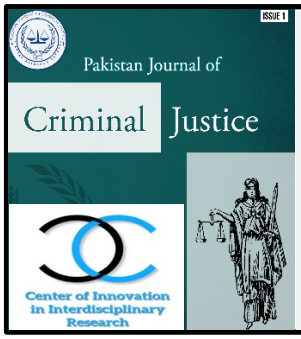
https://doi.org/10.62585/pjcj.v4i1.103



Volume and Issues Obtainable at Centeriir.org
Pakistan Journal of Criminal Justice
ISSN: 2958-9363 ISSN (E): 2958-9371
Volume 4, No.1, 2024

Journal Homepage:https://journals.centeriir.org/index.php/pjcl

Leveraging Artificial Intelligence for Enhancing Evidence Integrity and Chain of Custody in Pakistan's Criminal Justice System

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ABSTRACT

Incorporating Artificial Intelligence (AI) into the Criminal Justice System (CJS) provides a huge opportunity to enforce evidence integrity and streamline the chain of custody in Pakistan. There has been a notable increase in the application of AI across several sectors in Pakistan. Artificial intelligence technology has been employed in law enforcement for several years; however, recent improvements have become it more accessible and efficient. AI algorithms can process extensive datasets and discern patterns that may elude human researchers. This has resulted in the emergence of predictive policing, which use AI to pinpoint locations with a high probability of criminal activity and allocate resources appropriately. Artificial Intelligence can address the problem of case backlog in Pakistan. This research aims to offer novel insights on the responsible and successful deployment of AI, safeguarding individual rights while enhancing public safety, thereby overcoming the historical distrust in law enforcement.

Article History: Received: 02-04-2024 **Accepted**: 12-06-2024 **Published**: 28-06-2024
Keywords: AI, CJs, Predictive Policing, Chain of Custody.

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https://doi.org/10.62585/pjcj.v4i1.103

1. Introduction

It is a widespread adage that "to assess a country's developmental prospects, examine its crime rate." The Criminal Justice System of a nation aids in regulating the crime rate. The Criminal Justice System facilitates societal enforcement of appropriate behavior among all players, including victims, offenders, witnesses, and the community as a whole. Correctional institutions, including as prisons and probation agencies, are responsible for the punishment and rehabilitation of offenders. The CJS plays a crucial role in upholding justice. Nevertheless, like to any system devised by humans, the Criminal Justice System (CJS) in Pakistan is not devoid of imperfections. The integration of Artificial Intelligence (AI) into the Criminal Justice System (CJS) presents favorable prospects for tackling these difficulties, improving effectiveness and equity while upholding legal principles and social stability (Mani, Parab, Manaswini, Philip, Hari, & Singh, 2021). Across the board, AI developments have been a huge boon. The rise of the convergence of technology and multiple sectors is becoming more and more common in an ever-changing, digital world and one area that it has become popular in is within the criminal justice system. Through the analysis of burgeoning datasets, countless numbers of many small recommendations for one applicant or against another can spell either doom or reward for scores of offenders already processed through the AI system, making it a new engine driving criminal justice (Arowosegbe, 2023). Artificial Intelligence (AI) has achieved substantial progress across various domains. In today's rapidly changing world, the convergence of technology and diverse industries has become increasingly significant, particularly within the criminal justice system (Santamaría, Tobarra, Pastor-Vargas, & Robles-Gómez, 2023). AI's exceptional capacity to analyze extensive data and discern patterns has the potential to transform criminal investigations, defendant assessments, and sentencing processes.

Technology has made AI a powerful tool for law enforcement, crime prevention, and courtroom procedures (Plakhotnik, 2019). This essay analyses how AI has changed the criminal justice system from inquiry to sentencing. We compare the criminal justice system to AI to show the pros and cons of these two growing sectors. Artificial intelligence is the emulation of human cognitive capabilities in computers that reason and learn like humans. Machine learning, NLP, and computer vision are included. These technologies let computers evaluate and understand data, making them essential for crime prevention, investigation, and decision-making.

