Al-Istinbath
Jurnal Hukum Islam

Vol. 11. No. 2, 2026 761-800
P-ISSN: 2548-3374 (p), 25483382 (e)
http://journal.iaincurup.ac.id/index.php/alistinbath

Algorithmic Decarceration in the Reform of Indonesia's Sentencing System: A Maqashid al-Shari'ah Perspective on the National Criminal Code

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DOI: 10.29240/jhi.v11i2.16897

Received: 13/05/2026	Revised: 08/09/2026	Accepted: 11/11/2026

Cite this article:	Siswanto, Zico Junius Fernando, Artha Febriansyah, Fardana Kusumah (2026), Algorithmic Decarceration in the Reform of Indonesia's Sentencing System: A Maqāṣid al-Sharī'ah Perspective on the National Criminal Code : Approach. Al-Istinbath : Jurnal Hukum Islam, 11 (2), 2026, 761-800. DOI : 10.29240/jhi.v11i2.16897

Abstract

This article examines the conditions under which algorithm-assisted non-custodial sentencing can be reconciled with Indonesia's National Criminal Code and Maqashid al-Shari'ah. The literature reviewed addresses algorithmic fairness, alternatives to imprisonment, and Islamic sentencing ethics largely through separate frameworks. The unresolved issue is how statutory eligibility, procedural contestability, and operational maqāṣid safeguards can be integrated into a coherent sentencing workflow. This normative legal study employs statutory, conceptual, and functional comparative analysis. It distinguishes existing sentencing rules from interpretive arguments and prospective policy proposals. The analysis identifies support for proportionate non-custodial sentencing within the Code, while showing that sentencing objectives do not independently authorize algorithmic tools or electronic monitoring. The proposed model connects legal eligibility, locally validated assessment, disclosure, opportunities to challenge errors, independent judicial reasoning, and periodic review. Maqashid principles are translated into indicators concerning safety, rehabilitation, economic burdens, dignity, and excessive surveillance. The article contributes a conditional governance framework rather than an empirically validated prediction model. Algorithm-assisted decarceration is defensible only where technological assistance supports

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lawful sentencing choices, preserves procedural rights, and avoids expanding unnecessary penal control.

Keywords: Algorithmic Decarceration; Maqāṣid al-Sharīʿah; National Criminal Code; Non-Custodial Punishment, Sentencing Reform.

Introduction

Indonesia's sentencing reform raises a specific question: can algorithmic tools assist courts in selecting lawful non-custodial sanctions without reproducing discrimination, opaque risk classifications, or excessive surveillance?[1] The difficulty concerns the relationship between statutory sentencing discretion, the limitations of predictive assessment, and the protection of persons affected by penal decisions.[2] Technological efficiency alone cannot resolve these issues. Maqāṣid al-Sharīʿah offers an evaluative perspective, but its relevance must be demonstrated through concrete safeguards. The inquiry is limited to post-conviction sentencing assistance; it does not propose predictive determinations of guilt or pretrial detention.

In the Indonesian context, this anxiety has become more relevant after the enactment of Law Number 1 of 2023 concerning the Indonesian National Criminal Code. The National Criminal Code was designed to replace the colonial Criminal Code and entered into force on 2 January 2026, marking an important moment to reconsider the direction of Indonesia's sentencing policy.[3] The National Criminal Code does not merely regulate criminal offenses; it also introduces a new paradigm in Book One as the general foundation for the application of national criminal law, including criminal provisions outside the Code.[4] However, this normative transformation faces a difficult correctional reality. World Prison Brief data records that, as of 31 August 2026, Indonesia's prison population reached 278,189 people, while the official prison capacity was

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[1] Federica Fedorczyk, "Navigating the Dichotomy of Smart Prisons: Between Surveillance and Rehabilitation," *Law, Innovation and Technology* 16, no. 1 (January 2, 2024): 243–60, https://doi.org/10.1080/17579961.2024.2313793.

[2] Ralph Henham, "Sentencing Policy, Social Values and Discretionary Justice," *Oxford Journal of Legal Studies* 42, no. 4 (December 9, 2022): 1093–1117, https://doi.org/10.1093/OJLS/GQAC011.

[3] Parningotan Malau, "Tinjauan Kitab Undang-Undang Hukum Pidana (KUHP) Baru 2023," *AL-MANHAJ: Jurnal Hukum Dan Pranata Sosial Islam* 5, no. 1 (June 13, 2023): 837–44, https://doi.org/10.37680/almanhaj.v5i1.2815.

[4] Muhammad Rifaid et al., "Transformation of Indonesian Criminal Justice Paradigm: Analysis of the Integration of Restorative Justice Principles in the National Criminal Code (Law No. 1 of 2023)," *Lex Journal : Kajian Hukum Dan Keadilan* 9, no. 3 (August 2, 2025): 694–706, https://doi.org/10.25139/LEX.V9I3.10823.

only 153,755, producing an occupancy rate of 180.9 percent.[5] This condition shows that criminal law reform cannot stop at textual reform. It must move toward a reformulation of sentencing models capable of reducing excessive dependence on punishment based on deprivation of liberty.

The crisis of prison overcrowding indicates that sentencing is not merely a technical matter concerning the execution of court decisions.[6] It is also a philosophical issue concerning how the state understands guilt, responsibility, suffering, restoration, and justice.[7] In modern criminal law, punishment can no longer be understood solely as retribution against offenders.[8] It must also function as an instrument of social correction that balances the protection of society, the restoration of victims, the rehabilitation of offenders, and respect for human dignity. It is in this context that the idea of algorithmic decarceration becomes important. This term should not be understood as the transfer of judicial authority to machines. Rather, it refers to the idea of limiting the use of carceral sanctions through data, technology, risk assessment, electronic monitoring, and non-custodial sentencing models, all of which must remain controlled by the principle of substantive justice. Therefore, algorithmic decarceration must be distinguished from algorithmic punishment. While algorithmic punishment risks turning human beings into objects of digital calculation, algorithmic decarceration is directed toward reducing unnecessary imprisonment, strengthening alternative sanctions, and ensuring that technology does not replace judicial conscience and discretion.

The comparison is functional: England and Wales are selected for the treatment of short custodial sentences, the United States for disputes about risk-assessment validity and procedural fairness, and the European Union for AI governance.[9] Section 1 of the Sentencing Act 2026 addresses a presumption of

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[5] World Prison Brief, "Pre-Trial/Remand Prison Population: Trend," prisonstudies.org, 2025, https://www.prisonstudies.org/country/indonesia?language_content_entity.

[6] Joan Mullen, "Prison Crowding and the Evolution of Public Policy," *The ANNALS of the American Academy of Political and Social Science* 478, no. 1 (1985): 31–46, https://doi.org/10.1177/0002716285478001004

[7] Elisa Nesossi et al., "Legal Reforms and Deprivation of Liberty in Contemporary China," *Legal Reforms and Deprivation of Liberty in Contemporary China*, January 1, 2016, 1–187, https://doi.org/10.4324/9781315592091/LEGAL-REFORMS-DEPRIVATION-LIBERTY-CONTEMPORARY-CHINA-ELISA-NESOSSI-SARAH-BIDDULPH-FLORA-SAPIO-SUSAN-TREVASKES/RIGHTS-AND-PERMISSIONS.

[8] Pihu, "Retribution vs Reformation: Balancing Justice in Modern Criminal Law," *International Journal of Judicial Law* 5, no. 2 (2026): 27–30, https://doi.org/10.54660/IJJL.2026.5.2.27-30.

[9] Julian V. Roberts and Jose Pina-Sánchez, "From Principles to Populism: Sentencing in England and Wales," *Crime and Justice*, January 1, 2026, 1–5, https://doi.org/10.1086/738815

suspended sentence orders for sentences of twelve months or less.[10] This legislative example concerns sanction design, not evidence of algorithmic effectiveness, and its operation depends on the applicable statutory conditions and commencement provisions. The comparator examples illuminate different parts of the proposed framework. Their transferability must be assessed against Indonesian sentencing powers, institutional capacity, data quality, and procedural protections.

Previous studies within the last decade have provided an important foundation for this article. In the field of technology and criminal justice, Dressel and Farid's 2018 article in Science Advances showed that the COMPAS risk assessment instrument was no more accurate or fair than predictions made by ordinary people with little or no criminal justice expertise.[11] This finding challenged the assumption that algorithms are always more objective than human judgment. Gao's 2025 discussion also identifies algorithmic bias as a continuing concern in criminal sentencing.[12] Thus, global literature on artificial intelligence in sentencing tends to move between two poles. On one hand, technology is considered capable of improving consistency, efficiency, and reducing human bias. On the other hand, technology can reinforce historical bias, obscure accountability, and weaken the right to humane decision-making.[13]

In contemporary Islamic legal studies, research on *Maqāṣid al-Sharīʿah* in criminal law reform has also developed significantly.[14] Ibrahim, Karimullah, Assaad, Septiani, and Okur, in a 2025 article in *Jurnal Hukum Islam*, emphasized that the integration of *Maqāṣid al-Sharīʿah* into criminal law reform should not be understood merely as a symbolic relationship between religion and human rights.[15] Rather, it must become a transformative project that changes the way

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[10] United Kingdom, Sentencing Act 2026, c. 2, sec. 1, https://www.legislation.gov.uk/id/ukpga/2026/2 (accessed October 14, 2026).

[11] Julia Dressel and Hany Farid, "The Accuracy, Fairness, and Limits of Predicting Recidivism," *Science Advances* 4, no. 1 (January 1, 2018): 1–6, https://doi.org/10.1126/SCIADV.AAO5580.

[12] Yiqiang Gao, "Algorithmic Justice: Can AI Mitigate or Exacerbate Bias in Criminal Sentencing?," *International Journal of Education and Humanities* 20, no. 2 (August 13, 2025): 95–99, https://doi.org/10.54097/B904EM84.

[13] Miri Zilka et al., "The Progression of Disparities within the Criminal Justice System: Differential Enforcement and Risk Assessment Instruments," *ACM International Conference Proceeding Series* 1 (June 12, 2023): 1553–69, https://doi.org/10.1145/3593013.3594099

[14] Uthman Mehdad Al-Turabi and Jasser Auda, "Toward a Maqāṣid-Based Legal Reform: Systemic Thinking for Social Transformation in the Modern Muslim World," *Indonesian Journal of Islamic Law* 8, no. 2 (December 23, 2025): 209–28, https://doi.org/10.35719/FHW10V84.

