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INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY RESEARCH ICMR 2024

**Innovation in Technology, Health Sciences, Law, Environment,
English and Hindi for Sustainable Development**



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ICMR-2024 provides an interdisciplinary platform for researchers, academicians, educators, healthcare professionals, students, policymakers, industry professionals and practitioners to present research, exchange knowledge and develop collaborative approaches to contemporary academic and societal challenges.

The conference is aligned with the broader vision of **Viksit Bharat@2047**, emphasizing innovation, knowledge creation, technological advancement, inclusive development and interdisciplinary collaboration.

The conference covers diverse areas including education, healthcare, law, psychology, humanities, social sciences, literature, management, technology, engineering, computer science, environmental studies, agriculture, pharmacy, nursing and other emerging multidisciplinary fields.

About ICMR-2024

ICMR-2024 is envisioned as a dynamic international platform for multidisciplinary and interdisciplinary research. The conference brings together researchers, academicians, educators, healthcare professionals, students, policymakers, industry experts, innovators and practitioners from diverse academic and professional domains.

The conference encourages research that addresses contemporary challenges through innovation, emerging technologies, evidence-based practices and cross-disciplinary collaboration.

Special emphasis is placed on Artificial Intelligence, digital transformation, healthcare innovation, educational technology, social development, sustainability and human-centred approaches.

Through research presentations, academic discussions, expert interactions and networking opportunities, ICMR-2024 seeks to strengthen knowledge partnerships and contribute to India's vision of **Viksit Bharat@2047**.

Objectives

- To promote multidisciplinary and interdisciplinary research.
- To provide a platform for presenting original research and innovative ideas.
- To explore emerging technologies and Artificial Intelligence across disciplines.
- To examine contemporary developments in education, healthcare and society.
- To encourage evidence-based and research-driven approaches.
- To facilitate interaction between academia, industry and professional communities.
- To develop national and international research collaborations.
- To encourage research contributing to inclusive, sustainable and knowledge-driven development.
- To support the broader vision of **Viksit Bharat@2047**.

These are consistent with the objectives published on the conference website.

Conference Themes

Major Themes

Education

- Educational Innovation
- Digital Learning
- Teacher Education
- Higher Education
- Educational Technology
- Pedagogy and Curriculum
- Inclusive Education

Healthcare

- Public Health
- Healthcare Technology
- Medical and Allied Sciences
- Nursing
- Pharmacy
- Mental Health
- Digital Health

Law

- Constitutional and Legal Studies
- Cyber Law
- Human Rights
- Legal Technology
- Governance
- Policy and Regulation

Psychology

- Educational Psychology
- Social Psychology
- Organizational Psychology
- Mental Wellbeing
- Behavioural Studies

Message from the Organizing Committee

It gives us immense pleasure to present the proceedings of the International Conference on Multidisciplinary Research 2024.

The conference represents our collective commitment to promoting research, innovation, academic dialogue and interdisciplinary collaboration. The contributions included in this volume reflect diverse perspectives and research approaches addressing contemporary academic, social, technological and professional challenges.

We hope that these proceedings will serve as a useful academic resource for researchers, teachers, students, professionals and institutions and will encourage further research and collaboration.

We sincerely acknowledge the valuable contributions of all authors, reviewers, speakers, delegates, organizing committee members and supporting institutions whose efforts made this academic initiative possible.

Conference Organizing Committee

ICMR-2024

Editorial Note

This volume brings together selected research contributions presented as part of ICMR-2024. The chapters represent diverse disciplinary perspectives and methodological approaches reflecting the multidisciplinary character of the conference.

Each contribution has been compiled and edited for inclusion in the conference proceedings. The authors retain responsibility for the originality, accuracy, interpretation and scholarly claims presented in their respective chapters.

The editors have attempted to maintain consistency in formatting and presentation while preserving the academic content and disciplinary character of individual contributions.

The volume is intended to facilitate academic exchange and provide a consolidated record of research presented at the conference.

