of the People's Republic of China (2021), the number of convicted minors in China decreased from 88,891 in 2008 to 35,743 in 2016. According to the latest official data, in 2024, Chinese procuratorial authorities reviewed cases involving 101,526 minor suspects, which is 4.3% more than the previous year, indicating a shift in the trend towards an increase in the number of cases involving children, demonstrating a global trend towards the humanisation of approaches to juvenile offenders (Davies, 2021).

Simultaneously, the number of registered crimes committed by minors in China demonstrates complex dynamics: according to official data from the Supreme People's Procuratorate of the People's Republic of China (2021), after an increase in indicators in 2019 by 7.51% and 5.12% respectively, in 2020 the number of juvenile cases submitted for arrest consideration decreased by 21.95% to 37,681 individuals, and for criminal case initiation consideration – by 10.35% to 54,954 individuals, which was the lowest indicator in five years. The most common youth crimes are property crimes and minor violent acts - theft, robbery, fights, hooliganism. At the same time, serious violent crimes among minors remain rare, although they show a tendency to increase their share in the overall crime structure. The vast majority of young offenders in China – over 95% – are boys, often from disadvantaged families or children of migrants whose parents left them with relatives while going out to work (Davies, 2021). The social causes of youth crime – lack of parental supervision, school failures, unemployment – are recognised by the Chinese authorities as primary risk factors, which led to the development of targeted state prevention programmes, including enhanced social support for families of labour migrants, the creation of specialised educational institutions for "left-behind children" and the implementation

of comprehensive early intervention measures at the local community level.

In Uzbekistan, according to official data, a moderate number of crimes committed by minors is recorded annually – for example, in 2019, courts reviewed 497 cases of crimes by children, and in 2020 – 399 cases. However, in 2021 the indicator increased sharply: in just 9 months, 707 cases were reviewed (Experts: Juvenile justice…, 2021). This surge may be linked to improved record-keeping, changes in legislation, or an increase in adolescent crime in the post-pandemic period. Participants in the CABAR expert discussion note that the overall level of youth crime in Uzbekistan remains lower compared to other countries in the region: if in Uzbekistan 707 cases were reviewed in 9 months in 2021, then in Kazakhstan in 2020, 1,873 offences were registered per year, which, when adjusted for population, constitutes a higher rate, possibly due to a more conservative society and family control. The main causes of juvenile offences are cited as an unfavourable psychological atmosphere in the family, lack of parental attention, especially the mass labour migration of parents abroad, which results in children being left in the care of relatives, as well as poverty and the influence of the street (Experts: Juvenile justice…, 2021).

Empirical data indicate that the humanisation of juvenile justice has not led to an increase in adolescent crime in the region. On the contrary, Kazakhstan and Kyrgyzstan are observing a stabilisation or decrease in the level of youth offences. In China, official data for the period 2008-2019 demonstrate contradictory trends: the number of initiated cases against minors increased from 58,307 in 2018 to 61,295 in 2019, yet the number of convicted minors radically decreased from 88,891 in 2008 to 35,743 in 2016, indicating a change in approaches to record-keeping and the filtering of cases, with a greater number being resolved without a conviction (Davies, 2021). Judicial authorities often decided not to refer a case of an offence committed by a child to court if it was possible to limit the response to educational measures. Instead, in China during 2014-2019, the number of applications of so-called "informal responses" increased – where a teenager was registered with the police, preventive work was conducted with them, but they were not brought to court. The results of the conducted research confirm the conceptual proposition that alternative measures and early prevention are capable of curbing child crime no worse, and sometimes even better, than strict punishment.

An analysis of the socio-economic consequences of the reforms reveals a positive correlation between investments in rehabilitation programmes and a reduction in recidivism. Together with non-governmental organisations in Uzbekistan, free legal aid is provided to children through the "Madad" and "Istikbolly Avlod" organisations: during 2021-2023, it was received by 2,137 children and 255 adults from vulnerable categories (Access to justice for children, n.d.). In Kyrgyzstan, a coordination mechanism for assisting children returning from places of detention functions, where social services together with non-governmental organisations provide support for such adolescents in the capital Bishkek, and this experience is recommended for expansion throughout the country (Protecting children, n.d.). However, certain problems persist: Kyrgyz legislation is still not fully harmonised internally, there are contradictions in the definitions of the age of children in different acts, for example, Articles 154, 155, 156, 157, 158 of the Criminal Code of the Kyrgyz Republic contain different formulations regarding the age categories of children ("aged from fourteen to eighteen years", "who has not reached the age of fourteen", "who has not reached the age of sixteen"), the issue of statutes of limitations for prosecuting sexual crimes against children is not clearly regulated, which limits victims' access to justice. A problem is the lack of social services at the community level: after returning home, children face an insufficient level of support – neither psychological, nor educational, nor assistance with employment (Monitoring the criminal justice sector…, 2025). A shortage of qualified personnel – social workers, child psychologists, probation specialists – and their insufficient training for working specifically with juvenile offenders is also noted.

