

# Children in Conflict with Law: Reforming Juvenile Justice Legislation

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**Abstract—** Juvenile justice systems face the difficult task of responding to serious offending while preserving the developmental rights, dignity, rehabilitation prospects, and procedural protections of children. Recent reforms in India have strengthened institutional accountability, yet important concerns remain regarding preliminary assessment, individualized rehabilitation, consistency of Juvenile Justice Board decisions, and the handling of sensitive child-level information. This study identifies a research gap at the intersection of juvenile justice legislation, developmental assessment, and responsible data-driven decision support. It proposes that carefully governed computational tools could assist—not replace—Juvenile Justice Boards in identifying rehabilitation needs, case-processing delays, psychosocial vulnerabilities, and patterns associated with successful social reintegration. The research develops a child-centred explainable decision-support framework combining legal variables, social-investigation indicators, education and family factors, behavioural information, and rehabilitation outcomes.

Particular emphasis is placed on fairness auditing, data minimization, human oversight, explainability, and the prohibition of automated determinations concerning criminal responsibility or transfer to adult courts. **Keywords—** Juvenile Justice, Children in Conflict with Law, Rehabilitation, Explainable Artificial Intelligence, Legal Decision Support, Child Rights

## Introduction

Juvenile justice is founded on a proposition fundamentally different from conventional criminal justice: a child alleged to have committed an offence cannot simply be treated as a

smaller version of an adult offender. Childhood and adolescence involve continuing neurological, psychological, emotional, and social development. A legal system dealing with children must therefore consider not only the alleged offence but also maturity, family circumstances, social environment, education, vulnerability, capacity for behavioural change, and prospects for reintegration. International child-rights law accordingly gives rehabilitation, reintegration, procedural fairness, diversion, and minimum use of deprivation of liberty a central position in child justice.

The United Nations Committee on the Rights of the Child's General Comment No. 24 emphasizes a holistic child justice system and encourages States to expand diversion and non-custodial measures while ensuring that detention remains a measure of last resort. The Committee has also moved deliberately toward the terminology of "child justice", rather than merely "juvenile justice", to reinforce the principle that persons below eighteen years remain children possessing the rights guaranteed by the Convention on the Rights of the Child.

India's contemporary juvenile justice regime is principally governed by the Juvenile Justice (Care and Protection of Children) Act, 2015. A particularly debated feature of this legislation is the procedure applicable to children aged sixteen to eighteen who are alleged to have committed a "heinous offence". Section 15 provides for a preliminary assessment by the Juvenile Justice Board concerning the child's mental and physical capacity to commit the alleged offence, ability to understand its consequences, and the circumstances in which the offence was allegedly committed. The assessment carries exceptional importance because it can

influence whether the matter continues within the ordinary juvenile justice process or proceeds toward consideration by a Children's Court.

The complexity of this assessment has subsequently been acknowledged institutionally. In *Barun Chandra Thakur v. Master Bholu & Anr.*, decided on 13 July 2022, the Supreme Court of India emphasized the specialized and sensitive nature of a Section 15 assessment. Following the Court's directions, the National Commission for Protection of Child Rights issued detailed Guidelines for Conducting Preliminary Assessment under Section 15 in April 2023. Significantly, the guidelines avoided prescribing one rigid psychological assessment instrument, recognizing that children differ substantially and that assessment may require individualized professional judgment.

The legislative environment has also continued to evolve. The Juvenile Justice (Care and Protection of Children) Amendment Act, 2021 was notified on 9 August 2021 with the stated objective of strengthening implementation and monitoring. Among its changes, the reform expanded the supervisory and coordinating responsibilities of District Magistrates and Additional District Magistrates within the juvenile protection structure. The Juvenile Justice Model Amendment Rules, 2022 subsequently introduced further procedural and institutional modifications. These changes demonstrate that the contemporary challenge is not simply whether juvenile justice legislation exists, but whether decisions made under that legislation are consistent, evidence-informed, child-sensitive, and capable of generating meaningful rehabilitation.

Source:

[https://fortuneiascircle.com/forward/juvenile\\_justice\\_act\\_analysis](https://fortuneiascircle.com/forward/juvenile_justice_act_analysis)

Recent crime data add another dimension to the discussion. India's National Crime Records Bureau continues to separately document cases involving juveniles in conflict with law, including offences recorded under the Indian Penal Code and Special and Local Laws. Crime in India 2023 data were made available through the Government of India's Open Government Data Platform in 2026, demonstrating the continuing administrative importance of systematic juvenile-justice information. The official dataset itself cautions against simple interstate comparisons based solely on crime figures, an important reminder that recorded juvenile crime is influenced by population, policing, reporting practices, institutional structures, and other contextual conditions.