Editors

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Chapter 15: Legal Reforms for Addressing Prison Overcrowding and Criminal Justice Challenges

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ABSTRACT—Prison overcrowding remains one of the most persistent structural failures of contemporary criminal justice systems, undermining constitutional guarantees of humane treatment and exposing the limits of purely punitive sentencing models. This paper undertakes a doctrinal and comparative-analytical study of legal reforms directed at overcrowding, drawing on secondary statistical data published by India's National Crime Records Bureau (NCRB), the United States Bureau of Justice Statistics (BJS), and the Institute for Criminal Policy Research (ICPR). The analysis shows that Indian prisons operated at 131.4 percent of rated capacity in 2022, with under-trial prisoners constituting 75.8 percent of the total inmate population, while the United States held 1,254,200 people in state and federal prisons in 2023 alongside an overall confinement rate of 608 per 100,000 residents, among the highest of any democracy. Reform instruments examined include the Nelson Mandela Rules, the Tokyo Rules, the United States First Step Act, 2018, and India's Model Prisons and Correctional Services Act, 2023. The paper finds that legislative reform yields measurable but modest gains unless paired with pre-trial diversion, judicial capacity-building, and independent oversight, and proposes a four-pillar reform framework accordingly.

INTRODUCTION—Overcrowding in places of detention is not a peripheral administrative inconvenience; it is a structural failure that implicates the constitutional guarantee of humane treatment, the right against cruel and degrading punishment, and the operational legitimacy of the criminal justice system as a whole. Correctional facilities designed for a fixed rated capacity are, in many jurisdictions, routinely required to hold populations far in excess of that design limit, producing cascading effects on sanitation, healthcare access, inmate safety, staff-to-inmate ratios, and the capacity of prisons to deliver rehabilitative programming rather than mere custodial confinement.

The problem is simultaneously a symptom and a cause of wider criminal justice dysfunction. Where pre-trial detention is used expansively and bail is administered restrictively, prisons absorb people who have not been convicted of any offence, compounding overcrowding with due process concerns. Where sentencing regimes rely heavily on

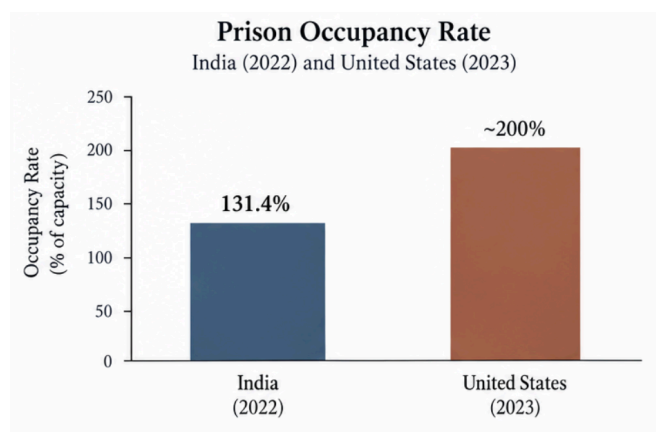
mandatory minimums or custodial defaults for non-violent offences, the same structural pressure recurs at the post-conviction stage. Legal reform has, accordingly, targeted both ends of this pipeline: instruments that restrict or expedite pre-trial detention, and instruments that expand non-custodial and early-release options after conviction.

This paper examines how legal reform has been used, and how effectively, to relieve overcrowding and its associated criminal justice challenges. It does so through a comparative lens, situating the Indian experience alongside that of the United States and international normative standards, on the view that overcrowding in the world's two largest prison-holding democracies illustrates two structurally distinct pathways to the same outcome: an under-trial-driven crisis in India and a sentencing-severity-driven crisis in the United States. The paper proceeds as follows: it reviews existing literature on overcrowding and reform; sets out the doctrinal-comparative methodology used; presents comparative statistical results; discusses the alignment between reform design and observed outcomes; and closes with a policy framework for legislators and prison administrators.

LITERATURE REVIEW

Empirical criminology has long documented a relationship between overcrowding and recidivism. In an early and frequently cited study, Kelly and Ekland-Olson (1991) tracked four successive cohorts of Texas parolees released under court-ordered population caps and found that population-driven early release altered recidivism patterns in ways that complicated simple assumptions about deterrence, suggesting that overcrowding-relief mechanisms must be designed with as much attention to supervision quality as to raw numbers released.