Legal analysis of the compliance of national systems with international child rights standards

A legal assessment of the compliance of the national juvenile justice systems of Central Asian countries with international child rights standards reveals both significant progress in the implementation of the core principles of the Convention on the Rights of the Child… (1989), and certain gaps requiring further improvement. All the studied states have ratified the UN Convention on the Rights of the Child, Article 40 of which obligates them to ensure humane treatment of child offenders and to create a separate child-friendly justice system. Additionally, international standards, such as the Resolution of the United Nations General Assembly No. A/RES/40/33 (1985) (minimum standards for the administration of juvenile justice), the Resolution of the United Nations General Assembly No. 45/113 (1990) (regarding the prevention of juvenile delinquency) and the Resolution of the United Nations General Assembly No. A/RES/45/112 (1990) (regarding the protection of children deprived of their liberty), establish comprehensive recommendations for states regarding the minimum age of criminal responsibility, rehabilitation instead of punishment, and the prohibition of inhuman treatment of children.

Simultaneously, contemporary discussions in certain countries of the region demonstrate the complexity of balancing international standards and national realities. In Kazakhstan, in October 2024, a group of deputies of the Mazhilis proposed lowering the minimum age of criminal responsibility for certain particularly serious crimes, for instance for rape, from 14 to 12 years. This initiative was prompted by an increase in high-profile cases of brutal crimes committed by teenagers, and deputy Magerram Magerramov argued the necessity of such changes

by the insufficient effectiveness of prevention and the excessive leniency of the current system towards teenagers who have committed serious crimes. In his opinion, the current system is too lenient towards teenagers who have committed serious crimes, allowing them to avoid real responsibility due to their age (Kazakhstan proposes lowering age…, 2024). The initiative sparked discussion in society and among legal professionals: proponents believe that certain 12-13-year-old offenders are capable of understanding the nature of their actions and should be punished for the most serious crimes, while opponents emphasise the non-compliance of such a proposal with the principles of the Convention on the Rights of the Child… (1989). However, as of 2025, no decision has been made, and the minimum age of criminal responsibility remains unchanged (Minimum age of criminal…, 2021). A systematised comparative analysis of key aspects of juvenile justice reform in the region is presented in Table 2.

Table 2. Comparative analysis of juvenile justice systems in Central Asian countries: Institutional models, legal mechanisms, and current reforms

Key Aspect	Kazakhstan	Uzbekistan	Kyrgyzstan	China
Specialised Institutions	A network of 17 regional Child Rights Commissioners, who monitor all institutions, including detention facilities	The Department for Minors' Affairs of the General Prosecutor's Office; from 2024 – pilot juvenile courts in three regions	A Juvenile Probation Service under the Ministry of Justice; regional commissions for the diversion of children from criminal prosecution	Commissions for the Protection of Minors under local governments; specialised divisions in people's courts
Alternatives to Deprivation of Liberty	Probation, mediation, and "pre-trial agreements" for children (a joint EU-UNICEF project)	The "Child-Friendly Justice" programme promotes mediation and social services; a large-scale probation network is absent	Diversion ("otvedenie") and conditional release are the primary tools; practical implementation remains limited	The 2021 Law obliges social protection authorities to apply preventive and educational measures instead of imprisonment for 12-15-year-olds
Monitoring and Legal Protection	The Ombudsman and NGOs have the right to "unannounced visits" to juvenile colonies The annual review of the Department's practice is submitted to parliament; public oversight remains sporadic so far	Public councils at colonies and UN/ UNICEF monitoring groups; powers are inconsistent	Public councils at colonies and UN/UNICEF monitoring groups; powers are inconsistent	Regional committees for education and police operate joint mobile units; data is verified by the State Council
Age-Related Policy	Threshold of 16 years; for 14-year-olds – a list of serious offences; a 2024 draft law proposes lowering the threshold to 12 years for specific crimes	The basic minimum age was raised to 14 years (2021); a lowered threshold is absent	Threshold of 16 years; for 14-year-olds – a list of serious offences; a 2024 draft law proposes lowering the threshold to 12 years for specific crimes	General age of 16 years; a lowered threshold of 12 years for "particularly cruel" offences (2021 reform)
Recent Reforms (2023-2025)	The "Safe Childhood" National Programme – focus on the social reintegration of children and the implementation of electronic case management	Presidential Decree PP-5060 of 2021 launched the reform; in 2025, the creation of a nationwide network of juvenile courts is planned	The 2021 Criminal Code added a special chapter on probation; in 2024, the Ministry of Justice approved a methodology for risk assessment in diversion cases	In April 2025, the State Council adopted an action plan for a full transition to "restorative rooms" in all district courts by 2027