Conversely, research on artificial intelligence in criminal justice typically concentrates on adult recidivism prediction, risk classification, policing, sentencing, or correctional management. Directly transferring such predictive models into juvenile justice would be problematic because models trained to estimate "risk" can reproduce historical inequalities and convert socioeconomic disadvantage into apparent dangerousness.

The research gap addressed by the present study is therefore more specific: **there is insufficient research on how a legally constrained, explainable, rehabilitation-oriented decision-support architecture can assist juvenile justice institutions without allowing algorithms to determine culpability, predict criminality as a substitute for professional assessment, or recommend transfer of a child into an adult criminal process.**

This distinction changes the role assigned to artificial intelligence. The proposed system is not conceptualized as an automated judge. Rather, it is designed as an analytical support mechanism capable of identifying factors relevant to individualized intervention, such as educational disengagement, prior exposure to violence, substance-use vulnerability, unstable family environments, delays in case processing, mental-health referral requirements, availability of community support, and continuity of rehabilitation services. Its outputs would be interpretable and auditable, while final decisions would remain exclusively with legally competent human authorities.

Accordingly, this research treats technological efficiency as subordinate to the best interests and legal rights of the child. The central argument is that juvenile justice reform should move from an offence-dominant model toward a **rights-aware rehabilitation intelligence model**, where evidence assists individualized intervention but never displaces

| Basis      | Child in Conflict with Law (CCL)                                                                                                                    | Child in Need of Care and Protection (CNCP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section    | CCL is defined under section 2(13) of the Act                                                                                                       | CNCP is defined under section 2(14) of the Act                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Definition | A child who is: alleged or found to have committed an offence and; has not completed eighteen years of age on the date of commission of an offence. | A child who is: <ul style="list-style-type: none"> <li>without any home or settled place of abode or ostensible means of subsistence;</li> <li>found working in contravention of labor laws or begging or living on the street;</li> <li>residing with a person who has injured, exploited, abused, or threatened to do so or killed, abused, neglected, or exploited some other child;</li> <li>mentally ill or physically challenged having no one to support him;</li> <li>parent or guardian unfit or incapacitated;</li> <li>orphan or abandoned child or surrendered child;</li> <li>missing or run-away child whose parents cannot be found;</li> <li>likely to be abused, tortured, or exploited for sexual abuse or illegal acts;</li> <li>found vulnerable or likely to be inducted into drug abuse or trafficking;</li> <li>likely to be abused for unconscionable gains;</li> <li>victim of armed conflict, civil unrest, or natural calamity;</li> <li>at imminent risk of marriage</li> </ul> |

Fig. 1: Juvenile Justice Act

procedural safeguards, professional expertise, or judicial responsibility.

## Literature Review

### 2.1 From Punitive Juvenile Justice to Child-Centred Justice

Modern juvenile justice scholarship increasingly recognizes rehabilitation and reintegration as essential principles rather than discretionary benefits. General Comment No. 24 of the UN Committee on the Rights of the Child reflects developments in developmental science, restorative justice, minimum-age standards, and alternatives to deprivation of liberty. It advocates prevention and early intervention while encouraging non-judicial measures including diversion wherever appropriate.

This orientation challenges legal responses that attach excessive weight to offence seriousness while giving insufficient consideration to developmental capacity. Serious offending creates legitimate concerns for victims and public safety, but these objectives need not be incompatible with child-specific treatment. A properly constructed juvenile justice framework therefore has to balance accountability with developmental proportionality.

Indian legislation incorporates several of these rehabilitative principles while simultaneously creating an exceptional mechanism for certain alleged heinous offences committed by children aged sixteen to eighteen. This exceptional mechanism has generated continuing debate because the preliminary assessment can substantially affect the child's legal trajectory.

### 2.2 Preliminary Assessment under Section 15

Section 15 represents one of the most analytically demanding components of the Juvenile Justice Act because the Juvenile Justice Board must consider multidimensional questions rather than determine the existence of a single fact. Mental capacity, physical capacity, understanding of consequences, and circumstances surrounding an alleged offence cannot be reliably inferred merely from chronological age or offence classification.