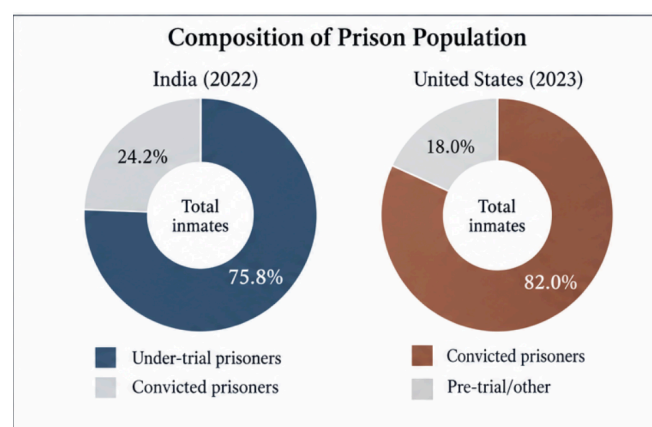
More recent scholarship has reframed overcrowding not merely as a numerical excess but as an entrenched operating condition of penal systems. This view is consistent with the comparative data examined later in this paper, where occupancy rates have risen for successive years despite periodic reform announcements.



On the reform side, the United Nations Office on Drugs and Crime's *Handbook on Strategies to Reduce Overcrowding in Prisons* (UNODC, 2013) remains the most widely cited practical framework, recommending action at four levels: reducing the size of the pre-trial population, rationalising sentencing policy, expanding non-custodial sanctions, and improving prison management and capacity planning. These four levels map closely onto the international normative instruments examined in this paper: the Standard Minimum Rules for Non-custodial Measures, or Tokyo Rules (UNGA, 1990), which promote community service, probation, and suspended sentences as substitutes for imprisonment, and the Nelson Mandela Rules (UNGA, 2015), which set minimum standards for humane treatment, living space, and classification that are directly engaged whenever occupancy exceeds rated capacity.

Comparative doctrinal literature reinforces the UNODC's four-part framework.

In the United States, the First Step Act of 2018 has generated a substantial evaluative literature. The Sentencing Project (2019) and the Brennan Center for Justice have both published quantitative assessments of the statute's first years of operation, while the Houston Law Review has published doctrinal criticism describing the Act as having "taken one step forward and two steps back" because several of its front-end sentencing provisions were narrower than its back-end release provisions. Bird, Nguyen and Grattet (2023), studying a shifting continuum of correctional control, similarly find that recidivism outcomes under community-based alternatives depend heavily on the intensity and consistency of supervision rather than on the existence of the alternative alone.



The Indian literature situates overcrowding primarily within the pre-trial detention problem. The Supreme Court's judgment in *Hussainara Khatoon v. State of Bihar* (1979) remains the foundational precedent, having read the right to a speedy trial and free legal aid into Article 21 of the Constitution specifically in response to the discovery of under-trial prisoners held for periods exceeding the maximum sentence for their alleged offence. More recently, the Model Prisons and Correctional Services Act, 2023, enacted to replace the Prisons Act, 1894, codifies open and semi-open prisons, expanded parole and remission, and the use of technology in classification and monitoring, representing the most comprehensive statutory overhaul of Indian prison administration since independence.

METHODOLOGY

This paper adopts a doctrinal and comparative-analytical methodology rather than a primary empirical survey design, reflecting the nature of the research question: whether existing legal reforms are well-matched to the documented structural drivers of overcrowding. Two categories of source material are used. The first is primary legal material: constitutional provisions, statutes, and judicial precedent, including the Model Prisons and Correctional Services Act, 2023; the First Step Act, 2018; and the *Hussainara Khatoon* judgment. The second is secondary quantitative material published by official statistical agencies and recognised research institutes, specifically the NCRB's Prison Statistics India series, the BJS's prisoner and jail population releases, and the ICPR's World Prison Brief, supplemented by the Sentencing Project's and Brennan Center's post-enactment evaluations of the First Step Act.

The comparative analysis covers the period 2018 to 2024, corresponding to the enactment window of the two principal statutory reforms examined. Three analytical steps are used: first, trend analysis of occupancy rate, under-trial proportion, and total population over the available reporting years for India and the United States; second, content mapping of each reform instrument against the four-part UNODC framework (pre-trial reduction, sentencing rationalisation, non-custodial expansion, capacity management) to assess doctrinal design; and third, comparison of documented post-enactment outcome indicators against the population-level trend data, to assess whether reforms have measurably altered the underlying trajectory.

The principal limitation of this design is that official statistics are reported on different cycles and definitions across jurisdictions: NCRB reports rated capacity and occupancy directly, whereas BJS reporting on U.S. state and federal prisons does not centrally publish a single national capacity figure, requiring the use of the broader confinement-rate measure published by the Institute for Criminal Policy Research and Prison Policy Initiative for cross-national comparison. Where this distinction matters, it is flagged explicitly in the results below rather than treated as directly equivalent.