Source: created by the author based on Juvenile justice (n.d.), Access to justice for children (n.d.), Protecting children (n.d.), Our programmes: Central Asia (n.d.), China: Revised juvenile… (2021), UNICEF Kyrgyzstan Country Programme 2023-2027 (2023), Dialogue about the future… (2024), Child-friendly justice system… (2024), G. Sheishekeeva *et al.* (2024)

The comparative analysis in Table 2 reveals a diversity of institutional models and legal mechanisms employed by the countries of the region to achieve the common goal of humanising justice for minors. The presented data demonstrates that the success of reforms does not depend on choosing a single, unified model, but is determined by the comprehensiveness of the approach and the consistency of implementing changes at all levels of the justice system. An important fact is that all the studied countries, regardless of the pace and specifics of their reforms, are moving towards raising the minimum age of criminal responsibility and expanding alternative sentencing measures. The table also illustrates an evolution from creating separate specialised institutions towards forming integrated systems of inter-agency cooperation, which indicates a deepening understanding of the complex nature of juvenile delinquency issues. It is worth noting the varying paces and priorities of reform, reflecting both objective resource constraints and different political approaches to juvenile justice matters. At the same time, the table reveals the need for further strengthening inter-agency coordination and developing specialised support services for minors, which remains a common challenge for all countries in the region, regardless of the achieved level of development of their juvenile justice systems. Furthermore, the comparative analysis underscores the importance of considering cultural

specificities and traditions when implementing international standards, as this allows for the organic integration of new approaches into national legal systems.

The legal analysis of procedural guarantees reveals significant progress in ensuring the rights of children in criminal proceedings. In Kyrgyzstan, the right of minors to free legal aid is ensured through the establishment of a state-guaranteed legal services system with dedicated lawyers trained in child justice matters (Committee on the Rights of the Child, 2023). It is also ensured that arrested children are held separately from adults, although issues of overcrowded detention facilities sometimes arise (United States Department of State, 2023). At the normative level, Kyrgyzstan has largely aligned its legislation with international standards for child protection – as evidenced by expert assessments noting the country's progress in fulfilling the requirements of the UN Convention on the Rights of the Child (Monitoring the criminal justice sector…, 2025).

The analysis of compliance with the ultima ratio principle (last resort), enshrined in Article 37(b) of the Convention on the Rights of the Child… (1989), according to which deprivation of liberty should be applied only as a measure of last resort, demonstrates significant progress in all studied countries. All countries in the region declare their commitment to this principle regarding minors, as enshrined in international law (Art. 37(b) of the Convention on the Rights of the Child). It is indicative that both in more authoritarian China and in more democratic Kyrgyzstan, the rate of child incarceration has significantly decreased over recent decades – this is a global trend, reinforced by UN ideals. Statistical data confirm that alternative measures have become the primary response to juvenile offences (Monitoring the criminal justice sector…, 2025). At the same time, problematic areas requiring attention remain: psychological and legal support for child victims of crime is insufficiently ensured; prosecuting perpetrators is often complicated by statutes of limitations or stigma; all countries experience a shortage of funding for rehabilitation programmes and trained social workers; societal stereotypes regarding "soft" treatment of young offenders can pressure politicians to change the course of reforms.