[15] Zumiyati Sanu Ibrahim et al., "Integration of Maqaṣid Al-Shari'ah in the Criminal Law Reform to Achieve Justice and Human Dignity," *Jurnal Hukum Islam* 23, no. 1 (June 17, 2025): 105–44, https://doi.org/10.28918/JHI.V23I1.04.

law understands justice, human dignity, rehabilitation, and social restoration. Such scholarship positions *maqāṣid* as an active principle requiring concrete protection of life, intellect, freedom, and social welfare. In addition, recent studies on penal policy in Muslim-majority countries show a growing tendency to shift from repressive approaches toward models oriented to restoration, prevention, empowerment, and public welfare.

The reviewed scholarship can be organized into three strands. Algorithmic criminal-justice research examines accuracy, unequal errors, transparency, and judicial reliance. Decarceration research concerns the substitution of custody by community measures and the risk of expanding supervision. Islamic criminal-law scholarship develops arguments about dignity, rehabilitation, public benefit, and discretionary punishment. Their findings do not answer the same question: predictive accuracy does not establish legal authority, sanction availability does not establish technological necessity, and general maqāṣid compatibility does not supply a procedure for resolving contested assessments. The unresolved fiqh questions concern the evidential weight of predictions, the limits of discretionary restrictions, and the assessment of competing benefits and harms.

Within the sources reviewed, the research gap concerns the connection between Indonesian statutory sentencing eligibility, contestable algorithmic assessment, and operational maqāṣid controls. This is a bounded claim about the literature examined, rather than an assertion that no relevant work exists. The article addresses that gap by specifying how these elements interact during eligibility screening, assessment, the hearing, sanction selection, and review. Its contribution is therefore a conditional decision framework identifying both defensible uses and circumstances in which technological assistance should be rejected.

This gap is significant because the use of algorithms in sentencing cannot be assessed only from the perspective of administrative efficiency. From the perspective of Islamic criminal law, particularly through the concept of *ta'zīr*, the state indeed possesses discretionary authority to determine the most appropriate form of sanction according to the needs of the time.[16] However, this discretion is not value-free. *Ta'zīr* must be placed within the orientation of *maṣlaḥah*, the prevention of harm, the restoration of social order, and the protection of human

[16] Munadi Usman et al, "Fuqaha' Perspective on Government Authority in Formulating Ta'zīr Penalty," *Siyasah Wa Qanuniyah : Jurnal Ilmiah Ma'had Aly Raudhatul Ma'arif* 3, no. 1 (June 25, 2025): 42–57, https://doi.org/10.61842/SWQ/V3I1.42.

beings from excessive punishment.[17] The principle of *ḥifẓ al-nafs* requires that punishment must not destroy human life and safety. *Ḥifẓ al-'aql* requires that punishment must not damage the rational and moral capacity of offenders to return as responsible members of society.[18] *Ḥifẓ al-māl* requires that punishment must not create disproportionate structural impoverishment. *Ḥifẓ al-'irḍ* demands the protection of human dignity, while *ḥifẓ al-niẓām* may be understood as the protection of social order.[19] Within this framework, algorithmic decarceration must not be allowed to develop as an unlimited instrument of digital control. It must instead be framed as a sentencing model that is proportional, transparent, accountable, and oriented toward social reintegration.

The relevant principles generate specific constraints. Harm prevention requires scrutiny of discriminatory errors and unnecessary restrictions; justice requires examination of unequal treatment; and dignity requires disclosure, challenge procedures, and limits on personal-data exposure. The maxims al-ḍarar yuzāl and al-yaqīn lā yazūlu bi-al-shakk provide an interpretive orientation: technological intervention should reduce harm, and an uncertain forecast should not be treated as an established fact. Their application here is the author's normative construction, not a claim that classical jurists endorsed algorithmic sentencing. Social order is treated as a policy objective, rather than assumed to be a universally recognized additional necessity within classical maqāṣid classifications.

The research examines three questions: which provisions support non-custodial sentencing and what restrictions govern their application; under what conditions algorithmic assessments may assist sentencing without determining guilt or displacing judicial responsibility; and how selected maqāṣid principles can become reviewable controls. The preliminary proposition is that algorithm-assisted decarceration is defensible only where lawful eligibility, reliable assessment, meaningful contestability, and proportionality are jointly satisfied. The subsequent analysis evaluates this proposition rather than assuming it as a finding.

This study uses normative legal research through statutory, conceptual, and functional comparative analysis. Primary materials comprise Law Number 1

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[17] Muhammad Mawardi Djalaluddin, "The Implementation of Ta'zīr Punishment as an Educational Reinforcement in Islamic Law," *Samarah: Jurnal Hukum Keluarga Dan Hukum Islam* 7, no. 1 (March 31, 2023): 399–417, https://doi.org/10.22373/SJHK.V7I1.15101.

[18] Bambang Tri Bawono et al., "Human Trafficking and the Relevance of Hifz Al-Nafs and Hifz Al-'ird in Contemporary Islamic Legal Ethics," *MILRev: Metro Islamic Law Review* 4, no. 1 (June 30, 2025): 597–618, https://doi.org/10.32332/MILREV.V4I1.10694.

[19] Anis Mashdurohatun et al., "Contemporary Reassessment of Punishment in Islamic and Secular Law: A Comparative Study of Justice and Penal Philosophy," *MILRev: Metro Islamic Law Review* 5, no. 1 (January 1, 2026): 80–100, https://doi.org/10.32332/MILREV.V5I1.11887.

of 2023, the selected judicial decisions discussed in the text, the United Kingdom's Sentencing Act 2026, and Regulation (EU) 2024/1689. Secondary materials are selected for direct relevance to non-custodial sanctions, predictive assessment, technological governance, and Islamic criminal jurisprudence.[20] Comparator selection follows the functions specified above, not a claim of representative coverage. The analysis first identifies sentencing authority and exclusions; next examines the functions and limitations of comparator instruments; then translates selected maqāṣid principles into evaluative criteria; and finally constructs a prospective workflow.[21] The regulatory and Indonesian prison-data updates were checked on 14 October 2026. Interpretations of existing law are distinguished from comparative inferences and recommendations. This study does not test an algorithm and makes no claim of demonstrated predictive accuracy or a causal reduction in imprisonment.

The article produces three analytical outputs: a distinction between statutory sentencing powers and proposed technological assistance; a safeguards framework specifying principles, indicators, responsible actors, and correction mechanisms; and a prospective workflow connecting eligibility, assessment, the hearing, implementation, and review. These outputs allow a future model to be evaluated against explicit criteria. They do not establish that such a model has already been implemented or empirically validated in Indonesia.

Discussion

The Crisis of Carceral Sentencing and the Normative Space for Decarceration in the Indonesian National Criminal Code

The crisis of carceral sentencing must first be understood as a crisis of legal rationality, not merely as a crisis of prison capacity. In many criminal justice systems, imprisonment has long been treated as the most visible symbol of state authority, moral condemnation, and social control. The stronger the public demand for punishment, the more frequently the criminal justice system turns to imprisonment as the default response. This pattern reflects what may be called a carceral paradigm: a way of thinking that places deprivation of liberty at the centre of criminal justice, even when the offence, offender, victim impact, and social context do not always require incarceration. The problem is not that imprisonment has no function. For serious, violent, organized, or highly dangerous crimes, imprisonment remains necessary to protect society and affirm

[20] Herawan Sauni et al., "Beyond Borders: Shedding Light on Foreign Bribery through an Islamic Legal Lens," *Al-Istinbath: Jurnal Hukum Islam* 9, no. 2 (September 20, 2024): 649–78, https://doi.org/10.29240/JHI.V9I2.9752.

[21] Zico Junius Fernando and Muhammad Imanuddin, "Green Financial Crime in The Perspective of Islamic Law," *Khazanah Hukum* 7, no. 2 (June 28, 2025): 206–22, https://doi.org/10.15575/KH.V7I2.39211.

the normative force of criminal law. The difficulty emerges when imprisonment becomes the ordinary response for minor, negligent, low-risk, first-time, poverty-driven, or socially repairable offences. At that point, sentencing loses its proportional and corrective character and becomes an instrument of excessive penal control.

This crisis is visible globally. Penal Reform International and the Thailand Institute of Justice reported in *Global Prison Trends 2025* that global imprisonment has reached around 11.5 million people, while nearly one-third of the global prison population, approximately 3.5 million people, are awaiting trial.[22] The same trend shows that prison growth is not merely caused by serious crime, but also by inefficient criminal justice processes, excessive pre-trial detention, punitive drug policies, and weak alternatives to imprisonment.[23] UNODC also notes that more than 60 percent of countries with available data operate prison systems above planned capacity, which indicates that overcrowding is no longer a local correctional problem but a structural feature of contemporary penal governance.[24] In this context, the debate on decarceration should not be reduced to a sentimental desire to "soften" criminal law. It is a rational legal response to the failure of mass imprisonment to produce proportional justice, rehabilitation, and social reintegration.[25]

Overcrowding identifies a need to examine detention and sentencing policies, but does not demonstrate that algorithms are necessary. The prior question is whether existing alternatives can be implemented through ordinary judicial assessment and adequate community services. An algorithmic intervention requires a separate justification establishing an identifiable benefit over those alternatives. Remand detention and post-conviction sentencing also require distinct legal responses; the model examined here concerns the latter.

Indonesia reflects this global crisis in a specific national form. World Prison Brief records that, as of 31 August 2026, Indonesia had 278,189 prisoners and detainees, with an official prison capacity of 153,755, producing an occupancy level of 180.9 percent.[26] For the same observation date, the source

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[22] Thailand Institute of Justice, "Global Prison Trends 2025," 2025.

[23] United Nations Office on Drugs and Crime, "Prison Matters 2024: Global Prison Population and Trends: A Focus on Rehabilitation," *Prison Matters 2024: Global Prison Population and Trends*, April 23, 2025, 1–52, https://doi.org/10.18356/9789211073706.

[24] Simone Santorso, "The Politics of Prison Crowding: A Critical Analysis of the Italian Prison System," *The Politics of Prison Crowding: A Critical Analysis of the Italian Prison System*, February 14, 2023, 1–210, https://doi.org/10.4324/9781003030997/POLITICS-PRISON-CROWDING-SIMONE-SANTORSO/RIGHTS-AND-PERMISSIONS.

[25] Peter Hanna, "Human Cattle: Prison Overpopulation and the Political Economy of Mass Incarceration," *Themis: Research Journal of Justice Studies and Forensic Science* 4, no. 1 (May 10, 2016): 1–25, https://doi.org/10.31979/THEMIS.2016.0403.

[26] World Prison Brief, "Indonesia | World Prison Brief," accessed October 14, 2026, https://www.prisonstudies.org/country/indonesia?language_content_entity=en-gb.

records that 20.4 percent of the prison population consisted of pre-trial detainees or remand prisoners.[27] This data is important because overcrowding does not merely mean "too many people in prison"; it also means the weakening of correctional ideals, reduced access to health services, limited rehabilitation programs, increased vulnerability to violence, and the transformation of prisons into criminogenic spaces. A correctional institution that is forced to house almost twice its designed capacity will struggle to function as a site of rehabilitation. It risks becoming a warehouse of punishment rather than an institution of correction, guidance, and reintegration.

