

Cryptocurrency-Fueled Narcotics Networks: A Socio-Legal Analysis Of Regulatory Gaps In India'S Ndns Act Amid Emerging Digital Trafficking Paradigms (2018–2025)

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Received: 20th Feb, 2026; Revised: 4th Mar, 2026; Accepted: 25th Mar, 2026; Available Online: 10th Apr, 2026

Abstract

The proliferation of cryptocurrency-enabled narcotics trafficking through dark web platforms has transformed traditional drug supply chains in India, exposing critical regulatory voids in the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985. This socio-legal study examines the period 2018–2025, integrating doctrinal analysis of NDPS provisions (particularly sections 8, 27a, and 37) with empirical data from official sources such as the Narcotics Control Bureau (NCB) and Enforcement Directorate (ED). Key findings reveal a surge in darknet-crypto cases—from 3 in 2020 to 92 by April 2024—with operations like NCB's "Operation Ketamelon" (2025) seizing LSD blots, ketamine, and cryptocurrency worth ₹70 lakhs, alongside "Team Kalki" (2026) involving over 1,000 consignments. While NDPS amendments (2014/2018) and PMLA linkages have strengthened asset forfeiture, gaps persist in tracing anonymous transactions, jurisdictional challenges, and bail thresholds amid technological anonymity. Drawing on latest case laws (e.g., Madras High Court's 2025 recognition of cryptocurrency as "property" and Delhi/Bombay High Court rulings on network nexus in bail denials), the paper highlights socio-legal tensions between enforcement efficacy and privacy/human rights. Recommendations include NDPS-specific crypto-tracking amendments, enhanced inter-agency digital forensics, and FATF-aligned international cooperation to bridge these paradigms. This analysis contributes to scopus-indexed discourse on digital crime and drug policy in emerging economies.

Keywords: Crypto, Narcotics, Digital, Trafficking.

How To Cite This Article: Kaur N, Kaur M, Kaur G, Sabia. Cryptocurrency-Fueled Narcotics Networks: A Socio-Legal Analysis Of Regulatory Gaps In India'S Ndns Act Amid Emerging Digital Trafficking Paradigms (2018–2025). *Int J Drug Deliv Technol.* 2026;16(26s):749-754. Doi: 10.25258/ijddt.16.26s.79

1. Introduction

India's narcotics landscape has undergone a seismic shift since 2018, driven by the convergence of dark web marketplaces, Tor anonymity, and cryptocurrency payments. Once reliant on physical borders and couriers, trafficking now leverages decentralized ledgers for untraceable financing and global reach. The NDPS Act, enacted in 1985 and amended in 2014 and 2018 to address small quantities and financing, remains the cornerstone of India's prohibitionist framework. However, it predates the explosive growth of virtual digital assets (VDAs).¹

Official data underscore the urgency: NCB's 2025 year-end report records seizures of 1,33,965 kg of narcotics worth ₹1,980 crore, with explicit mentions of darknet syndicates in operations like Ketamelon and Med Max, where cryptocurrency facilitated cross-continental pharmaceutical trafficking. NCRB statistics show NDPS cases rising from 63,137 in 2018 to 115,236 in 2022, with darknet-crypto involvement escalating sharply post-2020 (3 cases in 2020; 49 in 2021; cumulative 92 by April 2024). The ED's parallel PMLA probes, achieving a 94.82% conviction rate by end-2025, increasingly target crypto proceeds linked to NDPS predicate offences.

This paper adopts a socio-legal lens to interrogate regulatory gaps. Doctrinally, it scrutinizes NDPS's silence on digital financing tools; empirically, it analyses NCB/ED datasets and recent operations;

¹J. Aldridge and D. Décary-Héту, 'Not an "Ebay for Drugs": the Cryptomarket "Silk Road" as a Paradigm Shifting Criminal Innovation' (2014) *SSRN Electronic Journal*, available at ssrn.com (last visited Apr. 13, 2026).

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jurisprudentially, it reviews 2025 High Court rulings on bail in network cases and Madras HC's crypto-as-property precedent. The 2018–2025 timeframe captures post-amendment enforcement, COVID-accelerated digital migration, and India's 2022–2025 crypto taxation/PMLA notifications. By highlighting enforcement successes alongside persistent lacunae (e.g., tracing Monero-style privacy coins or cross-border wallet attribution), the study argues for targeted NDPS reforms to align with FATF standards and UNODC digital trafficking guidelines.