Consequently, Artificial Intelligence (AI) is increasingly utilized within the criminal justice system, with applications in law enforcement, judicial proceedings, and corrections. With the rapid advances in technology, AI has quickly become a powerful weapon that is changing the way we police and prevent crimes – as well as the legal system itself. This paper explores from scrutiny to sanction; the intriguing subject of reshaping Pakistan's criminal justice system by AI. By contrasting the current criminal justice system with what AI's potentialities are, we also want to be able to expose both opportunities and threats that emerge from the frontiers of bridging these two fast moving domains. These machines that learn and understand how to learn as do humans are what we call “artificial intelligence” (AI).Patterns in machine learning, Computer vision and Natural language processing. Computers using these processing technologies can provide tremendous assistance to crime prevention, investigation, and decision-making by data evaluation and interpretation. The courts, corrections, and law enforcement arena is nowadays heavily dependent on AI technologies, which is also why the criminal justice system has recently opted for it. AI systems in criminal justice raise even more basic questions and present human rights hazards, invoking solutions to mitigate these problems as well.

2. Research Questions

1. What are the modern challenges in the preservation of evidence integrity and ensuring a reliable chain of custody for Pakistan's Criminal Justice System?
2. How would the predictive policing, automated reporting and risk assessment of Artificial Intelligence serve in law enforcement environment?

3. How to address the ethical concerns around integrating AI technologies into the Criminal Justice System of Pakistan, and what are some of potential biases?

3. Significance and Limitation of Study

This study significantly enhances the understanding of artificial intelligence (AI) deployment in Pakistan Criminal Justice System (CJS) offering a comprehensive analysis regarding AI ability to improve evidence integrity and chain of custody. The article adopts a process lens for policy and policing to confront challenges while promoting normative development, emphasizing the importance of fairness and accountability. The research is limited to using existing literature and case studies that may not entirely capture the unique environment of Pakistan in terms of socio-political setting. Nearly instantaneous changes in AI technology could make the recommendations outdated quickly, and differences among law enforcement agencies may limit where suggestions can be implemented.

4. Key Applications of AI in the Criminal Justice System

4.1 Predictive Policing:

One of the most important applications of AI in criminal justice — predictive policing relies on historical crime data and algorithms to predict where crimes will happen or people that are more likely to commit them. Predictive algorithms in law enforcement and criminal courts are seen as more objective and efficient than human discretionary judgment; nonetheless, they encounter professional opposition due to apprehensions over deskilling and heightened surveillance (Brayne & Christin, 2020).This technique can help in improving resource utilization and make police forces to be prepared for ensuring peace by being capable of preventing criminal activities. When performed correctly, Predictive policing provided through AI has several benefits for law enforcement and public safety.

- **Enhanced Resource Allocation:**

Through predictive policing, law enforcement agencies can enhance the efficiency of resource deployment by identifying hotspots in high-crime areas and times. This enables a police department to prioritize resources in areas where they can be of most worth and possibly preventable crimes from occurring. In fact, studies have indicated that crime levels may fall without the deployment of extra officers, if a data-driven approach is used in police force activities. The technological shortcomings and inefficiencies of the criminal justice system result in suboptimal resource distribution and allocation, hence escalating damages and control expenses (Phillips, 1981).

- **Crime Prevention:**

Through the analysis of previous crime data, AI-driven predictive policing systems can assist law enforcement in forecasting prospective criminal activities (Perry, McInnis, Price, & Smith, 2013). These algorithms detect patterns of criminal behavior, such as recurrent burglaries in a particular area, enabling law enforcement to strategically deploy patrols to proactively deter crime. This proactive strategy can markedly diminish occurrences of theft, assault, and other criminal activities.

- **Faster Response Times:**

Predictive models enable police enforcement to enhance preparedness for certain situations, resulting in expedited reaction times. Understanding the temporal and spatial patterns of criminal activity enables cops to be deployed in high-risk locations, thereby enhancing public safety and fostering community confidence.