The Indonesian prison crisis is also strongly connected to the dominance of narcotics-related cases. A 2026 Antara report, citing a legislative statement, noted that of approximately 270,000 prison inmates, around 140,000 were involved in drug offences, with more than 52 percent of inmates being drug offenders.[28] This figure reveals one of the deepest contradictions in Indonesian penal policy: many drug-related cases, especially those involving users or lower-level actors, are absorbed into the prison system, while the correctional system itself becomes overburdened and vulnerable to drug circulation networks. In such a situation, imprisonment may fail on two levels. First, it may fail as rehabilitation for users who require treatment, health-based intervention, and social restoration. Second, it may fail as deterrence when prisons themselves become spaces where illicit networks continue to operate. Therefore, decarceration must be understood not as the elimination of punishment, but as a reallocation of penal responses: serious traffickers and organized networks may still require firm custodial sanctions, while users, first-time offenders, and low-risk offenders should be directed toward treatment, supervision, community-based sanctions, or restorative mechanisms.

The local history of Indonesian criminal justice also shows that rigid reliance on formal punishment can produce public perceptions of injustice. The case of Nenek Minah, who was prosecuted for taking three cacao fruits and sentenced to one month and fifteen days with a probationary period, became a symbolic example of how minor offences can become morally disproportionate when processed through ordinary criminal law without adequate restorative filtering.[29] Similarly, the AAL "sandal jepit" case involving a child accused of stealing sandals became a public illustration of how criminal procedure and

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[27] World Prison Brief, "Indonesia," population, capacity, occupancy, and remand indicators at August 31, 2026, https://www.prisonstudies.org/country/indonesia (accessed October 14, 2026).

[28] ANTARA News, "Rehab Push Key to Solving Indonesia's Prison Overcrowding," en.antaranews.com, 2026, https://en.antaranews.com/news/413860/rehab-push-key-to-solving-indonesias-prison-overcrowding-lawmaker?

[29] Hanafi Urwatil Usqo, Faisar Ananda Arfa, and Nurasiah, "Kasus Nenek Minah Tinjauan Filsafat Hukum Islam Dan Barat," *Arus Jurnal Sosial Dan Humaniora* 4, no. 3 (December 21, 2024): 2199–2206, https://doi.org/10.57250/AJSH.V4I3.885.

punitive logic may injure the sense of justice when the offender's age, social vulnerability, proportionality, and restorative possibilities are not placed at the centre of legal reasoning.[30] These cases do not mean that minor wrongdoing should be ignored. Rather, they show that criminal law must be capable of distinguishing between acts requiring harsh condemnation and acts that can be resolved through apology, restitution, supervision, guidance, or community-based correction. A criminal justice system that cannot make this distinction risks losing its moral legitimacy.

The Indonesian National Criminal Code, enacted through Law Number 1 of 2023, provides an important normative opening to respond to this crisis. The *considerans* of the Code states that national criminal law must be based on Pancasila, the 1945 Constitution, human rights, and a balance between public and individual interests, between protection of offenders and victims, between certainty and justice, between written law and living law, and between national and universal values.[31] This foundational clause is significant because it shows that the new Code is not intended to reproduce colonial penal legality in a new textual form. It is designed to reconstruct criminal law around balance, humanity, and substantive justice. In sentencing theory, this orientation may be read as a move from rigid retributivism toward a more integrated model of punishment, combining prevention, rehabilitation, restoration, proportionality, and social harmony.[32]

The most explicit normative basis for this shift appears in Article 51 of the National Criminal Code. Sentencing is directed toward preventing crime by upholding legal norms for the protection and guidance of society, socializing the convicted person through guidance so that the person may become good and useful, resolving conflicts caused by crime, restoring balance, bringing security and peace to society, and cultivating remorse while relieving guilt in the convicted person. Article 52 further provides that sentencing is not intended to degrade human dignity. These provisions are crucial because they reject a purely pain-centred theory of punishment. Punishment is not defined as suffering for its own sake. Its legitimacy depends on whether it can protect society, reform the offender, repair the social disruption caused by crime, and preserve human dignity.

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[30] Ferry Fathurokhman, "The Necessity of Restorative Justice on Juvenile Delinquency in Indonesia, Lessons Learned from the Raju and AAL Cases," *Procedia Environmental Sciences* 17 (January 1, 2013): 967–75, https://doi.org/10.1016/J.PROENV.2013.02.115.

[31] Amir Minabari, "The Contest of Moral Values and Human Rights in the Formulation of Criminal Offenses Inbthe National Criminal Code," *Journal of Strafvordering Indonesian* 2, no. 6 (January 27, 2026): 9–19, https://doi.org/10.62872/AJ5D0D93.

[32] Wakhidatul Mubarokah, Ali Masyhar Mursyid, and Cahya Wulandari, "The Urgency of Renewing the Theory of Punishment in the Formation of National Criminal Law Policy," *Jurnal Pendidikan Dan Kebudayaan (JURDIKBUD)* 5, no. 1 (June 13, 2025): 29–43, https://doi.org/10.55606/JURDIKBUD.V5I1.6389.

Articles 51 and 52 supply purposive standards for interpreting sentencing choices. They do not independently authorize algorithmic assessment or electronic monitoring. Their relevance is that a proposed intervention must be assessed against sentencing purposes and human dignity. New coercive restrictions and personal-data processing require an identifiable legal basis beyond an appeal to desirable penal objectives.

Article 53 strengthens this movement by requiring judges to uphold both law and justice, and when legal certainty conflicts with justice, justice must be prioritized. This provision is philosophically important because it recognizes that sentencing cannot be reduced to mechanical application of statutory threats. The judge is not merely a "mouth of the law" in the narrow positivist sense, but a guardian of proportionality, humanity, and contextual justice. Article 54 then provides detailed sentencing guidelines, requiring consideration of the form of guilt, motive, inner attitude, planning, method of commission, conduct after the offence, personal history, social and economic condition, the effect of punishment on the offender's future, the effect of the crime on the victim or victim's family, forgiveness from the victim or family, and values of law and justice living in society. Article 54 paragraph (2) also recognizes a form of *judicial pardon*, allowing the judge, on grounds of justice and humanity, not to impose punishment or measures when the act is light, the offender's personal circumstances justify leniency, or subsequent circumstances support such a decision.

From the standpoint of sentencing theory, Articles 51 to 54 are the normative heart of decarceration in the National Criminal Code. They introduce individualization of punishment, proportionality, restorative orientation, and human dignity as binding considerations. Individualization means that punishment must be adjusted to the offender, offence, victim impact, and social context. Proportionality means that punishment must not exceed the seriousness of the act and culpability of the offender. Restorative orientation means that sentencing should not only inflict suffering but also repair conflict and restore social balance.[33] Human dignity means that even a convicted person remains a legal subject, not an object of state vengeance.[34] These principles provide the philosophical foundation for limiting imprisonment, especially when non-custodial sanctions can achieve the same or better penal objectives.

This normative direction becomes clearer in Article 57, which provides that where an offence is punishable by alternative principal sanctions, the lighter

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[33] Cherie Dawson-Edwards, "Restorative Justice," *The Encyclopedia of Crime and Punishment*, December 28, 2015, 1–5, https://doi.org/10.1002/9781118519639.WBECPX163.

[34] Gabriela N. Chihaia, "Respect for Human Dignity – The Fundamental Principle of Romanian and European Penal Enforcement Law," *Bulletin of the Transilvania University of Braşov. Series VII: Social Sciences • Law* 18, no. 67 (February 16, 2026): 171–80, https://doi.org/10.31926/BUT.SSL.2025.18.67.3.18.

principal sanction must be prioritized if it is considered appropriate and can support the achievement of sentencing objectives. This provision is not merely technical. It contains a penal-minimalist logic: when the law offers alternatives, the judge should not automatically choose the heavier sanction. The lighter sanction becomes normatively preferable if it is sufficient to achieve prevention, rehabilitation, restoration, and public protection. This is closely related to the doctrine of *ultima ratio* or *ultimum remedium* in criminal law. Although criminal law may be necessary, its harshest form, particularly imprisonment, should be used with restraint. In a constitutional democracy, the deprivation of liberty must be justified not only by legality but also by necessity, proportionality, and social utility.

Article 65 recognizes five principal sanctions: imprisonment, pidana tutupan (a distinct custodial sanction), supervision, fines, and community service. Pidana tutupan must be distinguished from community-based sanctions because it entails deprivation of liberty. The inclusion of supervision and community service nevertheless expands the statutory options for imposing accountability outside custodial institutions. The inclusion of supervision and community service as principal sanctions marks an important shift from a prison-centred model to a more plural sentencing architecture. This pluralism is essential because different crimes require different responses. A first-time negligent offender, for example, may be more appropriately sentenced to supervision or community service than imprisonment. A low-income offender who commits a minor property offence may require restitution, apology, and structured supervision rather than incarceration that destroys livelihood and family stability. A person convicted of a low-level offence related to addiction may require treatment and monitoring rather than prison exposure to more serious criminal networks.

Article 70 provides one of the clearest textual foundations for decarceration. It states that, while still considering Articles 51 to 54, imprisonment should, as far as possible, not be imposed when certain circumstances are present, including when the defendant is a child, is over 75 years old, is a first-time offender, the harm or suffering of the victim is not too great, the defendant has paid compensation, the offence occurred because of strong incitement, the offence resulted from a situation unlikely to recur, the defendant's personality and conduct indicate that he or she is unlikely to reoffend, imprisonment would cause great suffering to the defendant or family, guidance outside prison is expected to succeed, a lighter sentence would not reduce the seriousness of the offence, the offence occurred within the family, or the offence was committed through negligence. This provision represents a profound normative correction of carceral sentencing. It does not abolish imprisonment, but it reverses the judicial habit of treating prison as the normal answer. It requires judges to ask whether prison is truly necessary.

At the same time, Article 70 paragraph (2) sets boundaries. The non-imposition preference does not apply to offences punishable by imprisonment of five years or more, offences carrying a special minimum penalty, certain offences that seriously endanger or harm society, or offences that harm state finances or the national economy. This limitation is important because decarceration must not be confused with penal abolitionism. The Code maintains seriousness thresholds. It recognizes that certain offences require strong penal intervention, especially when they involve public danger, economic harm to the state, or special legislative gravity. Therefore, the Indonesian model is better understood as selective decarceration: a strategy to reduce unnecessary imprisonment for eligible offenders and offences, while maintaining custodial punishment for serious criminality.[35]

These exclusions limit reliance on Article 70(1), rather than establishing an automatic custodial outcome under every sentencing provision. The court must separately examine the requirements of the particular alternative sanction. First-offender status, restitution, or an assessment of low risk does not by itself remove a statutory exclusion or authorize an otherwise unavailable sanction.