The socio-legal implications extend beyond law: rising synthetic drug use in urban India, youth vulnerability via encrypted apps, and tensions between stringent bail conditions (Section 37) and Article 21 rights. This interdisciplinary analysis fills a Scopus gap by linking criminology, technology, and Indian public law.

2. Literature Review

Existing scholarship on dark web narcotics is predominantly global or Western-centric, focusing on Europol takedowns or Silk Road legacies (e.g., UNODC World Drug Reports 2023–2025). Indian literature remains nascent: policy briefs from NCB/NCRB note the 500% ATS seizure surge (2020–2024), attributing it partly to Myanmar-sourced synthetics routed via digital channels. Academic works (e.g., IJCRT/IJRPR papers 2025) describe crypto's role in evading NDPS but lack deep doctrinal critique.

Comparative studies highlight India's lag: while the US/EU integrate blockchain analytics (e.g., Chainalysis), Indian agencies rely on reactive PMLA attachments. Recent ED annual reports (2024–25) document 775 new PMLA cases, many crypto-linked, yet NDPS-specific crypto prosecutions remain under-documented.^{09e956} Socio-legal voids—e.g., NDPS Section 27A's financing offence not explicitly covering wallet seeding or mixer services—are underexplored.²

Moritz Tzanetakis & Nick South (eds.), *Digital Transformations of Illicit Drug Markets: Reconfiguration and Continuity*³ discussing cryptomarket anonymization relevant to NDPS s. 27A financing gaps.

² Enforcement Directorate, *Annual Report 2024–25* (Department of Revenue, Ministry of Finance, 2025).

³ Moritz Tzanetakis & Nick South (eds.), *Digital Transformations of Illicit Drug Markets: Reconfiguration and Continuity* (Bristol University Press, Bristol, U.K., 2024).

Mangai Natarajan (ed.), *International and Transnational Crime and Justice*⁴ describes about the Cryptocurrencies and Money Laundering Opportunities and it's impact on darknet narcotics funding paralleling PMLA-NDPS linkages.

Bidyut Kumar Banerjee & Srinivasan Gopal, *Law Relating to NDPS*⁵ focuses on practical implementation by enforcement officers, drawing on over 750 judgments. Covers investigation, seizures, trials, and recent developments.

J. N. Barowalia, Abhishek Barowalia, *Commentary on The Narcotic Drugs and Psychotropic Substances Act*⁶ is a commentary on the Narcotic Drugs and Psychotropic Substances Act is the most comprehensive and reliable commentary on the subject. It provides a complete code on the subject by explaining each and every provision of the Act with pertinent comments and observations. Apart from dealing with the provisions of the Narcotic Drugs and Psychotropic Substances Act in an elaborate manner, the authors have not refrained from stating their views on various issues relating to principles of statutory interpretation, questions of constitutional law, provisions in related legislations, etc.

David T. Courtwright, *Dark Paradise: A History of Opiate Addiction in America*⁷ historical supply chains analogous to 2024 ATS surges. The book offers an original interpretation of a puzzling chapter in American social and medical history: the dramatic change in the pattern of opiate addiction—from respectable upper-class matrons to lower-class urban males, often with a criminal record. Challenging the prevailing view that the shift resulted from harsh new laws, Courtwright shows that the crucial role was played by the medical rather than the legal profession.

⁴ Mangai Natarajan (ed.), *International and Transnational Crime and Justice* (Cambridge University Press, Cambridge, U.K., 2019).

⁵ Bidyut Kumar Banerjee & Srinivasan Gopal, *Law Relating to NDPS* (Taxmann Publications pvt. Ltd., New Delhi, 3rd edn., 2015).

⁶ J. N. Barowalia, Abhishek Barowalia, *Commentary on The Narcotic Drugs and Psychotropic Substances Act* (Eastern Book Company, Lucknow, 2nd edn., 2023).

⁷ David T. Courtwright, *Dark Paradise: A History of Opiate Addiction in America* (Harvard University Press, Cambridge, Massachusetts, U.S., 1982).

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Patrick Radden Keefe, *Empire of Pain: The Secret History of the Sackler Dynasty and the Opioid Crisis*⁸ covers pharma networks mirroring Operation Med Max crypto drop-shipping.

Silvia L. Cruz (ed.), *Opioids: Pharmacology, Abuse, and Addiction*⁹ provides information as to synthetic opioid dynamics for NCB seizure analysis.

TRM Labs, *The Blockchain Investigator's Flip Book: A Guide for Law Enforcement*¹⁰ deals with crypto tracing tools for Monero evasion in Indian probes.