- **Reduction in Crime Rates:**

Certain cities have documented reduced crime rates with the incorporation of predictive police models into their crime prevention programs. Research from places such as Los Angeles has demonstrated a decline in property crimes due to the implementation of predictive policing, resulting in fewer

incidences in specified regions.

- **Improved Decision-Making:**

Automating decision-making in criminal trials can diminish subjective legal interpretation and enhance professional practices and training systems (Kharchenko, Voronina, & Desyatirikova, 2022).Artificial intelligence offers impartial, data-driven analyses that assist law enforcement in making more informed decisions. This diminishes dependence on human intuition, which may be skewed or swayed by emotion. AI tools evaluate numerous variables in decision-making, hence improving equity in policing techniques.

- **Potential for Integration with Other Technologies:**

Predictive policing can be integrated with other AI technologies, such as facial recognition and social media analysis, to develop more complete crime prevention measures. This comprehensive strategy can further improve public safety and aid in the early identification of illegal activities. The above mentioned favorable results show that, under suitable control under ethical supervision, predictive policing can produce more fair, efficient, and effective law enforcement. Ending over-enforcement and discrimination calls for transparency, control, and community involvement in system implementation. Predictive policing raises ethical questions. One of the main issues is bias since computers taught on biased past data could spread prejudice. For example, strict enforcement in some areas depending on skewed statistics could aim at underprivileged groups, therefore compromising justice and equality. Many artificial intelligence systems are opaque, which limits responsibility for mistakes or prejudices and makes decision-making processes difficult to hold. AI predictions suggest that cops might overuse machine outputs rather than comprehensive situational analyses. These issues draw attention to the requirement of carefully balancing ethics and efficiency in Pakistan's deployment of artificial intelligence predictive policing in her criminal justice system. Human management, open algorithm development, and audits help to lower these risks.

4.2 Automated documentation and reporting:

By reducing hand-made mistakes, increasing efficiency, and guaranteeing consistency in records, AI-driven solutions can significantly improve automated reporting and documentation inside Pakistan's criminal justice system. These systems could independently generate reports from large data sets including case files, investigation details, and evidence logs, so enabling the workflow for law enforcement and court systems. Forensic information extraction and synthesis would be facilitated by an automated system proposed for the extraction, transformation, cleaning, loading, and integration of police reports from several sources (Carnaz, Nogueira, Antunes, & Ferreira, 2018).

- **Streamlining Report Generation:**

Artificial intelligence can provide comprehensive investigative reports by aggregating information from many sources, including crime scene documentation, witness testimonies, and forensic evaluations. This ensures accurate and complete reporting, reducing law enforcement and legal work. This makes court presentation documentation preparation faster and more efficient(Carnaz, Nogueira, Antunes, & Ferreira, 2018).

- **Improved Accuracy and Consistency:**

AI-driven automated documentation reduces human error, which is common in manual reporting (Kharchenko, Voronina, & Desyatirikova, 2022). AI systems deliver regular case reports, reducing omissions and errors. For accuracy, automated systems can compare case data to databases.

- **Real-Time Updates and Monitoring:**

By independently refreshing reports and case files in real-time, AI-driven solutions ensure that all stakeholders can access the most current information(LACCEI, 2023). This is particularly helpful for

supervising the chain of custody for evidence since it guarantees that the paperwork stays unmodified from the time of collecting until it is presented before courts.

- **Enhanced Transparency and Accountability:**

Clear, verifiable records of all contacts provided by automated reporting systems help to increase responsibility. AI-enabled reporting provides comprehensive documentation of each procedural step, therefore boosting confidence in Pakistan's criminal justice system, which is marked by delays and anomalies that create suspicion.