Article 71 provides a conditional mechanism for replacing imprisonment with a fine. Paragraph (1) concerns offences punishable solely by imprisonment of less than five years, where the judge considers imprisonment unnecessary after applying Articles 51–54. Paragraph (2) specifies alternative conditions: the offence has no victim, the victim does not object, or the offence does not constitute recidivism. Paragraph (3) prescribes a fine between categories III and V, while paragraph (4) addresses prior imprisonment for offences committed before the age of eighteen. These provisions must be read together rather than treating paragraph (1) as an unrestricted substitution power. Article 80 additionally requires consideration of the defendant's actual income and expenditure. Substitution must therefore satisfy statutory eligibility and avoid imposing disproportionate economic burdens.

The regulation of supervision punishment also strengthens the non-custodial architecture. Article 75 provides that a defendant who commits an offence punishable by imprisonment of no more than five years may be sentenced to supervision, while still considering Articles 51 to 54 and Article 70. Article 76 then regulates supervision by requiring a general condition that the convicted person must not commit another crime, and it allows special conditions such as compensation for losses caused by the offence or obligations to do or not do certain acts, without violating freedom of religion, belief, or political freedom. This model is significant because it constructs punishment as

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[35] Safaruddin Harefa et al, "Transformasi Kebijakan Pemidanaan Dalam KUHP Nasional: Menuju Sistem Pemidanaan Yang Berkeadilan Dan Humanis," *Simbur Cahaya* XXXII, no. 2 (December 31, 2025): 283–306, https://doi.org/10.28946/SC.V32I2.5050.

monitored liberty rather than absolute confinement. It allows the offender to remain in the community while being legally bound to repair harm, avoid reoffending, and comply with rehabilitative obligations. In theoretical terms, supervision punishment reflects a hybrid model: it contains denunciation, prevention, rehabilitation, and social reintegration without resorting to full incarceration.[36]

Community service under Article 85 adds another layer to this decarcerative framework. It may be imposed on a defendant who commits an offence punishable by imprisonment of less than five years, where the judge imposes imprisonment of no more than six months or a fine of no more than category II. In deciding community service, the judge must consider factors such as the defendant's acknowledgment of the crime, work capacity, consent, social history, protection of work safety, religion and political beliefs, and the defendant's ability to pay the fine. Community service is important because it transforms punishment into socially useful accountability. It communicates condemnation without severing the offender from society. It also allows the offender to repay social harm through constructive labour rather than passive suffering in prison.[37]

Internationally, this direction is consistent with the growing emphasis on non-custodial measures. UNODC explicitly identifies alternatives to imprisonment as instruments to reduce prison overcrowding and support the sustainable use of non-custodial measures, particularly within the framework of the Tokyo Rules and Bangkok Rules.[38] England and Wales also moved in a similar direction through the Sentencing Act 2026, which introduced a presumption for courts to suspend short custodial sentences of twelve months or less, while preserving judicial authority to impose short imprisonment in cases involving serious risks or the need to protect victims.[39] This comparative development is relevant for Indonesia because it shows that the movement away from short imprisonment is not a peripheral reform. It has become part of mainstream penal policy in jurisdictions confronting overcrowding, recidivism, and the limited rehabilitative value of short custodial sentences.

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[36] Dika Agusta, Abdul Madjid, and Nurini Aprilianda, "Reforming Indonesian Criminal Law: Integrating Supervision, Punishment, And Rehabilitation For Restorative Justice," *International Journal of Islamic Education, Research and Multiculturalism (IJIERM)* 7, no. 1 (February 25, 2025): 54–68, https://doi.org/10.47006/IJIERM.V7I1.434.

[37] Arjun Singh, "Community Service as an Emerging Punishment: Legal and Challenges," *INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT* 9, no. 11 (October 10, 2025): 1–9, https://doi.org/10.55041/IJSREM53709.

[38] Alana Van Gundy, "Bangkok Rules," *The Encyclopedia of Women and Crime*, January 1, 2019, 1–3, https://doi.org/10.1002/9781118929803.EWAC0549.

[39] Roberts and Pina-Sánchez, "From Principles to Populism: Sentencing in England and Wales."

The Indonesian National Criminal Code, therefore, contains an internal normative logic for decarceration. This logic appears in at least five layers: first, the philosophical layer of balance, humanity, and justice in the *considerans*; second, the purposive layer in Article 51, which frames sentencing as prevention, rehabilitation, conflict resolution, and restoration; third, the dignity layer in Article 52; fourth, the judicial discretion and proportionality layer in Articles 53 and 54; and fifth, the sanction-design layer in Articles 57, 65, 70, 71, 75, 76, and 85. These provisions do not eliminate imprisonment, but they reposition imprisonment as one option among several penal responses. The judge is required to consider whether imprisonment is necessary, proportionate, humane, and compatible with the future reintegration of the offender.

The distinction between three levels of reasoning is essential. The availability and conditions of sanctions belong to positive law. Reading those provisions together as supporting selective decarceration is the author's interpretation. The algorithmic workflow, technical audits, and additional disclosure arrangements are prospective recommendations unless a specific existing source establishes them. The sanction architecture should not be mistaken for an already operative system of algorithmic sentencing.

The main challenge lies in implementation. If judges continue to interpret imprisonment as the safest institutional choice, the decarcerative potential of the National Criminal Code may remain textual. If prosecutors continue to demand custodial sentences in minor cases, and if probation, community supervision, restorative mechanisms, and social work infrastructure are not adequately prepared, the Code may fail to reduce overcrowding. Decarceration requires more than statutory recognition; it requires sentencing guidelines, correctional capacity outside prison, reliable community supervision, victim-sensitive mechanisms, social worker involvement, probation officers, and public education. Without institutional readiness, non-custodial sanctions may be perceived as symbolic, weak, or unenforceable.

The analysis establishes a statutory basis for reconsidering unnecessary imprisonment, rather than demonstrating a need for algorithmic intervention. The National Criminal Code provides several non-custodial options, each subject to specific conditions, while overcrowding supplies a policy reason to examine their implementation. Whether an algorithm offers an advantage over ordinary judicial assessment and adequately resourced community services remains a separate question. Any proposed tool must therefore demonstrate an identifiable contribution to lawful sentencing decisions, remain open to challenge, and avoid additional restrictions that would not otherwise have been imposed. The following analysis examines the normative conditions governing such assistance without assuming its technological necessity or empirical effectiveness.

Maqāṣid al-Sharī'ah as an Ethical Framework for Humanizing Technology-Assisted Sentencing

The discussion on technology-assisted sentencing cannot be placed only within the language of efficiency, prediction, and administrative modernization. In criminal justice, technology is never neutral when it is used to classify human risk, influence judicial discretion, determine eligibility for non-custodial sanctions, monitor compliance, or recommend differentiated penal treatment.[40] A digital instrument may appear objective because it operates through data, formulas, statistical models, and automated classification, yet the data used by such an instrument is often produced by unequal social realities, selective policing practices, prosecutorial patterns, poverty, geography, race, class, gender, and prior institutional bias.[41] For this reason, the ethical problem of technology-assisted sentencing is not simply whether an algorithm is accurate, but whether its use is compatible with justice, human dignity, accountability, proportionality, and the moral purpose of punishment. Within an Islamic legal framework, this is precisely where *Maqāṣid al-Sharī'ah* becomes important, because it evaluates law not merely by its formal validity, but by its ability to realize benefit, prevent harm, preserve human dignity, and protect the fundamental interests of human life.[42]

Maqāṣid al-Sharī'ah refers to the higher objectives of Islamic law. In contemporary legal discourse, it is often understood as a purposive and ethical framework through which legal rules are assessed according to their contribution to the preservation of essential human interests.[43] These interests are commonly formulated as protection of religion, life, intellect, lineage or family, and property, while contemporary *maqāṣid* scholarship has expanded the framework to include human dignity, freedom, justice, equality, social order, and public welfare. In the context of sentencing, *Maqāṣid al-Sharī'ah* provides a normative filter for determining whether punishment truly serves justice or merely reproduces suffering.[44] It asks whether a sanction protects society without

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[40] Georgios Bouchagiar, "Is Europe Prepared for Risk Assessment Technologies in Criminal Justice? Lessons from the US Experience," *New Journal of European Criminal Law* 15, no. 1 (March 1, 2024): 72–98, https://doi.org/10.1177/20322844241228676

[41] Jane E. Fountain, "The Moon, the Ghetto and Artificial Intelligence: Reducing Systemic Racism in Computational Algorithms," *Government Information Quarterly* 39, no. 2 (April 1, 2022): 1–5, https://doi.org/10.1016/J.GIQ.2021.101645.

[42] Al-Turabi and Auda, "Toward a Maqāṣid-Based Legal Reform: Systemic Thinking for Social Transformation in the Modern Muslim World."

[43] Zainuddin Sunarto, "Bridging Tradition and Modernity: Al-Syāṭibī's Maqāṣid Al-Sharī'ah as a Framework for Contemporary Islamic Jurisprudence," *Al-Fiqh: Journal of Contemporary Islamic Law* 1, no. 1 (July 22, 2025): 40–48, https://doi.org/10.61987/FIQH.V1I1.803.

[44] Ilham Abdi Prawira et al., "The Paradigm Shift of Maqāṣid Al-Syarī'ah in Contemporary Society: From Protection to Development," *Academica: Journal of Multidisciplinary*

destroying the offender, whether it restores order without degrading human dignity, whether it prevents harm without creating new harm, and whether it enables moral correction rather than merely imposing institutional pain. Recent scholarship on criminal law reform in Muslim-majority countries also emphasizes that integrating *Maqāṣid al-Sharīʿah* should not be treated as a symbolic compromise between religious law and human rights, but as a transformative project that rethinks legal authority, justice, dignity, rehabilitation, and social restoration.[45]

This ethical orientation is highly relevant to technology-assisted sentencing because algorithmic systems can easily shift punishment from human judgment to risk management. The danger is not only that algorithms may be wrong, but that they may create a new penal rationality in which the offender is no longer viewed as a moral subject capable of remorse, reform, and reintegration, but as a statistical profile. In such a model, a person may be treated not according to what has been proven in court, but according to what the system predicts he or she might do in the future. This produces a serious normative tension. Criminal law is traditionally grounded in culpability, legality, proportionality, and personal responsibility, while predictive technology is oriented toward probability, correlation, classification, and risk control. The more sentencing depends on predictive instruments, the greater the danger that punishment will move from responsibility for past wrongdoing to preventive control over future possibilities. From a *maqāṣid* perspective, such a shift is ethically problematic if it weakens justice, harms dignity, or produces excessive surveillance.