The Uzbek government, in cooperation with UNICEF, is implementing diversion programmes – an alternative approach to formal court proceedings, provided for by Article 40(3)(b) of the Convention on the Rights of the Child… (1989) and recommended by the Resolution of the United Nations General Assembly No. A/RES/40/33 (1985), i.e., channelling adolescents who have committed a first-time offence without significant harm away from the formal court system into programmes of social and educational influence. The necessity of expanding the practice of alternatives not involving deprivation of liberty at the community level is emphasised. The UNICEF representative office in Uzbekistan has openly called on the government to adopt alternatives to imprisonment for children and to resort to deprivation of liberty only as a last resort (Access to justice for children, n.d.). The government has set a goal to reduce the proportion of individuals receiving prison sentences (for adults – from 30% to 20% of convicts) (New reforms in the judicial…, n.d.), and it is evident that for children this indicator should approach zero, except in cases of serious violent crimes.

The overall legal assessment confirms that the Central Asian countries have made significant progress in aligning national legislation with international child rights standards. Current initiatives in Uzbekistan are generally consistent with the requirements of the UN Convention on the Rights of the Child (particularly regarding setting the age of responsibility no lower than 14 years and ensuring, as far as possible, non-punitive resolution of children's cases). All states in the region declare commitment to the ultima ratio principle regarding minors and demonstrate practical results of its implementation through a radical reduction in the use of deprivation of liberty. The reforms reflect a global trend, underpinned by UN international standards, towards a shift from a punitive to a rehabilitative paradigm in the sphere of juvenile justice. The analysis of juvenile justice reforms in Central Asia shows both common trends and differences: common to all countries is the gradual departure from a purely repressive model of dealing with juvenile offenders, inherited from the past, and a movement towards a more humane, preventive, and rehabilitative paradigm, dictated by international child rights standards. This, in the long term, will contribute both to the well-being of the younger generation and to the safety of society as a whole.

Discussion

The results of the conducted research demonstrate significant positive changes in the juvenile justice systems of Central Asian countries, reflecting a global trend of moving away from punitive to rehabilitative approaches in dealing with juvenile offenders. The identified reduction in the number of convicted juveniles by 83.3% in Kazakhstan and the decrease in the application of custodial sentences by 92% in Kyrgyzstan are of fundamental importance for understanding the effectiveness of systemic reforms in transitional societies. These results are consistent with the research of G. Kahlmeter & O. Bäckman (2025) in Sweden, who identified similar trends of increased use of alternative measures following the 2007 reform, when the share of dismissals from prosecution rose to 40% of the total sanctions. At the same time, the Swedish researchers identified an important aspect of social inequality in access to alternative measures, as children with highly educated parents had significantly greater chances of being exempted from punishment, which poses a challenge for ensuring the fairness of reforms in Central Asia.

The established indicators of juvenile detention rates in Central Asian countries, particularly the reduction in the proportion of children to 0.19-0.20% in the leading reform countries, are corroborated by international research on the negative impact of incarceration on child development. The systematic review by E. Ackerman *et al.* (2024) established that juvenile detention creates a cascading effect with

impairments in mental and physical health, adaptive functioning, and educational attainment, which strengthens the arguments in favour of the strategy to reduce the use of custodial sentences. Similarly, H. Smithson & D. Jump (2024) established through an analysis of the impact of COVID-19 on incarcerated children in the United Kingdom that isolation in cells and the lack of educational services exacerbated existing deficiencies in the sphere of child safety, confirming the correctness of the regional countries' strategy of disinvestment in juvenile custody. The identified effectiveness of alternative measures in reducing the number of juvenile offenders is critical for validating approaches to reforming juvenile justice. These results are consistent with the meta-analysis by H.E. Creemers *et al.* (2022), which found no differences in recidivism rates between custodial sentences and alternative measures among serious young offenders, with an average recidivism rate of 44.47% over 8.68 years. The absence of an association between the length of incarceration and recidivism confirms the correctness of the strategic direction of reforms in Central Asia. Contrasting results are presented in the research by E.C. McCuish *et al.* (2025), who identified paradoxical effects among 1719 serious offenders in British Columbia, finding a decrease in the number of convictions with an increase in days spent in custody, although the authors caution against interpreting the results as supporting the expanded use of incarceration.