5. AI-Driven Tools in Criminal Justice

COMPAS, PredPol, and HART are key AI-driven criminal justice systems that predict recidivism and assess criminal risk. This brief summary covers each and its possible benefits for Pakistani law enforcement:

5.1 COMPAS (Correctional Offender Management Profiling for Alternative Sanctions)

U.S. courts use COMPAS, an AI-driven risk assessment tool, to predict recidivism. Risk ratings help courts and parole officers decide bail, punishment, and parole. A system like COMPAS could help Pakistan enhance its judicial operations by providing judges with realistic risk evaluations, reducing court delays and promoting informed bail and sentence decisions. This systematic approach would help law enforcement allocate resources to rehabilitation programs for high-risk offenders. By leveraging data-driven insights, the system might create individualized rehabilitation strategies, such as counseling or vocational training. This can improve offender outcomes and public safety by addressing the causes of crime. A more efficient and just criminal justice system could reduce recidivism and benefit society. COMPAS, a popular commercial risk assessment software, is no more accurate or fair than predictions made by non-criminal justice professionals using a two-feature linear classifier (Dressel & Farid, 2018). Testing COMPAS recidivism ratings on diverse ethnic/racial groups reveals uneven validity that suggests different risk and need factors predict recidivism (Fass, Heilbrun, DeMatteo, & Fretz, 2008).

- **Scale of pretrial release risk**
  Pretrial risk assesses the possibility of failing to show up and/or committing new felonies upon release. Research guiding the scale's development indicates that "current charges, pending charges, prior arrest history, previous pretrial failure, residential stability, employment status, community ties, and substance abuse" are the most important factors influencing pretrial risk scores (Northpointe, 2015).
- **Standard scale for general recidivism**
  Designed to forecast new offenses upon release and following the COMPAS assessment is the General Recidivism Scale (Northpointe, 2015). The scale makes use of an individual's criminal background, companions' drug usage, and signs of young delinquency.
- **A scale for violent recidivism**
  After release, the violent recidivism score is supposed to forecast violent crimes (Northpointe, 2015). The scale employs information or indicators covering a person's "history of violence, history of non-compliance, vocational/educational problems, the person's age-at-intake and the person's age-at-first-arrest."

5.2 PredPol (Predictive Policing)

PredPol forecasts crime activity in specific areas, helping law enforcement agencies allocate resources. High-risk "hotspot" locales are predicted using crime statistics. Pakistani law enforcement can improve crime prevention by strategically placing people in high-risk areas using predictive analytics like PredPol. This preventative method helps law enforcement reduce hazards, making communities safer. In

a country with limited law enforcement resources, such systems might improve patrol routes and focus on the most pressing areas, optimizing staff efficiency and effectiveness. Data-driven policing reduces crime, which makes communities feel safer and builds trust in law enforcement. Trust promotes community collaboration, which is essential for effective enforcement and crime reduction. The values and practical results of predictive policing evaluation approaches impact machine learning researchers' ethical views (Benbouzid, 2019). These benefits make Pakistani law enforcement more responsive and accountable. Also, the acceptance of predictive analytics and artificial intelligence in criminal justice should not be seen as a magic bullet to the many problems the criminal justice system deals with. These technologies should be utilized as a complimentary tool to the human decision-making process even if they can offer insightful analysis and increase operational efficiency.

Reducing crime and guaranteeing city safety depend on the great value statistical models may bring. The application of artificial intelligence in law enforcement causes general worries. Two striking examples are predictive policing and risk assessment. Concerns include the possibility of bias, the accuracy of projections guiding both operations, and an apparently lacking operational transparency. The narrative is shaped in part by almost feverish media coverage of artificial intelligence (Sherman et al., 2016). Its application in predictive police to foresee crimes in time and place is essentially an exercise in spatial statistics that in principle can make policing more effective and more surgical. Mostly an exercise in adaptive, nonparametric regression, its use in criminal justice risk assessment forecasts who will commit crimes. In theory, it can let law enforcement authorities better serve public safety with the least restrictive measures required, therefore reducing the need for jail. There is nothing enigmatic about any of this. Still, there are trade-offs between accuracy, justice, and openness for which there is no technical cure. You are not able to have everything. Legislative and political procedures will help to identify solutions by reaching a reasonable balance between several objectives.