The experience of the COMPAS risk assessment controversy in the United States illustrates this problem. Dressel and Farid's 2018 study in *Science Advances* found that the COMPAS recidivism prediction instrument was no more accurate or fair than predictions made by untrained humans with limited criminal justice information.[46] This finding challenged the popular assumption that algorithmic assessment is naturally superior to human judgment. The case of *State v. Loomis* also shows how algorithmic tools can enter sentencing while raising due process concerns. The Wisconsin Supreme Court held that the use of COMPAS in sentencing did not violate due process when used properly, but the case remains globally significant because the defendant challenged the use of a proprietary risk assessment tool whose methodology was not fully disclosed to

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Studies 9, no. 2 (December 15, 2025): 22–32, https://doi.org/10.22515/ACADEMICA.V9I2.14126.

[45] Ibrahim et al., "Integration of Maqaṣid Al-Shari'ah in the Criminal Law Reform to Achieve Justice and Human Dignity."

[46] Aaron Clauset, "Algorithms Fail to Improve Predictions," *Science* 359, no. 6373 (January 19, 2018): 286, https://doi.org/10.1126/SCIENCE.359.6373.285-I.

the court or the defendant.[47] These examples show that algorithmic sentencing creates a double problem: it may lack sufficient accuracy, and it may lack sufficient transparency. In Islamic legal ethics, both problems matter because justice cannot rest on opacity, and human dignity cannot be subordinated to an inscrutable mechanism.

The controversy must be separated into predictive validity, fairness, and procedural legitimacy. Aggregate accuracy can conceal unequal false-positive or false-negative rates; different fairness criteria can also produce different evaluations. The findings of a particular comparison do not establish that every model is inaccurate, nor can foreign performance establish Indonesian validity. The relevant lesson is to specify the prediction target and evaluation period, test local performance and subgroup errors, disclose limitations, and permit meaningful challenge. A risk forecast cannot substitute for proof of the offence.

The first *maqāṣid*-based safeguard is ***ḥifẓ*** *al-nafs*, the protection of life and bodily integrity. In sentencing, ***ḥifẓ*** *al-nafs* requires that punishment must not unnecessarily endanger the life, health, or safety of the offender, victim, or society.[48] Technology-assisted sentencing may support this objective when it helps identify defendants who can be safely managed outside prison, detect compliance risks, or prevent unnecessary exposure to overcrowded and harmful custodial environments. However, it may violate ***ḥifẓ*** *al-nafs* if it wrongly classifies a person as high-risk and leads to excessive confinement, or if electronic monitoring produces psychological pressure, social exclusion, and constant anxiety without proportional justification. ***Ḥifẓ*** *al-nafs* therefore demands that risk assessment must be validated, contextual, reviewable, and never used as the sole basis for imposing harsher sanctions. It must also require judges to examine the concrete human consequences of digital supervision, including mental health, family stability, employment, and access to social support.

For this framework, protection indicators include verified victim-safety concerns, access to essential healthcare, serious psychological harm, and incidents of violence during supervision. The judge and supervising institution should document the evidence and revisit material changes. Where an erroneous classification or disproportionate condition threatens safety, the proposed response is correction, non-reliance on the assessment, or consideration of a less restrictive lawful arrangement. These are proposed review mechanisms, not automatic legal consequences created by maqāṣid alone.

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[47] Han Wei Liu, Ching Fu Lin, and Yu Jie Chen, "Beyond State v Loomis: Artificial Intelligence, Government Algorithmization and Accountability," *International Journal of Law and Information Technology* 27, no. 2 (June 1, 2019): 122–41, https://doi.org/10.1093/IJLIT/EAZ001.

[48] Achmad Musyahid et al., "An Actualization of Hifdz Al-Nafs Theory In Sentencing: A Philosophical Review Of Prisoner's Rights To Healthcare At The Class IIb Detention Center In North Sinjai," *Al-Daulah : Jurnal Hukum Pidana Dan Ketatanegaraan* 12, no. 1 (June 24, 2023): 144–60, https://doi.org/10.24252/AD.VI.38438.

The second safeguard is *ḥifẓ al-ʿaql*, the protection of intellect, rational agency, and moral capacity. Sentencing should not merely restrain the body; it should preserve and develop the offender's capacity for moral reflection and responsible social participation.[49] This is closely related to rehabilitation, education, counselling, and behavioral correction. In the Indonesian National Criminal Code, this orientation can be connected to the recognition of "measures" such as counselling, rehabilitation, job training, institutional care, and restoration of harm under Article 103, while Article 104 requires judges, when imposing such measures, to pay attention to the sentencing objectives and guidelines in Articles 51 to 54. From a *maqāṣid* perspective, technology may be legitimate when it supports rehabilitation, for example by helping probation officers tailor supervision intensity, connect offenders with treatment programs, or identify social needs. However, technology becomes ethically defective when it reduces human beings to a fixed risk identity and denies their capacity to change. A person labelled by an algorithm as "high-risk" may be trapped in a self-fulfilling cycle: heavier supervision, more technical violations, fewer opportunities, and deeper social exclusion.[50]

The third safeguard is *ḥifẓ al-māl*, the protection of property and economic welfare. In sentencing, this principle requires attention to the economic consequences of punishment.[51] Technology-assisted sentencing may reduce costs associated with imprisonment and allow offenders to maintain employment, support families, and compensate victims. This can support *maṣlaḥah* because non-custodial sanctions may preserve economic productivity and reduce the social costs of incarceration. However, digital sentencing tools may also create economic injustice. Electronic monitoring fees, mandatory reporting costs, transportation burdens, loss of work flexibility, and digital access requirements may disproportionately affect poor defendants. If a non-custodial sentence is designed without sensitivity to poverty, it may become formally lenient but materially oppressive. The National Criminal Code itself recognizes the importance of economic context in sentencing by requiring judges to consider the offender's social and economic circumstances under Article 54, and by allowing lightness of the act, personal circumstances, and post-offence developments to become grounds for not imposing punishment or measures in

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[49] Musyahid et al.

[50] Karen Joisten and Tobias Renner, "Technological Biases and Human Prejudices: A Technoethical Challenge," *International Conference on Electrical, Computer, Communications and Mechatronics Engineering, ICECCME 2024*, 2024, 1–5, https://doi.org/10.1109/ICECCME62383.2024.10797208.

[51] Saidu Ado, Mohammad Abdel Salama, and Abdallah Saleh Abdallah, "The Maqasid Al-Shari'ah and the Protection of Family Economics in Islamic Law: A Reflection on Surah Al-Baqarah 2:188," *QURU': Journal of Family Law and Culture* 3, no. 3 (September 1, 2025): 264–82, https://doi.org/10.59698/QURU.V3I3.477.

the name of justice and humanity. This logic supports a *maqāṣid*-based warning: technology-assisted punishment must not become a hidden tax on poverty.

The fourth safeguard is the protection of dignity, which may be expressed through *ḥifẓ al-ʿirḍ* or the broader contemporary concept of *karāmah insāniyyah*. Human dignity is central because algorithmic tools can silently degrade a person by transforming personal life into data points, exposing private behavior to constant monitoring, or creating stigma through risk labels. UNESCO's Recommendation on the Ethics of Artificial Intelligence states that human rights and dignity are the cornerstone of AI ethics and emphasizes transparency, fairness, and human oversight.[52] This principle aligns strongly with Islamic legal ethics. Punishment may condemn an unlawful act, but it may not erase the offender's humanity. The Indonesian National Criminal Code also reflects this orientation through Article 52, which provides that sentencing is not intended to degrade human dignity. Therefore, in technology-assisted sentencing, dignity requires at least four protections: the offender must know when algorithmic tools are used; the offender must be able to challenge the data and assumptions used; the judge must remain the final decision-maker; and the technological measure must not produce unnecessary humiliation, exposure, or social death.

The doctrinal construction distinguishes honour and reputation, associated with ḥifẓ al-ʿirḍ, from the broader evaluative principle of karāmah. Their use does not imply that all classical formulations recognize a separate sixth necessity. In this article, dignity concerns both substantive treatment and procedural agency: confidential handling of data, accessible explanations, correction of stigmatizing classifications, and avoidance of humiliating supervision. The contemporary extension is stated explicitly rather than presented as an uncontested classical taxonomy.

The fifth safeguard is *maṣlaḥah*, understood as the realization of public benefit and prevention of harm. In sentencing, *maṣlaḥah* requires a balance between the interests of victims, offenders, communities, and the state. Technology can serve *maṣlaḥah* if it helps courts avoid unnecessary imprisonment, strengthens supervision, supports victim protection, and improves the allocation of correctional resources. However, *maṣlaḥah* is not identical with efficiency. A policy may be efficient but unjust; fast but inaccurate; cheap but discriminatory; technologically advanced but morally impoverished. The Dutch SyRI case is instructive in this regard. The Hague District Court halted the use of the Dutch government's risk indication system for welfare fraud because the legal framework regulating SyRI violated higher law, especially

[52] Ljupcho Grozdanovski and Jerome De Cooman, "Individual Safeguards in the Era of AI: Fair Algorithms, Fair Regulation, Fair Procedures," *Cambridge Forum on AI: Law and Governance* 1 (2025): 1–7, https://doi.org/10.1017/CFL.2025.10.

in relation to privacy and human rights.[53] Although SyRI was not a sentencing tool, the case is highly relevant because it shows how state risk-profiling systems can threaten vulnerable groups when transparency, proportionality, and rights protection are insufficient. In a *maqāṣid* analysis, such a system fails because it pursues administrative benefit while producing *mafsadah*, namely harm to privacy, equality, and public trust.

The proposed balancing procedure distinguishes constraints that cannot be traded away from interests requiring contextual assessment. An unlawful sanction, discriminatory classification, or denial of a meaningful opportunity to challenge an assessment cannot be justified by administrative efficiency. Once these constraints are satisfied, the court should identify the legitimate objective, examine evidence of the anticipated benefit, compare less restrictive alternatives, and assess the remaining burdens. Victim safety, rehabilitation, privacy, dignity, and economic consequences require separate consideration before an overall justification is reached. Where these interests conflict, the judgment should explain why the selected measure is necessary and why available alternatives are insufficient. Uncertainty should be acknowledged rather than converted into a presumption of dangerousness. This procedure represents the article's normative construction of maqāṣid-based review. SyRI contributes a limited comparative lesson about profiling, proportionality, and rights protection; it does not establish sentencing authority.