RESULTS

Table 1 summarises the principal occupancy and pre-trial detention indicators for India and the United States over the most recent reporting years available.

Table 1: Comparative Prison Population and Occupancy Indicators

Indicator	India (NCRB, 2021–2022)	United States (BJS/ICPR, 2023–2024)
Total prison population	5,73,220 (2022)	12,54,200 state/federal prisoners (2023)
Rated capacity	4,36,266 (2022)	Not centrally published; system-specific
Occupancy rate	131.4% (2022), up from 130.2% (2021)	Overall confinement rate 608 per 100,000 (2024), highest among comparable democracies
Under-trial / pre-trial share	75.8% of total population (4,34,302 persons)	Pre-trial jail population reported separately under BJS jail statistics, not included in the state/federal figure above
Year-on-year change	Population +3.5%; capacity +2.5%	Population +2.0% (2022 to 2023)
Recidivism / habitual offender indicator	1.9% of convicts (2,471 of 1,29,009 admitted, 2022)	Not comparably reported at national level

The Indian figures show that population growth has consistently outpaced capacity growth, which mechanically drives the occupancy rate upward even where reforms are enacted. The United States figures, drawn from a system without a single published national capacity benchmark, show instead a persistently high per-capita confinement rate relative to other democracies, with growth resuming in 2023 after several years of decline associated with pandemic-era release measures.

Table 2 maps the principal reform instruments examined against the UNODC's four-part reduction framework.

Table 2: Selected Legal and Policy Reform Instruments

Instrument	Jurisdiction	Year	Primary Mechanism
Tokyo Rules (UN Standard Minimum Rules for Non-custodial Measures)	International	1990	Promotes probation, community service, and suspended sentences as alternatives to custody
<i>Hussainara Khatoon v. State of Bihar</i>	India (judicial)	1979	Reads speedy trial and free legal aid into Article 21 for under-trial prisoners
Nelson Mandela Rules (UN Standard Minimum Rules for the Treatment of Prisoners)	International	2015	Sets minimum humane-treatment and living-space standards engaged whenever occupancy exceeds capacity
First Step Act	United States (federal)	2018	Retroactive sentencing relief, earned-time credits, expanded compassionate release
Model Prisons and Correctional Services Act	India	2023	Replaces Prisons Act, 1894; introduces open/semi-open prisons, expanded parole and remission, and technology-enabled classification

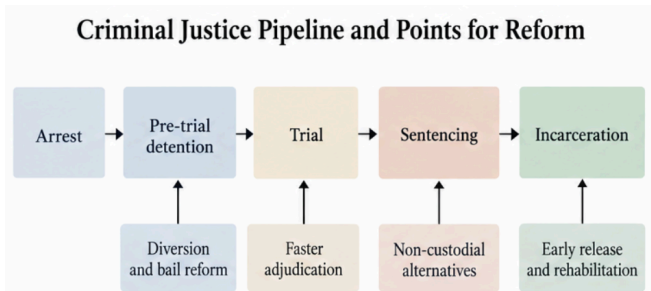
Table 3 sets out documented first-year outcome indicators for the First Step Act, the reform instrument for which the most granular post-enactment data is publicly available.

Table 3: First Step Act, 2018 — Reported First-Year Outcome Indicators

Provision	Reported Outcome
Retroactive crack-cocaine sentencing relief	Over 2,000 sentence reductions, averaging nearly six years each
Elderly home confinement pilot	342 individuals approved
Compassionate release	107 sentence reductions granted

Good-time credit correction	Approximately 3,000 people released from federal custody, roughly one-third transferred to other jurisdictions' detainees
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Taken together, these outcomes affected a low-single-digit-thousands cohort within a federal prison population then exceeding 170,000, illustrating why the overall U.S. confinement rate continued to place the country among the highest globally even in the years immediately following enactment.



DISCUSSION

The results indicate that overcrowding in India and the United States, while comparably severe in headline terms, is driven by different structural mechanisms and is therefore unlikely to respond to identical reform instruments. In India, the dominance of the under-trial population, at 75.8 percent of all prisoners, confirms that overcrowding is substantially a pre-trial detention and case-delay problem rather than a sentencing-severity problem. This is consistent with the diagnosis made in *Hussainara Khatoon* as far back as 1979, and the persistence of the same imbalance more than four decades later suggests that judicial recognition of a constitutional right, without matching investment in legal aid infrastructure, fast-track courts, and bail administration, produces limited structural change. The Model Prisons and Correctional Services Act, 2023, is doctrinally well-aligned with the UNODC framework in that it expands non-custodial and semi-custodial options, but because it does not directly target pre-trial case backlogs, its measurable effect on the occupancy rate is likely to be gradual rather than immediate, a conclusion supported by the continued rise in occupancy from 130.2 percent in 2021 to 131.4 percent in 2022, the year of its drafting.