Understanding their possible advantages and hazards as these technologies develop will help one to make sure they are applied in a way that honors personal rights and supports human decision-making procedures. The use of predictive analytics and artificial intelligence in criminal justice will be discussed in this blog together with their historical context and possible influence on Pakistan criminal law going forward.

5.3HART (Harm Assessment Risk Tool)

Durham Constabulary in the UK developed HART to predict reoffending and the harm a suspect could do if released or prosecuted (Muir, 2017). It helps police determine pretrial fines (Bright, 2020). The Harm Assessment Framework helps criminal policy and security governance decisions by identifying, measuring, and prioritizing crime-related harms (Greenfield & Paoli, 2022).

Using HART-like instruments, Pakistani law enforcement can improve pretrial determinations and better assess the danger of reintegrated offenders. This capacity allows law enforcement to identify high-risk offenders, simplifying targeted actions like heightened monitoring or personalized rehabilitation programs to address specific needs and habits. Damage assessment technologies also make justice more fair by using objective facts instead of subjective opinions. This shift to data-driven decision-making improves equity and transparency, reducing judicial biases. These instruments improve public safety and judicial system faith by showing stakeholders that choices are based on data rather than discretion (Greenfield & Paoli, 2022). Simply aggregating crimes of all kinds into a single number has long been argued to be inaccurate. None of the offenses are created equally. Counting them as though they were creates distortions of risk evaluations, resource allocation, and responsibility (Sherman, Neyroud, & Neyroud, 2016).

The criminological community has not done much to methodically consider criminal harms or their identification, evaluation, and comparison, although the relevance of harm to crime and criminalization and growing interest in harm as a basis for crime-control policies. This article offers a recently

established framework to organize the empirical evaluation of such damages and solve at least some of the related conceptual and technological problems. It also implies numerous functions for the framework in the policy making process. Our findings consist in two directions: As our examples imply, it is possible to consistently assess the negative effects of illegal behavior; nevertheless, it is not feasible—for both conceptual and technical reasons—to create a comprehensive estimate of the entire damages of these actions.

6. Obstacles to the Implementation of AI in Pakistan's Criminal Justice System

6.1 Data Quality and Availability

Effective AI systems need lots of accurate, high-quality data. AI projections may be unreliable due to inadequate, old, or poorly kept Pakistani crime data. Data gathering methods vary by jurisdiction, making a comprehensive database difficult. Pakistan's criminal justice system's data silos between police, courts, and prisons are another issue. This fragmentation limits AI systems' ability to gather and analyze relevant data. The prejudices and opacity of artificial intelligence in criminal procedures could compromise values and call for a legal system to guarantee appropriate defense of individual liberties (Papysheva, 2022).

6.2 Infrastructure Limits

Many Pakistani law enforcement agencies have technological obstacles that prevent AI implementation. Insufficient hardware, obsolete software, and poor internet access hinder AI implementation and use. The introduction of AI systems raises cybersecurity concerns since cyber-attacks could compromise crucial data. The criminal justice system needs strong cyber security to prevent breaches.

6.3 Training needs and competency gaps

Data scientists, machine learners, and AI ethicists are needed to use AI tools. However, Pakistan's criminal justice industry lacks AI-driven system developers, implementers, and evaluaters. Law enforcement officers may not be conversant with AI technologies, requiring extensive training. Traditionalists may resist new technologies, complicating AI assimilation.

6.4 Moral and Legal Issues

AI systems may accidentally amplify past crime data biases. Poor AI supervision can lead to biased activities like marginalized population profiling. In Pakistan, historical inequities may affect AI forecasts. There is a lot of discussion regarding artificial intelligence in which ethical and legal issues are raising increasing questions. Often, although having different problems and areas of knowledge, the two are muddled and perplexed. The ethical discussion brings two basic issues: the first, conceptual, refers to the idea and content of ethics; the second, functional, concerns its connection with legislation (Carrillo, 2020). Many AI systems are "black boxes," meaning their decision-making processes are unclear. Public distrust and rights infringement may result from law enforcement decisions without openness.