The sixth safeguard is ta'zīr, which is especially important because technology-assisted sentencing will mostly operate within discretionary and policy-sensitive areas of punishment. In Islamic criminal law, ta'zīr refers to sanctions not fixed by textual prescriptions and left to the discretion of legitimate authority, judges, or policymakers to respond to wrongdoing in a manner appropriate to context, harm, offender condition, and public interest. This flexibility makes ta'zīr highly compatible with modern sentencing reform, including community service, supervision, rehabilitation, counselling, and electronic monitoring. However, ta'zīr is not arbitrary discretion. It must remain bound by maṣlaḥah, proportionality, non-excessiveness, and the prevention of injustice. Malaysian discussions on ta'zīr emphasize that its objectives include deterring offenders, safeguarding society, and maintaining public order. Studies on community service orders from a Maqāṣid al-Sharī'ah perspective also argue that such punishments may reduce pressure on correctional institutions while giving offenders meaningful and educational accountability. Thus, algorithmic decarceration can be evaluated through a contemporary ta'zīr analogy only if it remains educational, corrective, proportionate, and reviewable.[54]

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[53] Marvin van Bekkum and Frederik Zuiderveen Borgesius, "Digital Welfare Fraud Detection and the Dutch SyRI Judgment," *European Journal of Social Security* 23, no. 4 (December 1, 2021): 323–40, https://doi.org/10.1177/13882627211031257

[54] Adi Syahputra Sirait et al, "Community Service Order Punishment: Alternatives in The Criminal Law System From Maqāṣid Al-Sharīʿah Perspective," *Nurani: Jurnal Kajian Syari'ah*

The ta'zīr analogy requires limits concerning legitimate authority, proportionality, and evidentiary justification. Different juristic positions should not be collapsed into unrestricted discretion. Here ta'zīr is a comparative normative perspective, not an independent source of Indonesian sentencing power. Predictive information neither establishes guilt nor provides a sufficient standalone reason to increase punishment. Its proposed role is confined to assisting consideration of lawful options after responsibility has been established through the applicable evidentiary process.

The concept of *iṣlāḥ* deepens this argument by shifting attention from control to moral and social repair. *Iṣlāḥ* implies reform, reconciliation, restoration, and improvement.[55] In sentencing, it requires the legal system to ask whether a sanction contributes to the offender's transformation and the restoration of social relationships. Technology-assisted sentencing may support *iṣlāḥ* when it helps design individualized pathways: rehabilitation for addiction, counselling for violence-related behavior, job training for economically vulnerable offenders, structured apologies or restitution for victims, and community service connected to the nature of the harm caused. This orientation is visible in the explanation of Article 103 of the National Criminal Code, which defines counselling as guidance to overcome problems and change behavior positively and constructively, rehabilitation as an integrated process of physical, mental, and social recovery, and job training as preparation for returning to society and entering the labour market. This normative design is closer to *iṣlāḥ* than to pure retribution, because it treats punishment as a process of correction rather than a mere event of suffering.

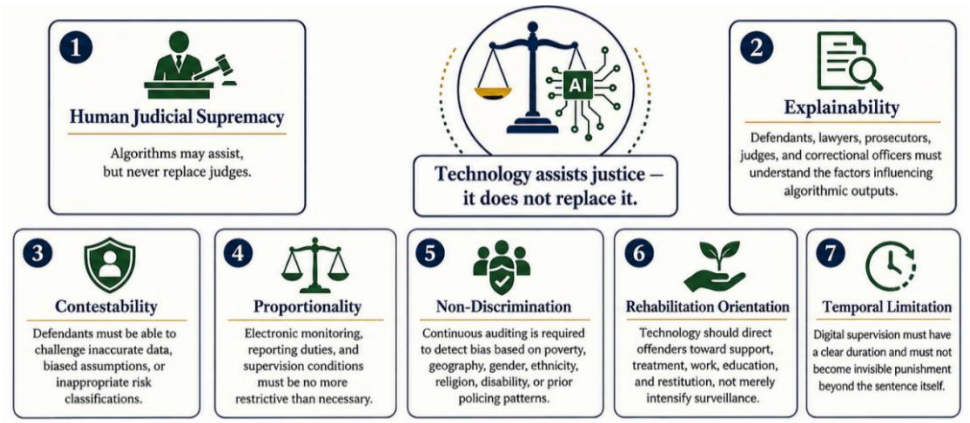
At this point, *Maqāṣid al-Sharī'ah* can be used to construct a clear ethical boundary between technology that humanizes sentencing and technology that mechanizes punishment. Technology humanizes sentencing when it expands judicial understanding of the offender's social condition, helps identify suitable non-custodial measures, supports rehabilitation, reduces unnecessary incarceration, enables victim compensation, and protects the public through proportionate supervision. Technology mechanizes punishment when it produces opaque scores, narrows judicial reasoning, reinforces social bias, treats poverty as risk, converts personal vulnerability into penal danger, or pressures judges to follow machine-generated recommendations. This distinction is essential because the same instrument, such as risk assessment or electronic monitoring, can serve either justice or injustice depending on its legal design, institutional use, and ethical safeguards.

Dan Masyarakat 24, no. 2 (October 10, 2024): 273–96, https://doi.org/10.19109/NURANI.V24I2.24276.

[55] Hadi Purnomo, Widhi Handoko, and Murad Altwaiqat, "Reframing Medical Malpractice Resolution: Restorative Justice between Indonesian Criminal Law and Iṣlāḥ in Contemporary Islamic Law," *MILRev: Metro Islamic Law Review* 5, no. 1 (March 17, 2026): 299–327, https://doi.org/10.32332/MILREV.V5I1.13100.

Regulation (EU) 2024/1689 distinguishes prohibited practices from high-risk applications. Article 5(1)(d) addresses specified criminal-risk predictions based solely on profiling or personality characteristics, subject to its exception. Annex III, points 6 and 8, identifies relevant law-enforcement and administration-of-justice uses; the intended function and classification criteria must be examined for each system.[56] Under Article 113, as amended by Regulation (EU) 2026/1744, the Article 5 prohibitions generally applied from 2 February 2025, while Chapter III, Sections 1–3, except Article 6(5), apply from 2 December 2027 to systems classified as high-risk under Article 6(2) and Annex III.[57] The distinction between an operative prohibition and deferred high-risk obligations matters. For Indonesia, these provisions provide comparative governance lessons rather than domestic sentencing authority.[58] Maqāṣid adds an assessment of whether the particular intervention protects safety, dignity, rehabilitation, and public benefit.

Picture 1. Minimum *Maqāṣid*-Based Safeguards for Technology-Assisted Sentencing



Source: Author's normative synthesis of Articles 51–54 of Law Number 1 of 2023 and the maqāṣid discussions in Ibrahim et al. (2025), Musyahid et al. (2023), and Bawono et al. (2025), cited in the accompanying analysis. The arrangement of safeguards is the author's construction, not an empirically validated model.

A *maqāṣid*-based framework for technology-assisted sentencing should therefore require several minimum safeguards. First, there must be human judicial supremacy, meaning that algorithms may assist but never replace judges.

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[56] European Union, Regulation (EU) 2024/1689, arts. 5(1)(d), 6, and 113 and annex III, pts. 6 and 8.

[57] European Commission, AI Act Service Desk, "Article 113: Entry into Force and Application," consolidated text as at July 27, 2026, https://ai-act-service-desk.ec.europa.eu/en/ai-act/article-113 (accessed October 14, 2026).

[58] Martin Ebers, "Truly Risk-Based Regulation of Artificial Intelligence How to Implement the EU's AI Act," *European Journal of Risk Regulation* 16, no. 2 (June 1, 2025): 684–703, https://doi.org/10.1017/ERR.2024.78.

Second, there must be explainability, so that defendants, lawyers, prosecutors, judges, and correctional officers can understand the factors influencing algorithmic outputs. Third, there must be contestability, allowing the defendant to challenge inaccurate data, biased assumptions, or inappropriate risk classifications. Fourth, there must be proportionality, ensuring that electronic monitoring, reporting duties, or supervision conditions are no more restrictive than necessary. Fifth, there must be non-discrimination, requiring continuous auditing for bias based on poverty, geography, gender, ethnicity, religion, disability, or prior policing patterns. Sixth, there must be rehabilitation orientation, so that technology directs offenders toward support, treatment, work, education, and restitution rather than merely intensifying surveillance. Seventh, there must be temporal limitation, because digital supervision without clear duration risks becoming invisible punishment beyond the sentence itself.

Table 1. Reviewable safeguards for the proposed model

Principle	Evidence or indicator	Responsible actor	Review and correction
Legality	Authority for sanction, restriction, and data use	Court and deploying institution	Exclude unauthorized use
Reliability	Local validation and subgroup error rates	Provider and independent auditor	Suspend unreliable applications
Contestability	Disclosure and opportunity to correct data	Court and parties	Correction and reassessment before reliance
Proportionality	Comparison with less restrictive options	Judge	Remove unnecessary conditions
Non-discrimination	Proxy analysis and unequal-error audit	Independent auditor	Correct or suspend discriminatory use
Rehabilitation	Access to care, work, education, and support	Authorized supervising institution	Revise support and supervision plan
Temporal limits	Defined duration and lawful review dates	Competent authority	Modify or end restrictions lawfully

Source: Author's proposed framework derived from Articles 51–54 and 70–76 of Law Number 1 of 2023, the maqāṣid analysis above, and Liu, Lin, and Chen (2019). Indicators and remedies are normative recommendations.

The safeguards require identifiable compliance evidence. Their application should record the relevant indicator, responsible actor, audit or review procedure, and remedy available to an affected person. Table 1 translates the proposed principles into reviewable requirements. These additional technological procedures are recommendations and require appropriate legal and institutional arrangements before implementation.

These safeguards are also consistent with the internal logic of the Indonesian National Criminal Code. Article 76 on supervision punishment

allows the court to impose general and special conditions, including compensation for harm or obligations to do or not do certain acts, while also protecting freedom of religion, belief, and political freedom. This means that even when the state supervises an offender outside prison, the supervision cannot erase basic liberties. Article 85 on community service also requires attention to the defendant's capacity, consent, social history, occupational safety, religion, political belief, and ability to pay a fine, while the official explanation states that community service may serve as an alternative to short imprisonment and light fines. These provisions show that Indonesian sentencing reform already contains a dignity-sensitive structure. The task of *Maqāṣid al-Sharīʿah* is to deepen that structure by ensuring that digital tools do not weaken the humane and corrective orientation of the Code.

The ethical challenge becomes sharper when technology-assisted sentencing is connected to electronic monitoring. Electronic monitoring can reduce imprisonment, maintain employment, and preserve family relationships.[59] It can also help supervise compliance without placing the offender in a correctional institution. Yet it may also create "digital custody" if used excessively. The offender may remain physically outside prison but live under constant state visibility, restricted mobility, social suspicion, and psychological pressure. From a *Maqāṣid al-Sharīʿah* perspective, the ethical question is not whether electronic monitoring is less severe than imprisonment in the abstract, but whether its concrete use is necessary, proportionate, beneficial, and non-degrading.[60] If it is used for low-risk offenders who could be managed through ordinary reporting, it may constitute excessive surveillance. If it prevents unnecessary imprisonment while supporting rehabilitation and victim protection, it may serve *maṣlaḥah* and *iṣlāḥ*.