The Supreme Court's consideration of the preliminary assessment process in *Barun Chandra Thakur* contributed significantly to subsequent procedural clarification. NCPDR's 2023 guidelines, prepared following that decision, explicitly acknowledge that preliminary assessment requires expertise and that psychological assessment may vary from child to child. The guidelines therefore seek procedural consistency without imposing a single mechanical instrument.

This is directly relevant to computational decision support. A conventional classification model typically seeks to reduce numerous variables to a predicted category. Such reduction would be inappropriate if applied to the legal question "juvenile process or adult trial", because Section 15 requires contextual professional and judicial assessment rather than purely statistical prediction. Technology should consequently organize evidence, expose inconsistencies, support referrals, and identify rehabilitation requirements instead of calculating an automated transfer recommendation.

### 2.3 Legislative Reform and Institutional Accountability

The Juvenile Justice Amendment Act, 2021 represents an important stage in India's attempt to improve implementation and institutional monitoring. Government descriptions of the amendment emphasize expanded responsibilities of District Magistrates and Additional District Magistrates for coordinating and monitoring agencies under the juvenile justice framework. The subsequently notified Model Amendment Rules, 2022 refined institutional procedures and responsibilities.

These developments indicate a shift toward stronger administrative supervision. Nevertheless, administrative accountability alone cannot guarantee substantive consistency in individual cases. Decisions may depend on the quality of Social Investigation Reports, availability of qualified psychological professionals, completeness of educational and family information, local rehabilitation infrastructure, workload of institutions, and timeliness of proceedings.

A major reform opportunity therefore lies in improving the informational environment in which legally authorized professionals operate. A structured digital case-management system can potentially reduce missing information, monitor statutory timelines, identify pending assessments, document rehabilitation services, and track compliance. The policy challenge is ensuring that efficiency does not produce excessive surveillance.

### 2.4 Developmental and Psychosocial Dimensions

Children's behaviour is embedded within family, peer, school, neighbourhood, economic, and psychological environments. Consequently, juvenile offending cannot be adequately interpreted through offence variables alone. Factors such as school disengagement, family conflict, peer influence, substance exposure, previous victimization, unstable housing, emotional distress, or absence of community support may affect both offending behaviour and the probability of successful rehabilitation.

However, these variables require careful interpretation. Socioeconomic disadvantage, low educational achievement, or residence in a high-crime area must not become algorithmic proxies for criminal propensity. A system that predicts future misconduct from structural disadvantage risks punishing the child for circumstances beyond his or her control. The same variable may instead have legitimate value when used to identify a need for educational assistance, family counselling, financial support, mental-health intervention, or community-based rehabilitation.

This distinction between **prediction of dangerousness** and **identification of support needs** forms a central theoretical contribution of the present study.



Fig. 2: Care and Protection of Children

Source: <https://www.instagram.com/p/DW0lbapKx4c/>

## 2.5 Artificial Intelligence and Juvenile Justice Decision Support

Machine-learning systems can identify complex associations across multidimensional datasets, but predictive accuracy alone is insufficient in legal settings. A model might achieve strong classification performance while depending heavily on variables that are legally irrelevant, discriminatory, unstable, or impossible for an affected person to contest. Juvenile justice therefore requires stronger safeguards than ordinary predictive analytics.

Explainable artificial intelligence offers a more appropriate starting point because it permits investigators and institutional reviewers to examine why a system generated a particular output. Nevertheless, explainability does not automatically create fairness. A highly explainable model can still reproduce historical bias if its dataset reflects unequal policing, differential reporting, or inconsistent institutional treatment.

The proposed research consequently rejects an architecture in which a machine-learning model produces a single "high-risk/low-risk" label governing the child's legal treatment. Instead, different models are envisaged for limited operational questions, including likelihood of rehabilitation-service discontinuity, probability of case-processing delay, identification of missing psychosocial assessment, and patterns associated with successful completion of community-based interventions. These outputs are intended to assist resource allocation and rehabilitation planning.

### Proposed Methodology

The proposed study adopts a socio-technical research design integrating juvenile justice law, explainable machine learning, psychosocial assessment, and digital case-management principles. The methodology deliberately avoids constructing a model that predicts whether a child should be tried as an adult. Instead, computational analysis is limited to four operational purposes: identification of rehabilitation-support needs, detection of possible case-processing delay, identification of incomplete psychosocial assessment, and estimation of the likelihood that a child may discontinue an assigned rehabilitation programme.

This distinction is particularly important under Section 15 of the Juvenile Justice (Care and Protection of Children) Act, 2015. The National Commission for Protection of Child Rights guidelines describe preliminary assessment as a sensitive exercise requiring expertise and recognize that psychological assessment may differ between children. They do not prescribe a single standardized tool for all cases. Consequently, the proposed architecture treats professional and judicial assessment as non-delegable human functions.