6.5 Social Acceptance

Public skepticism and concern about privacy and surveillance may accompany law enforcement AI implementation. Concerns about over-policing and invasive spying have communities opposing artificial intelligence-driven police. Successful AI systems depend on public confidence. People who see these technologies as flawed or biassed might not support law enforcement, therefore lessening the value of artificial intelligence.

6.6 Policy and Rule:

Absence of legal and regulatory structure impedes artificial intelligence deployment in criminal justice. Clear policies are needed in data protection, privacy, responsibility, and oversight. Artificial intelligence must be implemented by law enforcement, the court, and civil society working together. Coordinating problems among several institutions could hinder the application of artificial intelligence technology in

Pakistan's criminal justice system.

6.7 Availability of Resources

The direction of AI solutions calls for large technological, training, and infrastructure investments. The law enforcement agencies of Pakistan could lack the means to embrace and use contemporary technologies. AI systems must be accurate and efficient so they require constant improvements, maintenance, and control. Maintaining these systems could prove unsustainable given financial limitations, which will complicate artificial intelligence inclusion.

7. Suggestions for Including AI into Pakistan's Criminal Justice System

7.1 Availability and Data Security

Lots of reliable, high-quality data is required of effective artificial intelligence systems. Inappropriate, outdated, or poorly maintained Pakistani crime data could make AI forecasts incorrect. Data gathering methods vary by jurisdiction, making a comprehensive database difficult. Police, judicial, and penal institutions rarely share information in Pakistan's criminal justice system. This fragmentation makes it difficult for AI systems to acquire and process important data, limiting AI deployment.

7.2 Infrastructure Limits

Many Pakistani law enforcement agencies encounter technological barriers that prevent AI implementation. AI solutions are hindered by insufficient technology, obsolete software, and poor internet access in these institutions. AI systems also raise the risk of data breaches, which increases cyber security vulnerabilities. To defend Pakistan's criminal justice system from cyber-attacks, strict cyber security measures are needed.

7.3 Training needs and competency gaps

Data science, machine learning, and AI ethics experts are needed to develop AI technology. Unfortunately, Pakistan's criminal justice industry lacks AI-system developers, managers, and interpreters. AI may be unfamiliar to law enforcement, requiring substantial training. Traditionalist staff may resist adopting new technology, preventing the move to AI-based systems. Stressing crime prevention and the improvement of the evidentiary base of police, smart policing is a fresh strategy of Pakistan policing. It also covers Smart Policing in both historical and modern settings as well as some critical elements and developing characteristics in local Smart Policing sites. Particularly, the need to improve the evidence base of policing, the developing police-research partnerships in Smart Policing, the kinds of issues discovered and addressed, and possible Smart Policing concerns. Using data and analytics effectively is the main emphasis of smart policing, thus improving monitoring, success evaluation, assessment of performance, research on assessment of success, and so boosting production and encouraging innovation.

7.4 Moral and legal issues

AI systems may unintentionally magnify past crime data biases. AI methods may profile marginalized communities without monitoring. In diverse Pakistan, historical disparities may impair AI forecasts, which is worrying. Many AI algorithms are "black boxes," making their results difficult to interpret. Lack of transparency in law enforcement judgments can harm public trust and violate individual rights. The public may be wary of AI in law enforcement, especially over privacy and monitoring. Concerns about over-policing and invasive spying have communities opposing artificial intelligence-driven police. To succeed, artificial intelligence systems have to win public confidence. Consumers who believe these technologies are prejudiced or faulty could not assist with law enforcement, therefore lowering the efficacy of AI tools. AI not only enhances police performance but also provides major data input and helps to prevent crime and maintain law and order since humans find it difficult to cope with such

enormous and sophisticated data.

7.5 Regulations and Policies

Without a thorough legal and regulatory structure, artificial intelligence in criminal justice has great challenges. Data security, privacy, responsibility, and oversight all depend on well defined rules. AI tools must be applied by law enforcement, the court, and civil society acting together. Problems with coordination could stop Pakistan's criminal justice system from embracing artificial intelligence.