Decarceration must be measured against the response that would otherwise have occurred. Monitoring imposed on a person who would have received ordinary reporting or an unrestricted sanction constitutes additional control, not a custodial sentence avoided. Evaluation must include device costs, connectivity, disability accommodations, employment restrictions, retention of location data, and psychological burdens. Technical failures should be investigated before being treated as intentional non-compliance; inability to pay should not itself justify a more restrictive response.

The ethical framework offered by *Maqāṣid al-Sharīʿah* also prevents an overly technocratic view of judicial decision-making. Sentencing is not only an

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[59] Matthew DeMichele et al., "The Intuitive-Override Model: Nudging Judges Toward Pretrial Risk Assessment Instruments," *Federal Probation* 85, no. 2 (April 25, 2018): 22–31, https://doi.org/10.2139/SSRN.3168500.

[60] Abdulsatar Shaker Salman, "Mass Surveillance and the Maqasid Al-Shari'ah: Balancing Security and Human Rights in Contemporary Islamic Discourse," *International Journal of Sharia and Law* 1, no. 1 (June 30, 2025): 65–80, https://doi.org/10.65211/PXW09065.

exercise in prediction; it is an exercise in moral judgment.[61] A judge must weigh guilt, harm, remorse, victim impact, social background, future prospects, and community values. Algorithms may help organize information, but they cannot feel remorse, understand shame, evaluate forgiveness, or grasp the symbolic meaning of reconciliation. The National Criminal Code itself requires attention to victim forgiveness, the offender's personal circumstances, the effect of punishment on the offender's future, and values of law and justice living in society.[62] These are deeply human considerations. They cannot be reduced to numerical scores without losing part of their normative meaning.

Therefore, *Maqāṣid al-Sharīʿah* should be positioned as an ethical architecture for controlling technology-assisted sentencing in Indonesia. It does not reject technology, but disciplines it. It does not romanticize judicial discretion, but requires discretion to be guided by justice, benefit, and dignity. It does not oppose risk assessment, but refuses to let risk override culpability, proportionality, and the possibility of human transformation. It does not reject electronic monitoring, but demands that monitoring remain limited, humane, and oriented toward reintegration. In this sense, *Maqāṣid al-Sharīʿah* transforms algorithmic decarceration from a mere technical proposal into a normative project: the use of technology to reduce unnecessary imprisonment, strengthen non-custodial accountability, protect victims and society, and preserve the offender's status as a human being capable of reform.

Constructing Algorithmic Decarceration as a Future Model of Non-Custodial Sentencing Reform in Indonesia

The construction of algorithmic decarceration as a future model of non-custodial sentencing reform in Indonesia must begin from a careful distinction between technology as an instrument of assistance and technology as an instrument of penal domination. Algorithmic decarceration should not be designed as a system in which artificial intelligence replaces judges, determines guilt, or mechanically fixes the type and length of punishment. It should instead be constructed as a legally controlled sentencing-support model that helps judges identify when imprisonment is unnecessary, when non-custodial punishment is sufficient, and what type of supervision, rehabilitation, restitution, or community-based sanction best corresponds to the offender's risk, needs, culpability, victim impact, and prospects of social reintegration. In this sense, algorithmic decarceration is not "algorithmic punishment," but a structured

[61] Ludfi Ludfi and Rinovian Rais, "Reconstructing Islamic Legal Ethics : The Role of Maqāṣid Al-Sharīʿah in Contemporary Muslim Community Governance," *Harmony Philosophy: International Journal of Islamic Religious Studies and Sharia* 1, no. 1 (February 29, 2024): 23–32, https://doi.org/10.70062/HARMONYPHILOSOPHY.V1I1.322.

[62] Rian Sulistio, Nyoman Nurjaya, and Abdul Madjid, "The Living Law in Judicial Decisions: Formulation and Implications of the National Criminal Code," *Jurnal Dinamika Hukum* 25, no. 1 (March 24, 2025): 70–90, https://doi.org/10.20884/1.JDH.2025.25.1.15469.

effort to reduce unnecessary incarceration through transparent, accountable, reviewable, and human-centred decision support.

The Indonesian National Criminal Code already provides the statutory architecture for this model. Article 65 recognizes various principal punishments, namely imprisonment, confinement, supervision punishment, fines, and community service, while the elucidation emphasizes that supervision punishment, fines, and community service are developed as alternatives to short-term deprivation of liberty. This provision is crucial because algorithmic decarceration requires a plural sentencing menu. Without legally recognized alternatives, algorithmic assessment would only classify offenders without giving judges meaningful non-custodial options. The existence of supervision punishment, fines, and community service enables the court to construct proportionate sanctions outside prison while maintaining accountability, deterrence, and correctional objectives.

Picture 2. Constructing Algorithmic Decarceration as a Future Model of Non-Custodial Sentencing Reform in Indonesia



Source: Author's proposed model based on Law Number 1 of 2023, Articles 51–54, 65, 70–71, 75–76, 85, and 103; the assessment-governance analysis of Liu, Lin, and Chen (2019) and Dressel and Farid (2018); and the maqāṣid analysis of Ibrahim et al. (2025). The sequence of pillars is the author's normative construction; it does not describe an existing Indonesian algorithmic system.

The first pillar of the model is an eligibility gateway. Algorithmic decarceration should only operate after guilt has been legally established and only within categories of offences that are normatively suitable for non-custodial sentencing. This gateway must follow the boundaries of the National Criminal Code. Article 70 provides that imprisonment should, as far as possible, not be imposed in certain circumstances, such as when the defendant is a child, elderly, a first-time offender, the harm to the victim is not serious, compensation has been paid, the offence is unlikely to recur, the defendant's personality indicates low likelihood of reoffending, guidance outside prison is expected to succeed, the offence occurred within the family, or the offence resulted from negligence.

However, Article 70 also excludes serious offences, offences punishable by imprisonment of five years or more, offences with special minimum penalties, offences that seriously endanger society, and offences harming state finances or the national economy. Algorithmic decarceration should therefore be selective, not absolute. Its function is to identify suitable cases for non-custodial sentencing, not to weaken the state's response to serious criminality.

The second pillar is transparent risk-needs assessment. The model should not merely ask whether the offender is "high risk" or "low risk." A future Indonesian framework should distinguish at least four dimensions: criminogenic risk, rehabilitative needs, social vulnerability, and victim-related protection. Criminogenic risk concerns the likelihood of reoffending based on legally relevant and empirically tested factors. Rehabilitative needs concern addiction, mental health, employment, education, family support, and behavioral intervention. Social vulnerability concerns poverty, disability, age, caregiving responsibility, and the risk that imprisonment will produce disproportionate harm. Victim-related protection concerns whether the victim requires no-contact orders, restitution, safe-distance supervision, or other safeguards. This multidimensional approach is necessary because a simple risk score can easily reproduce injustice. A poor offender may appear "risky" because of unstable housing or informal work, whereas the real issue may be social support rather than criminal dangerousness.

Each data category must have a specified function. Verified offence-related factors may inform assessment only when legally relevant and locally validated. Poverty, unstable housing, disability, and treatment needs should principally identify assistance or accommodation, rather than automatically increase a dangerousness score. Religion, ethnicity, political belief, and discriminatory proxies should be excluded from adverse scoring; any separate fairness-audit use requires lawful access controls. Validation should report the prediction target, time horizon, calibration, false-positive and false-negative rates, subgroup differences, and missing-data limitations. Failure to satisfy these requirements should prevent reliance on the score.

The cautionary example of *State v. Loomis* is relevant here. In that case, the defendant challenged the use of the COMPAS risk assessment tool in sentencing on due process grounds, and the Wisconsin Supreme Court held that the tool could be considered if used properly, although the controversy remains important because it exposed concerns over transparency, proprietary methodology, and the limits of algorithmic influence in sentencing. For Indonesia, the lesson is clear: risk assessment must never be treated as an unquestionable truth. It must be explainable, contestable, and subordinate to judicial reasoning. A judge may be assisted by algorithmic assessment, but the final decision must be based on legal proof, sentencing objectives, proportionality, victim impact, and the judge's reasoned evaluation.

The third pillar is judicial supremacy and human-in-the-loop sentencing. Algorithmic decarceration can only be legitimate if the judge remains the central decision-maker. This requirement is consistent with the National Criminal Code's sentencing logic, especially Article 53 and Article 54, which require the judge to uphold justice and consider the offender's guilt, motive, inner attitude, manner of commission, conduct after the offence, social and economic condition, future impact of punishment, victim impact, forgiveness, and living values of law and justice. These are not merely technical variables; they are moral and legal judgments. An algorithm can process structured information, but it cannot evaluate remorse, sincerity, forgiveness, shame, reconciliation, or the symbolic weight of justice in society. Therefore, every algorithmic recommendation must be accompanied by judicial reasons explaining whether the recommendation is accepted, modified, or rejected.

Concrete judicial control requires timely disclosure of the material inputs, relevant output, and limitations, with an opportunity for the parties to challenge errors before reliance. The judge must retain authority to reject or modify the recommendation and explain the reasons without presuming the score is correct. The proposed framework excludes automated determinations of guilt or sentence. Contesting an assessment must not itself be treated as evidence of dangerousness or lack of remorse. These proposed procedures require legal implementation rather than merely a technical designation of human involvement.

The fourth pillar is proportional electronic monitoring. Electronic monitoring may become an important tool for Indonesian non-custodial sentencing, particularly for offenders who do not require imprisonment but still require structured supervision. However, electronic monitoring must not be used as a new form of digital incarceration. It should be limited to cases where ordinary reporting, community supervision, or restitution alone is insufficient. Its duration, geographical scope, reporting obligations, and privacy limits must be clearly determined in the judgment. The European Union's AI Act is useful as a comparative reference because it treats AI governance through a risk-based framework intended to foster trustworthy AI, while NIST's AI Risk Management Framework emphasizes governance, mapping, measurement, and management of AI risks to individuals, organizations, and society. In Indonesia, these principles should be adapted into criminal justice safeguards: proportionality, legality, necessity, transparency, human oversight, and independent audit.

Neither an AI-governance framework nor the general availability of supervision establishes an independent power to impose electronic monitoring. Its use remains conditional on a specific lawful basis, a finding of necessity, and controls governing duration, data access, costs, and review. Conventional

electronic monitoring is also not automatically an AI system; the applicable technological risks depend on the functions actually deployed.