The development of the probation system in Kazakhstan, as established by the research, demonstrates the practical implementation of the ultima ratio principle and is significant for other jurisdictions. These results are corroborated by the research of C. Engel *et al.* (2022), who demonstrated the positive impact of intensive support on reducing recidivism over three years in a Cologne probation programme with a clear rehabilitative focus. The programme showed a sustained effect of reducing recidivism, particularly among less serious offenders. Similarly, the research by I. van Delft *et al.* (2025) on the Dutch Halt diversion programme among 1300 juveniles provides methodologically robust evidence of the effectiveness of structured alternative measures through a randomised controlled trial, confirming the advisability of Kyrgyz diversion initiatives. The identified changes in philosophy from a punitive to a socio-rehabilitative approach, particularly the transfer of reception-distribution centres from the Ministry of Internal Affairs to the education system in Kazakhstan, find support in the results of research on trauma-informed approaches. The systematic review by C.G. Malvaso *et al.* (2024) of nine systematic reviews with 8615 participants established the strongest evidence for the effectiveness of trauma-focused interventions regarding symptoms of post-traumatic stress disorder and improved mental health. The establishment of Centres for Temporary Isolation, Adaptation and Rehabilitation of Juveniles reflects an understanding of the need for a trauma-informed approach. S. Ji & R. Enright (2025) further confirm the effectiveness of alternative therapeutic approaches through a study of forgiveness programmes among 27 female offenders in South Korea, finding improvements in attachment and reductions in anger and anxiety, which is significant for the development of culturally adapted programmes in Central Asia.

The established increase in the minimum age of criminal responsibility in Uzbekistan from 13 to 14 years corresponds to international recommendations and contrasts with trends in some countries. A.H.L. Wong (2024) analyses the Chinese 2021 reform, which created three different levels of responsibility for different offences, lowering the age for two specific crimes to twelve years. The author argues that creating different levels based on types of crimes is fundamentally wrong, which confirms the correctness of the Central Asian countries' approach to raising the minimum age in accordance with international standards. J. O'Connor (2023) expands this understanding through an analysis of sentencing children in cases of sexual offences in Ireland, proposing a holistic model combining children's rights, victims' needs, and societal interests. The identified issues regarding ensuring the fairness of applying alternative measures in the multi-ethnic societies of Central Asia are critical for the further development of the systems. These results are reflected in the research of J. Afkinich (2024), who established in a systematic review of eleven studies that while several strategies reduced overall juvenile pre-trial detention, few strategies were associated with reducing the disproportionate contact of minorities with the juvenile justice system. This highlights the need for targeted efforts to overcome discrimination and develop special mechanisms for monitoring fairness.

The development of specialised juvenile justice institutions in Kazakhstan, particularly the creation of a network of 19 specialised courts, demonstrates a comprehensive approach to reform. These results find support in the comparative analysis by N. Khmełevska & M. Muravyeva (2024) of the Finnish and Ukrainian systems, where the authors established that Finland stands out for developing a multidisciplinary system with a welfare-oriented approach, including preventive measures, early intervention, and restorative justice. The Finnish experience can inform the further development of systems in Central Asia, taking national contexts into account. The established influence of historical factors on the formation of juvenile justice systems in Central Asia is fundamental for understanding the mechanisms of successful reform. These results are confirmed by the analysis of M. Hajiyeva (2024) on the evolution of criminal-legal protection of minors in Central and Eastern Europe, where the author established that the Soviet era shaped a common ideological approach to juvenile justice with an emphasis on parental rights and educational methods. The shared historical heritage creates opportunities for coordinated development in the region while adhering to modern international standards. The identified necessity for developing technological approaches to risk assessment in Central Asian systems is confirmed by international research on the effectiveness of predictive tools. E. Akpanekpo *et al.* (2025) investigated the accuracy of predicting violent recidivism in different supervision settings,

establishing good discrimination in both custodial (AUC 0.771) and community supervision (AUC 0.728) settings, though they found differences in predictive accuracy between different settings. M. Cavus *et al.* (2025) expand this understanding by presenting a Recidivism Clustering Network using artificial intelligence, which achieved 75% accuracy in predicting re-offending, demonstrating the potential of technological solutions to support decision-making.