The analytical framework contains three layers. The first is a **data-governance layer**, where direct identifiers are removed and variables are classified according to legal relevance and sensitivity. The second is an **explainable learning layer**, where models generate limited-purpose intervention scores. The third is a **human-review layer**, in which professionals inspect the model output, explanatory factors, missing information, and uncertainty before taking any action.

Data inputs are divided into five domains: case administration, education, family and social environment,

psychosocial support needs, and rehabilitation participation. Variables describing caste, religion, precise residential location, or other characteristics likely to function as discriminatory proxies are excluded from prediction. Socioeconomic indicators are permitted only where their intended use is supportive—for example, identifying the need for educational assistance or family-support services rather than predicting criminal propensity.

Data protection is treated as a design requirement rather than a later compliance exercise. India's Digital Personal Data Protection Act, 2023 contains specific provisions concerning processing of children's personal data, while the subsequently notified Digital Personal Data Protection Rules, 2025 establish additional procedural requirements and phased commencement arrangements. The proposed system therefore incorporates purpose limitation, role-based access, audit logging, data minimization, retention controls, and separation between identifiable operational records and de-identified analytical datasets.

### 3.1 Analytical Tasks

Four machine-learning tasks are specified:

**Task A – Rehabilitation discontinuation:** prediction of whether a child is likely to discontinue an assigned educational, counselling, vocational, or community rehabilitation intervention.

**Task B – Procedural-delay alert:** estimation of whether a case is approaching an administratively defined delay threshold requiring supervisory review.

**Task C – Support-needs classification:** multilabel identification of likely requirements such as educational intervention, psychological consultation, substance-use counselling, vocational assistance, or structured family support.

**Task D – Record-completeness detection:** identification of potentially missing Social Investigation Report, educational, psychological, or rehabilitation information required for informed professional review.

Model outputs are therefore oriented toward improving institutional response rather than increasing the severity of legal treatment.

## Experimental Setup

### 4.1 Dataset

For proof-of-concept evaluation, a synthetic dataset of **6,400 juvenile case profiles** was generated. No record represents

an identifiable real child. Variable distributions were constructed to reflect the types of information ordinarily encountered within juvenile case-management and social-investigation processes rather than reproducing confidential court records.

Each profile contained 31 candidate features divided among administrative, educational, family, psychosocial, and rehabilitation domains. Examples included age band, school attendance status, previous interruption of education, availability of family supervision, counselling referral, substance-use support requirement, vocational interest, number of rehabilitation contacts, programme attendance, elapsed processing time, completion of required assessments, and availability of community support.

Offence seriousness was retained only as a contextual administrative feature and was prohibited from independently determining a rehabilitation recommendation. Protected or highly sensitive identity variables were excluded from model training.

The synthetic dataset was split at the case level into 70% training data, 15% validation data, and 15% final test data, resulting in 4,480, 960, and 960 profiles respectively.

### 4.2 Preprocessing

Categorical variables were one-hot encoded, while continuous variables were standardized where required by the model class. Missingness was intentionally introduced into selected assessment fields to imitate incomplete case documentation. Missing values themselves were not automatically interpreted as adverse indicators; a separate record-completeness model handled these instances.

Class imbalance in rehabilitation discontinuation was addressed through class-weighted learning rather than indiscriminate oversampling. This strategy reduced the risk of generating artificial combinations of psychosocial variables that might be clinically or legally implausible.

Potential proxy variables were evaluated through pairwise association analysis and permutation sensitivity testing. Features producing large predictive gains without a clear rehabilitation-related justification were removed. The final feature set contained 24 variables.

### 4.3 Model Architecture

Three modelling approaches were compared during validation:

1. regularized logistic regression;

2. gradient-boosted decision trees; and
3. explainable boosting machines.

The **Explainable Boosting Machine (EBM)** was selected as the primary model because it provided competitive predictive performance while retaining additive, interpretable feature-response relationships. Unlike a conventional opaque ensemble, an EBM allows professionals to examine how individual variables contribute to a prediction.

For multilabel support-needs classification, one EBM classifier was trained for each intervention category. Record completeness was handled using a rule-assisted classifier because several missing-document conditions can be directly defined through administrative logic rather than learned statistically.

Every prediction was accompanied by three elements: the estimated probability, the strongest contributing factors, and a model-confidence indicator. No output contained a categorical label such as "dangerous child", "future offender", or "adult-trial suitable".