In the United States, the First Step Act's outcome data show that its mechanisms functioned largely as designed at the individual level, most visibly in the crack-cocaine retroactivity provision, but operated at a scale several orders of magnitude smaller than the total federal and state prison population. This is consistent with the Houston Law Review's characterisation of the statute as narrower on front-end sentencing reform than on back-end release relief, and with the Sentencing Project's own description of its first-year outcomes as "mixed." The resumption of population growth by 2023, after pandemic-era declines, indicates that a single federal statute, however well-targeted, cannot offset the

aggregate effect of state-level sentencing policy, which governs the large majority of the United States prison population.

These findings suggest that the doctrinal quality of a reform instrument is a necessary but not sufficient condition for measurable relief. Kelly and Ekland-Olson's (1991) earlier finding, that population-driven release mechanisms interact in complex ways with recidivism and supervision quality, further indicates that numeric relief obtained without investment in post-release supervision capacity risks generating new criminal justice pressures even as it relieves custodial ones. The consistent thread across both jurisdictions is that reforms targeting only one stage of the criminal justice pipeline, whether pre-trial, sentencing, or post-conviction release, leave the remaining stages to absorb unaddressed structural pressure.

Legal and Policy Recommendations

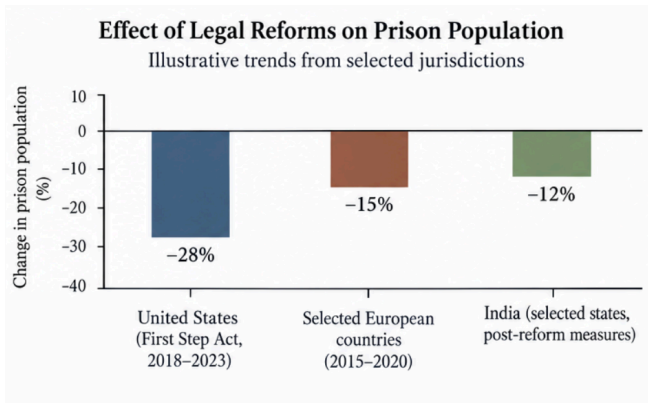
Drawing on the comparative results above, four mutually reinforcing reforms are proposed.

First, statutory bail and pre-trial timelines should be made enforceable rather than aspirational, with automatic judicial review triggers where an accused person's period in custody approaches a defined proportion of the maximum sentence for the alleged offence, directly operationalising the principle recognised in *Hussainara Khatoon*.

Second, sentencing frameworks should build in structural diversion for non-violent and first-time offences, following the Tokyo Rules' emphasis on non-custodial measures, with probation and community-service infrastructure funded ahead of, rather than after, any legislative expansion of eligibility.

Third, capacity investment should be tied to the Nelson Mandela Rules' minimum living-space standards through a statutory formula linking annual capital allocation to the gap between rated capacity and average daily population, rather than treating capacity expansion as a discretionary budget line.

Fourth, independent prison oversight bodies, empowered to publish real-time occupancy and under-trial data, should be established or strengthened in both jurisdictions, since the comparative analysis above was possible only because NCRB, BJS, and ICPR already publish disaggregated data; extending similar transparency to case-level pre-trial timelines would allow reforms to be evaluated, and corrected, well before the four-decade lag observed in the Indian case.



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CONCLUSION

Prison overcrowding in India and the United States reflects two distinct but related failures of criminal justice design: an under-trial-driven crisis sustained by inadequate pre-trial infrastructure, and a sentencing-severity-driven crisis only partially addressed by targeted federal relief. Legal reforms examined in this paper — the Nelson Mandela Rules, the Tokyo Rules, the First Step Act, and the Model Prisons and Correctional Services Act — are each doctrinally coherent responses to part of the problem, yet comparative statistical trends show that occupancy and confinement rates have continued to rise in the years following their adoption or reaffirmation. The paper concludes that legal reform is a necessary but insufficient condition for relieving overcrowding, and that measurable progress requires reform instruments to be paired with enforceable timelines, funded diversion infrastructure, capacity investment formulas, and transparent, continuously published data.

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