The fifth pillar is community-based supervision. The National Criminal Code already regulates supervision punishment through Article 76. This article requires a general condition that the convicted person must not commit another crime and allows special conditions, including compensation for harm caused by the offence or obligations to do or not do something, without reducing freedom of religion, belief, or political freedom. It also allows adjustment when the offender violates or complies with supervision conditions, involving prosecutors, correctional/community guidance officers, and judges. This provision is highly compatible with algorithmic decarceration because it creates a legal basis for differentiated supervision. A low-risk offender may only need periodic reporting and restitution monitoring; a medium-risk offender may need counselling, employment support, and closer supervision; an offender with substance dependency may need rehabilitation and compliance monitoring. The algorithmic tool should support this differentiation, not intensify control for its own sake.

The sixth pillar is community service as restorative accountability. Article 85 provides an important basis for community service as an alternative to short imprisonment and light fines. The elucidation explains that community service may be carried out in hospitals, orphanages, elderly homes, schools, or other social institutions, preferably adjusted to the offender's profession, and that the defendant's consent and social history are relevant considerations. This is important because algorithmic decarceration should not only reduce prison numbers; it should also transform punishment into socially meaningful accountability. For example, an offender who commits a minor property offence may be directed toward restitution and community service connected to local social benefit. A negligent offender may be required to participate in safety education and public service. A first-time offender may be placed under supervision combined with counselling and structured community work. The sanction remains punitive, but it is no longer purely exclusionary.

The seventh pillar is rehabilitative integration. Article 103 of the National Criminal Code recognizes measures such as counselling, rehabilitation, job training, institutional care, and restoration of harm, while Article 104 requires judges to observe the sentencing objectives and sentencing guidelines when imposing measures. The elucidation further describes counselling as assistance to overcome problems and change behavior positively and constructively, rehabilitation as integrated physical, mental, and social recovery, and job training as preparation to return to society and enter the labour market. This framework allows algorithmic decarceration to move beyond risk control toward needs-based rehabilitation. The algorithmic system should help identify whether an

offender needs addiction treatment, psychological counselling, vocational training, family-based support, or victim-offender restorative programming.

The eighth pillar is *maqāṣid-based safeguards*. The proposed model must be governed by *Maqāṣid al-Sharī'ah* so that technology does not turn sentencing into a mechanical process. *Ḥifẓ al-nafs* requires that non-custodial measures protect life and safety without exposing victims or communities to unreasonable danger. *Ḥifẓ al-'aql* requires that sentencing preserve the offender's moral and rational capacity through education, counselling, rehabilitation, and constructive guidance. *Ḥifẓ al-māl* requires that punishment avoid disproportionate economic destruction and consider the offender's ability to work, support family, and compensate victims. *Ḥifẓ al-'irḍ* and *karāmah insāniyyah* require protection of dignity, privacy, and reputation, especially when digital monitoring is used. *Maṣlaḥah* requires that the model produce public benefit, not merely administrative efficiency. *Iṣlāḥ* requires that sentencing be directed toward repair, reform, and restoration. *Ta'zīr* provides the doctrinal flexibility for the state to design modern sanctions, but this flexibility must remain bound by justice, proportionality, and non-excessiveness.

Maqāṣid controls operate across the model: legality and proportionality at eligibility screening; dignity and privacy at data collection; equality and harm prevention at validation; contestability at the hearing; maṣlaḥah at sanction selection; and rehabilitation, safety, and economic protection during implementation. Review determines whether these objectives continue to be met as circumstances change. Thus the safeguards pillar coordinates requirements that apply to every stage rather than postponing ethical scrutiny until the technological recommendation is complete.

The ninth pillar is algorithmic accountability. A future Indonesian model should require that any risk assessment or sentencing-support system be publicly regulated, independently audited, and legally challengeable. The system should disclose what data categories are used, what variables are prohibited, how bias is tested, how often the model is reviewed, who is responsible for errors, and how defendants may challenge inaccurate information. Sensitive variables such as religion, ethnicity, political belief, disability, or socio-economic proxies must be strictly limited or excluded unless their use is demonstrably protective and non-discriminatory. The Tokyo Rules, as the United Nations Standard Minimum Rules for Non-custodial Measures, emphasize both the promotion of non-custodial measures and minimum safeguards, while UNODC frames alternatives to imprisonment as tools to reduce prison overcrowding and support sustainable non-custodial measures.[63] This international standard supports the argument

[63] Eva Nudd et al., "Overcrowding in Prisons: Health and Legal Implications," *Torture Journal* 34, no. 3 (December 27, 2024): 41–53, https://doi.org/10.7146/torture.v34i3.147571.

that decarceration must be accompanied by safeguards, not simply by administrative diversion from prison.

Responsibilities should be allocated explicitly. Providers document design, limitations, and version changes; deploying institutions maintain lawful-use checks and decision logs; independent auditors examine performance and unequal errors; and courts determine the legal relevance of individual outputs. Serious incidents require investigation, correction, and where necessary suspension. Accessible complaints and data-correction procedures are needed for affected persons. Procurement arrangements should not permit commercial confidentiality to defeat meaningful challenge.

The tenth pillar is a structured judicial workflow. Table 2 specifies the actors, legal status, information requirements, outputs, maqāṣid controls, and correction mechanisms. Existing statutory sentencing requirements must be distinguished from additional technological procedures proposed here. At each stage, responsibility remains with an identifiable institution, and the output is subject to the lawful review powers applicable to that decision.

Table 2. Proposed sentencing workflow and controls

Stage and actor	Legal basis or status	Input and output	Maqāṣid control	Correction
Eligibility - judge	Applicable sanction provisions, including Arts. 70–71, 75–76, and 85	Offence and case facts → available options	Legality and proportionality	Exclude unavailable sanctions
Social inquiry - authorized officer	Applicable institutional authority; added arrangements where needed	Verified circumstances → social report	Dignity and rehabilitation	Correct disputed information
Assessment - authorized operator	Proposed regulated procedure	Permitted data → non-binding assessment	Equality and harm prevention	Reject unreliable scores
Hearing - court and parties	Applicable procedural rights; proposed detailed safeguards	Disclosure and objections → corrected record	Contestability	Reassessment or non-reliance
Decision - judge	Arts. 51–54 and the provision governing the sanction	Evidence and submissions → reasoned sentence	Maṣlaḥah and proportionality	Applicable judicial review

Stage and actor	Legal basis or status	Input and output	Maqāṣid control	Correction
Implementation - authorized institution	Lawful sentence and implementing rules	Conditions and support plan → supervision record	Safety, dignity, rehabilitation	Investigate failures and seek lawful adjustment
Review - competent authority	Existing review powers or proposed additional arrangements	Compliance and effects → continued or revised measure	Prevent continuing disproportionate harm	Modify or terminate lawfully

Source: Author's proposed synthesis of the cited Criminal Code provisions and the assessment-governance and maqāṣid literature. Additional technological procedures are prospective recommendations, not a description of current practice.

This workflow is important because algorithmic decarceration must be embedded in due process. A technological recommendation that cannot be challenged violates the spirit of fair trial. A risk score that cannot be explained weakens judicial accountability. A monitoring order without periodic review risks becoming excessive. A non-custodial sentence without rehabilitation support becomes fragile. Therefore, the model must integrate legal procedure, correctional capacity, digital governance, and Islamic ethical safeguards. The future of sentencing reform is not merely about replacing prison with technology; it is about creating a legally reasoned ecosystem in which technology helps the court impose the least restrictive, most proportionate, and most restorative sanction.

Any Indonesian pilot is proposed prospectively, subject to prior legal and institutional assessment. Inclusion should depend on statutory eligibility for the particular sanction, adequate community support, and victim protection rather than broad labels such as first-time offender or minor offence. Rehabilitation in drug-related cases and measures affecting family relationships require their own legal and safety assessment. An initial non-binding evaluation should compare algorithm-assisted recommendations with ordinary professional assessments without allowing experimental scores to increase restrictions. Indicators should include actual custodial sentences avoided, additional supervision imposed, compliance, victim-safety incidents, subgroup errors, costs, and access to remedies. A baseline comparison and follow-up evaluation should distinguish substitution of custody from net-widening. Serious uncorrected discrimination or safety failures should trigger suspension; expansion requires independent evaluation.

Institutionally, algorithmic decarceration requires cooperation between courts, prosecutors, correctional/community guidance officers, social workers, rehabilitation institutions, victim support services, local governments, and independent technology auditors. The judiciary should not purchase or adopt

opaque proprietary tools without legal standards. Prosecutors should be required to justify custodial demands in cases eligible for non-custodial sentencing. Defence counsel should be given access to assessment data. Victims should be heard regarding safety, restitution, and restoration. Correctional officers should be trained not only in surveillance, but also in counselling, reintegration, and social support. Independent auditors should periodically test the system for bias, accuracy, and human rights compliance.

The model's contribution lies in connecting statutory eligibility, contestable assessment, operational maqāṣid indicators, and correction mechanisms within one conditional workflow. The cited accuracy and accountability studies illuminate assessment limitations; maqāṣid reform scholarship supplies substantive evaluative principles; and non-custodial sentencing research addresses sanction design. The proposed workflow connects these concerns to stage-specific responsibilities and grounds for rejecting technological reliance. This is a bounded contribution within the literature reviewed, not a claim that combining familiar concepts is sufficient to establish novelty. Its institutional feasibility and effects on imprisonment, discrimination, and rehabilitation remain matters for empirical investigation.

Conclusion

This article concludes that algorithmic decarceration is normatively defensible as a conditional model of sentencing assistance. The National Criminal Code provides purposes of punishment, individualized judicial considerations, and alternative sanctions subject to their respective statutory requirements. These provisions support examination of proportionate non-custodial responses but do not independently authorize algorithmic assessment or electronic monitoring. The proposed model therefore separates lawful eligibility from technological assessment and retains independent judicial responsibility. Predictions should neither establish guilt nor provide a standalone basis for increasing punishment. Disclosure, local validation, meaningful challenge, reasoned decisions, and correction procedures are essential conditions of the proposal. Maqāṣid al-Sharī'ah contributes controls concerning safety, rehabilitation, economic burdens, dignity, and prevention of disproportionate harm throughout the workflow. The framework also requires comparison with less restrictive alternatives and examination of whether supervision actually replaces custody or expands penal control. Its contribution is a normative connection between statutory authority, procedural safeguards, and operational maqāṣid indicators. The study does not demonstrate predictive accuracy, institutional feasibility, or a causal reduction in imprisonment. These limitations require subsequent empirical evaluation before implementation or expansion. Technology-assisted sentencing should therefore proceed only where its legal

basis is identifiable, its outputs are contestable, and its consequences justify its use.

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