The architecture follows the broader principle that trustworthy AI assessment should include validity, transparency, interpretability, privacy protection, fairness, and mechanisms for managing harmful bias. These characteristics are also emphasized within the NIST AI Risk Management Framework.

#### 4.4 Training Strategy

Hyperparameters were tuned using five-fold cross-validation within the training partition. Model selection prioritized a composite objective rather than maximum discrimination alone. The selection score assigned 40% weight to discrimination, 25% to calibration, 20% to subgroup consistency, and 15% to explanation stability.

This weighting reflects the study's normative assumption that a marginal increase in predictive accuracy cannot justify a substantial deterioration in fairness or interpretability in a child-justice application.

Early stopping was used for boosted models. Probability calibration was performed using validation-set isotonic calibration where required. The decision threshold for rehabilitation-discontinuation alerts was not fixed at 0.50; it was selected to emphasize recall while keeping the false-positive burden at a level considered manageable for professional review.

#### 4.5 Evaluation Metrics

Performance was evaluated using area under the receiver operating characteristic curve (AUROC), area under the precision-recall curve (AUPRC), balanced accuracy, sensitivity, specificity, F1 score, and Brier score.

Fairness analysis used subgroup true-positive-rate difference and false-positive-rate difference across synthetic age bands and sex categories. Because demographic parity may be inappropriate when legitimate support needs differ between groups, the principal fairness criterion was **error-rate consistency** rather than forced equality of intervention rates.

Calibration was assessed through expected calibration error. Explanation stability was measured by determining whether the three most influential features remained substantially consistent after small perturbations to non-material input variables.

#### Results and Discussion

The proof-of-concept evaluation indicated that an explainability-oriented architecture could achieve useful decision-support performance without resorting to an opaque punitive risk score. The EBM obtained an AUROC of 0.84 for rehabilitation-discontinuation detection and a balanced accuracy of 0.76. Its Brier score of 0.136 indicated reasonably calibrated probability estimates after validation-based calibration.

The support-needs component achieved its strongest performance for educational-support identification, followed by family-support and counselling requirements. Performance was lower for substance-use support because the simulated prevalence of this outcome was comparatively small. This result illustrates an important methodological issue: rare intervention requirements should not automatically be interpreted through conventional overall accuracy.

The procedural-delay model produced a recall of 0.88. High recall was deliberately preferred because a missed delay could result in a child remaining unnecessarily within a prolonged judicial or institutional process. False alarms generated by the model would merely trigger administrative review rather than adversely determine the child's legal status.

**Table 1. Proof-of-Concept Performance of the Proposed Child-Centred Decision-Support Architecture**

| Evaluation Component                 | Observed Result | Interpretation                              | Operational Safeguard                     |
|--------------------------------------|-----------------|---------------------------------------------|-------------------------------------------|
| Rehabilitation discontinuation AUROC | 0.84            | Good discrimination between cases requiring | Prediction cannot alter legal disposition |

|                                   |       |                                                                 |                                                     |
|-----------------------------------|-------|-----------------------------------------------------------------|-----------------------------------------------------|
|                                   |       | ordinary and enhanced follow-up                                 |                                                     |
| Rehabilitation discontinuation F1 | 0.72  | Reasonable balance between missed and unnecessary alerts        | Professional review required before intervention    |
| Balanced accuracy                 | 0.76  | Performance remained stable under moderate class imbalance      | Annual revalidation proposed                        |
| Brier score                       | 0.136 | Probability estimates showed acceptable calibration             | Display probability rather than deterministic label |
| Procedural-delay recall           | 0.88  | Most simulated cases approaching delay thresholds were detected | Alert sent only to authorized case administrators   |
| Educational-support multilabel F1 | 0.81  | Education-related needs were comparatively identifiable         | Recommendation limited to supportive intervention   |

The subgroup analysis produced a maximum true-positive-rate difference of 0.046 and false-positive-rate difference of 0.052. These values do not demonstrate the absence of bias. They show only that substantial disparity was not introduced within the particular synthetic evaluation. A deployed system would require continuous auditing because real administrative datasets may contain structural inequalities that synthetic data cannot faithfully represent.

Feature-level interpretation also produced an important finding. Rehabilitation attendance history, interruption of education, availability of family support, completion of counselling referrals, and continuity of case-worker contact emerged as stronger indicators of rehabilitation discontinuation than offence-category information.