This paper bridges these gaps by centring India's NDPS regime within 2018–2025 empirical trends, contrasting descriptive enforcement narratives with normative analysis of regulatory obsolescence.

3. Methodology

This study employs a socio-legal methodology: (i) doctrinal analysis of NDPS Act, PMLA 2002 (as amended), IT Act 2000, and allied rules (NDPS Seizure Rules 2022); (ii) empirical review of secondary quantitative data from NCB year-end releases (2025), NCRB Crime in India reports (2018–2022), ED annual reports (2024–25), and open government portals; and (iii) qualitative case study of landmark operations and judgments (2018–2025). Data triangulation ensures reliability; limitations include restricted access to classified blockchain traces. Ethical considerations prioritise public-domain official sources.

4. Emergence of Cryptocurrency-Fueled Narcotics Networks (2018–2025)

Post-2018 NDPS amendments, digital paradigms accelerated. NCB data reveal darknet-crypto cases rising exponentially: 92 total by April 2024, peaking amid pandemic-driven online migration. By 2025, 65% of high-grade transactions reportedly used encrypted platforms and crypto (NCB estimates).

Key operations illustrate:

Operation Ketamelon (2025): Busted India's largest darknet syndicate; seized 1,127 LSD blots, 131.66g ketamine, and ₹70 lakh crypto.

Operation Med Max (2025): Dismantled four-continent pharmaceutical network using crypto drop-shipping.

Team Kalki (2025–26): Pan-India darknet network; >1,000 consignments, LSD/MDMA/liquid MDMA seizures, crypto wallets recovered.

NCRB parcel/darknet datasets (2020–2024) corroborate courier-digital hybrid models. UNODC notes India's ATS seizures at 8.2 tons in 2024 (500% growth), often crypto-financed. Socio-economically, this fuels Punjab-Haryana-Delhi corridors while enabling youth access via Telegram/Signal.¹¹

National Data: NDPS Cases & Arrests (2018–2022)

The number of registered NDPS cases nearly doubled over the period, reflecting an intensifying narcotics challenge.¹²

Year	Cases Registered (Total)	Persons Arrested (Total)
2018	63,137	81,778
2019	72,721	95,093
2020	59,806	83,719
2021	78,331	107,808
2022	115,236	144,812

Darknet & Cryptocurrency Cases (2020–2024)

This table provides the year-by-year breakdown of the cumulative 92 cases¹³

Year	Cases Registered
2020	3
2021	49
2022	8

⁸ Patrick Radden Keefe, *Empire of Pain: The Secret History of the Sackler Dynasty and the Opioid Crisis* (Pan Macmillan, London, 2021).

⁹ Silvia L. Cruz (ed.), *Opioids: Pharmacology, Abuse, and Addiction* (Springer Cham, Switzerland, 2022).

¹⁰ TRM Labs, *The Blockchain Investigator's Flip Book: A Guide for Law Enforcement* (TRM Labs Press, 2024).

¹¹ United Nations Office on Drugs and Crime, *World Drug Report 2024* (United Nations Publication, 2024).

¹² National Crime Records Bureau, *Crime in India 2022*, Ministry of Home Affairs, at 5-10 (2023).

¹³ Ministry of Home Affairs, "Government launches new cyber crime portal", PIB ID No. PRID/2077954 (April 5, 2026), available at: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2077954> (last visited on April 1, 2026).

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Year	Cases Registered
2023	21
2024 (till April)	11
Total (2020–Apr 2024)	92

Drug Seizures Under the NDPS Act (2018–2022)

This data provides a more detailed picture of the drug seizures mentioned in your paper. It shows a significant shift in the types of drugs being seized, with a sharp rise in cannabis-based drugs by 2022.

Major Seizures by Drug Type (in kg)

Drug Category	2018	2019	2020	2021	2022
Opium Based Drugs	201,842.57	244,309.83	246,223.87	268,671.11	337,169.91
Cannabis Based Drugs	1,228,089.22	443,978.91	853,554.41	796,080.81	1,716,700.05
Cocaine	447.97	54.98	493.01	2,220.49	71.83
Psychotropic Substances	37,686.29	45,552.84	5,357.80	1,457.44	3,042.98

State-Level Snapshot: Kerala, Maharashtra & Punjab (2023)

Recent NCRB data (2023) highlights a concentration of NDPS cases in specific states. This regional detail would add depth to the paper's socio-legal analysis.¹⁴

- **Kerala:** 30,697 cases
- **Maharashtra:** 15,610 cases
- **Punjab:** 11,589 cases
- **Narcotics Control Bureau (NCB):** 66.8% conviction rate in 2025.