7.6 Limitations on Resources

AI implementation calls for expensive infrastructure changes, training, and technology tools. Financial restrictions may make it difficult for Pakistan's law enforcement organizations to adopt and keep advanced technologies. AI systems must be accurate and efficient so they require constant improvements, maintenance, and control. Maintaining these systems under current funding limitations could prove unsustainable, so including artificial intelligence into Pakistan's criminal justice system becomes challenging.

7.7 Create Oversight and Ethics

Using artificial intelligence in law enforcement calls for ethical models to handle responsibility, openness, and bias. To guarantee justice, objectivity, and openness, these guidelines for the creation and implementation of artificial intelligence systems have to be precisely explicit. Regular evaluation of AI system performance and ethical compliance assurance by independent oversight committees would help to guarantee both (Banwani & Kalra, 2021). Law enforcement, legal experts, leaders of civil society, and community members should all be part of these committees aiming at complete supervision and public trust in artificial intelligence.

7.8 Promote Public Invaction and Transparency

Teaching people the benefits and drawbacks of artificial intelligence in law enforcement helps to build trust and community inclusion. From the beginning, communities should talk about AI-driven projects to help to establish public confidence in artificial intelligence ethics. Implementation calls for open communication. Openness about data collecting, analysis, and use fosters confidence in privacy and security, therefore guaranteeing responsible and effective artificial intelligence uses.

7.9 Write laws and rules:

Before using AI technologies generally, Pakistan's criminal justice system should test them in limited regions or departments. Pilot projects help to clarify artificial intelligence application efficacy, best practices, and possible challenges. Identification of strengths, shortcomings, and areas for development depends on a methodical analysis of pilot project findings following the first testing phase. Before deployment, we could maximize our products by iteratively enhancing AI techniques grounded on consumer input.

7.10 Stress incremental implementation and pilot programs:

Before introducing AI technologies on a larger scale, Pakistan's criminal justice system would be wise to start pilot projects to evaluate AI tools in limited areas or departments. These pilot projects improve understanding of the general effectiveness, best practices, and possible difficulties of artificial

intelligence implementation. Recognizing strengths, shortcomings, and areas for development depends on constant evaluation of the results of these pilot projects after the first testing stage. By means of iterative improvement of AI techniques grounded on user feedback, we can hone our goods for optimal performance before their whole implementation.

7.11 Encourage Group Projects Among Several Stakeholders:

The effective incorporation of artificial intelligence (AI) features into Pakistan's criminal justice system calls for cooperation among technology companies and civil society groups. Emerging practical solutions depends on learning expertise, tools, and resources by means of partnerships with AI-centric companies. These joint projects improve local institutions' capacity and encourage information flow, hence fostering technical innovation. At the same time, interacting with civil society groups helps to include community viewpoints into the creation and implementation of artificial intelligence tools, therefore promoting openness and public confidence. When combined, these alliances create a fair and all-encompassing strategy improving the general integrity of the system.

8. Conclusion:

Including artificial intelligence (AI) into Pakistan's Criminal Justice System (CJS presents a transforming chance to improve evidence integrity and streamline chain of custody. Artificial intelligence technology let law enforcement agencies apply enhanced risk assessment techniques, automate reporting, and enhance predictive policing. This enables individuals to make informed decisions motivated by statistics. To effectively implement these developments, though, one must overcome significant obstacles including ethical issues, infrastructure restrictions, and data quality as well as technical ones. If Pakistan follows a strategic strategy stressing the management of strong data, the use of technical resources, the development of talent, and ethical oversight, it has the capacity to effectively negotiate these challenges. The concerted efforts of government agencies, civil society organizations, and technological partners will be vitally vital in the construction of a system that is both transparent and responsible. By properly utilizing artificial intelligence, Pakistan is able to create a criminal justice system that is ultimately more trustworthy, fair, and efficient. This framework can uphold everyone's rights and respect the rule of law.

Funding
This article was not supported by any funding from public, commercial, or not-for-profit sectors.

Conflict of Interest/ Disclosures
The authors have disclosed that there are no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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