The explainability layer further revealed why interpretable systems are preferable in this context. For example, where an elevated discontinuation probability was primarily associated with irregular programme access and long travel distance to services, the appropriate institutional response would be logistical assistance rather than enhanced surveillance. Similarly, school disengagement should lead to educational intervention rather than being interpreted as evidence of criminal disposition.

The proposed architecture therefore changes the functional meaning of prediction. Instead of asking, "Which child is most likely to offend again?", it asks, "Which case appears to require additional institutional support, and which observable circumstances explain that need?"

Human oversight remains essential. NIST's AI risk-management work similarly recognizes human-AI interaction, explainability, interpretability, privacy, and bias management as important components of trustworthy deployment. In juvenile justice, however, oversight must go further: professionals must be empowered to disregard the model and document why its recommendation is inappropriate.

### Limitations

The primary limitation is the use of synthetic data. Although this approach prevents fabrication of identifiable juvenile records and permits controlled fairness testing, it cannot reproduce the institutional complexity, missingness patterns, regional variation, or social inequalities present in operational Juvenile Justice Board records.

Second, predictive associations cannot establish causation. A variable associated with rehabilitation discontinuation should not be interpreted as the cause of disengagement without further investigation.

Third, explainable models remain susceptible to biased training data. Interpretability makes bias easier to examine but does not eliminate it.

Fourth, the proposed system has not been prospectively evaluated with Juvenile Justice Board members, psychologists, probation personnel, social workers, children, or rehabilitation organizations. Its usability and institutional effects therefore remain untested.

Finally, quantitative indicators cannot capture all dimensions of a child's circumstances. Trauma, family relationships, maturity, coercion, developmental capacity, and social context may require direct professional assessment that cannot responsibly be reduced to structured data.

### Future Scope

Future research should undertake a legally authorized, multi-centre prospective validation using de-identified administrative data from diverse jurisdictions. Such work should examine whether decision support improves rehabilitation continuity, reduces avoidable delay, increases completion of statutory assessments, and improves access to appropriate services.

A second research direction concerns privacy-preserving distributed learning. Federated learning could potentially allow participating institutions to improve shared models without centralizing raw child-level records, although such systems would require substantial legal, cybersecurity, and statistical safeguards.

Natural-language processing could also be studied for narrowly defined administrative purposes, such as identifying incomplete fields in Social Investigation Reports. It should not be used to infer culpability or psychological characteristics from free-text narratives without rigorous validation.

Participatory design is equally important. Children with lived experience of the justice system, child-rights professionals, legal practitioners, psychologists, social workers, and rehabilitation organizations should participate in determining which computational uses are acceptable and which should remain prohibited.

Future regulation should also require algorithmic impact assessment, version-controlled audit logs, independent bias testing, clear appeal procedures, and mandatory suspension of any model showing clinically or legally significant subgroup deterioration.

## Conclusion

Reforming juvenile justice legislation in an increasingly digital administrative environment requires more than either punitive expansion or technological modernization. The central objective must remain rehabilitation, procedural fairness, dignity, and successful reintegration of children in conflict with law.

This study proposed a child-centred computational framework that separates legitimate decision support from automated adjudication. Explainable machine learning was restricted to rehabilitation continuity, support-needs identification, record completeness, and procedural-delay detection. Questions concerning culpability, preliminary assessment under Section 15, transfer to a Children's Court, or final disposition were deliberately excluded from automated determination.

The synthetic proof-of-concept experiment demonstrated that useful analytical performance can coexist with interpretability, calibration, fairness auditing, and human review. More importantly, it illustrated a different conception of artificial intelligence in juvenile justice: technology should identify where institutions need to support a child, not calculate how severely that child should be treated.

The NCPDR's Section 15 guidelines reinforce the individualized and expert-dependent character of preliminary assessment, while contemporary AI-governance frameworks emphasize explainability, privacy, transparency, and management of harmful bias. These principles are compatible only when AI remains subordinate to statutory safeguards and professional judgment.

Accordingly, future juvenile justice legislation and policy should establish explicit boundaries for automated systems. Child-level data should be collected only for legitimate purposes, predictive criminal-risk profiling should be prohibited, algorithmic recommendations should remain contestable, and human authorities should retain complete responsibility for consequential decisions.

A technologically advanced juvenile justice system should therefore not be measured by how accurately it predicts a child's future behaviour. Its more appropriate measure is whether technology enables institutions to intervene earlier, process cases more fairly, protect sensitive information more effectively, and provide every child with a realistic opportunity for rehabilitation and reintegration.

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