¹⁴ *Id.at.4*

• **Enforcement Directorate (ED):** 94.82% conviction rate in PMLA cases by end-2025 (as noted in your paper).

These figures highlight the significant disparity in successful prosecutions between standard narcotics offences and money laundering cases.¹⁵

5. Legal Framework and Regulatory Gaps in NDPS Act

NDPS Section 8 prohibits trade/possession; Section 27A penalizes financing (up to 20 years). Yet “financing” lacks explicit crypto definitions, unlike PMLA’s VDA inclusion (2022 notification). Section 37’s stringent bail (prima facie guilt + no release unless conditions met) clashes with digital evidence delays.¹⁶

PMLA synergies enable ED attachments (e.g., ₹2,385 crore crypto in OctaFX-linked probe), but predicate NDPS linkage is cumbersome. Madras HC (2025) in *Rhutumari v. Zanmai Labs Pvt. Ltd.*¹⁷ Labs classified crypto as “property” (not currency), aiding civil recovery but exposing NDPS gaps in forfeiture.

Gaps: (i) No mandatory blockchain reporting for NDPS-linked wallets; (ii) Anonymity tools (Monero) evade tracing; (iii) Jurisdictional voids in darknet servers abroad; (iv) Forensic capacity lags (despite NCB-NFSU MoU).

6. Latest Case Laws and Judicial Responses

2025 judgments signal evolving jurisprudence:

Praveen v. State (NCT of Delhi)¹⁸

Bail denied under Sections 21/29 NDPS despite no personal recovery. Court held that prima facie nexus with a narcotic network (via circumstantial/digital evidence) suffices; mere assertions or absence of direct recovery are insufficient in organized trafficking.

Relevance: Directly applicable to darknet syndicates (e.g., Team Kalki operators using Dread/Session app + crypto). Highlights Section 37 rigours in crypto-enabled networks.

Syed Sameer Hussain v. State of Maharashtra¹⁹

¹⁵ *Id.at.5*

¹⁶The Narcotic Drugs and Psychotropic Substances Act, 1985 (Act 61 of 1985), ss. 8, 27A &37; Ministry of Finance (Department of Revenue) Notification, S.O. 1072(E) (March 7, 2023) [Bringing Virtual Digital Assets under the Prevention of Money Laundering Act, 2002].

¹⁷ O.A. No. 194 of 2025, 2025 MHC 2437 (Mad) (Oct. 25, 2025).

¹⁸ 2025 SCC Online Del 2570.

¹⁹ 2025 SCC Online Bom 3360.

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Bail dismissed in a cocaine smuggling syndicate under Sections 21(c), 23(c), 27A, 29 NDPS. Court relied on circumstantial evidence including WhatsApp communications and money trails (potentially crypto-linked in similar cases); gravity of offence outweighed other factors.

*Aienaddin Gurgij v. Custom*²⁰

Delhi High Court Bail denied under Sections 21/ 23/ 29 NDPS (commercial quantity heroin). Court applied Section 37 twin conditions strictly, prolonged custody alone did not override statutory bar where prima facie guilt existed.

Rhutikumari v. Zanmai Labs Pvt. Ltd. & Ors.,²¹

Crypto as property precedent, indirectly bolstering NDPS/PMLA asset tracing. ED's high PMLA conviction rate (94.82%) in crypto-laundering cases (e.g., ₹641 crore cyber-fraud with Binance routing) underscores enforcement but reveals NDPS's evidentiary bottlenecks.

7. Socio-Legal Challenges

Enforcement successes (NCB conviction rate 66.8% in 2025) coexist with challenges: prolonged trials erode deterrence; privacy concerns (Article 21) arise from bulk surveillance; border states face hybrid threats. Human rights critiques highlight disproportionate impact on small users vs. kingpins.

8. Policy Recommendations

- Amend NDPS to define “digital financing” and mandate crypto reporting.
- Establish NDPS-specific blockchain analytics unit under MAC Darknet & Crypto Task Force.
- Harmonize NDPS-PMLA timelines for predicate offences.
- Capacity building via AI forensics and FATF/UNODC partnerships.
- Harm-reduction pilots alongside prohibition.

9. Conclusion

Cryptocurrency has turbocharged narcotics networks, outpacing NDPS's analog-era design. 2018–2025 data and cases demonstrate both resilience and regulatory lag. Urgent, technology-forward reforms are imperative for a drug-free India.

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