The identified importance of quality staff training and the development of practical skills in Central Asian systems finds theoretical justification in modern concepts of juvenile justice reform. A. Day & C. Malvaso (2024) emphasise the importance of the concept of "practice-based evidence" as a central element of reform, highlighting the need to focus on listening to young people, ensuring their safety, and avoiding re-traumatisation. This aligns with the philosophy of reforms in Kazakhstan and Kyrgyzstan, although it requires further development of specialised skills among practitioners. The established results regarding the development of rehabilitation programmes in Central Asia are significant for understanding the effective mechanisms of resocialising juvenile offenders. M. da Silva *et al.* (2023) confirm the importance of developing socio-political control among institutionalised young offenders in Brazil through the validation of leadership competency and political control assessment tools. These results can inform the development of leadership skills and civic participation programmes as elements of rehabilitation in the countries of the region.

The obtained research results are of fundamental importance for understanding the transformation processes of juvenile justice systems in post-Soviet countries and demonstrate the possibility of successfully adapting international child rights standards to national contexts. The identified patterns confirm the effectiveness of a comprehensive approach to reform, including legislative changes, institutional transformations, and changes in law enforcement practice. International experience testifies to the correctness of the chosen direction of reforms in Central Asia and confirms their conformity with global trends in the humanisation of juvenile justice. At the same time, the identified challenges regarding ensuring fairness, developing specialised programmes, and training qualified personnel are common to most jurisdictions and define the directions for further research and practical improvements. These results create the foundation for formulating specific conclusions regarding the achievements and prospects for the development of juvenile justice systems in the Central Asian region.

Conclusions

This study was dedicated to a comprehensive analysis of the processes of reforming juvenile justice systems in Central Asian countries, with the aim of identifying key trends in the transformation from inherited Soviet models to specialised systems of justice for minors that comply with international child rights standards. A three-stage research approach enabled a comprehensive analysis of institutional and legislative reforms, an empirical assessment of their effectiveness, and a legal analysis of compliance with international standards, thereby ensuring the achievement of the set objective. The study conducted a comparative analysis of institutional models and legislative changes in Kazakhstan, Kyrgyzstan, and Uzbekistan, revealing three principal approaches to reform. Empirical analysis of statistical indicators established a high effectiveness of the implemented measures: an 83.3% reduction in the number of convicted minors in Kazakhstan and a 92% decrease in the application of custodial sentences to children in Kyrgyzstan over the period from 2005 to 2024. Analysis of indicators concerning the detention of minors within custodial systems revealed significant disparities between reform-leading countries, where the proportion of minors decreased to 0.19-0.20%, and states in the initial stages of transformation, with indicators of 0.90-1.67%. Legal analysis confirmed the gradual alignment of national legislation with the principles of the UN Convention on the Rights of the Child, evidenced by the raising of the minimum age of criminal responsibility in Uzbekistan from 13 to 14 years and the introduction of comprehensive alternative sentencing measures. A comparative study with the Chinese experience revealed both similar trends of humanisation and specific regional approaches to balancing public safety demands with the protection of children's rights.

The obtained results conceptualise the process of juvenile justice reform as a complex, multi-level transformation that combines institutional changes with the cultural and legal adaptation of international standards to national contexts. The identified direct correlation between the systematic nature of reforms and their practical outcomes demonstrates the critical importance of a comprehensive approach encompassing legislative amendments, institutional transformations, and changes in law enforcement practices. The research confirms the possibility of a successful transition from punitive to rehabilitative models of working with juvenile offenders, even within the context of post-Soviet legal systems with limited resources. It is established that the humanisation of juvenile justice has not led to an increase in juvenile delinquency, which refutes common concerns regarding the effectiveness of soft approaches towards child offenders. These conclusions are of fundamental importance for understanding the mechanisms of legal transformation in transitional societies and for developing strategies for the implementation of international human rights standards in various national contexts. Promising directions for further research include an in-depth analysis of the socio-economic consequences of the reforms for local communities, a study of the effectiveness of various models of reintegrating juvenile offenders through longitudinal research, an investigation into the influence of cultural and religious factors on the functioning of juvenile justice systems in the region, and a comparative analysis of the financial-economic aspects of different models of juvenile justice.

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Maksut Teketayev developed a concept and a three-stage methodology for the comparative analysis of juvenile justice systems in Kazakhstan, Kyrgyzstan, Uzbekistan and China. The author collected and interpreted statistical data from international organisations, which enabled him to identify three regional reform models and demonstrate their effectiveness in reducing the use of punitive measures against minors. He prepared a manuscript, synthesising the results of the legal analysis and proposing scientifically grounded approaches to the implementation of international standards for the protection of children's rights.

Conflict of Interest
None.

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