

# Artificial Intelligence and Digital Technologies as Tools for Effective Community Service Punishment under the Bharatiya Nyaya Sanhita, 2023: A Socio-Legal Study

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## Abstract:

In line with the trend towards restorative and reformative justice in India, the Bharatiya Nyaya Sanhita (BNS), 2023 has included Community Service Punishment as an alternate method of punishment for specific minor offences. But rigorous oversight, openness, and responsibility are necessary for this provision's efficient execution, and digital technology and Artificial Intelligence (AI) can greatly improve these areas. This socio-legal study looks at how the BNS, 2023's community service punishment could be improved with the use of digital platforms, data analytics, biometric systems, GPS-enabled monitoring, mobile apps, and AI-driven technologies. A doctrinal, empirical, descriptive, and analytical research strategy is utilised in the study. A total of 110 individuals were surveyed using a structured questionnaire; these included members of the judiciary, advocates, police, academics, legal researchers, probation officers, and law students. Secondary data was culled from statutes, court decisions, government reports, books, and academic literature. The results show that most people are in favour of using AI and other digital technologies to keep track of community service orders, ensure compliance, keep digital records, increase transparency, and make sure people are held accountable. Inadequate digital infrastructure, data privacy concerns, cybersecurity hazards, legal and ethical issues, and the requirement for qualified personnel are among the challenges identified in the report. Following the establishment of suitable legislative protections, technical infrastructure, and policy frameworks, it is determined that community service punishment can be greatly improved through the use of AI-enabled digital governance. To guarantee effective, open, and citizen-centered management of community service punishment under the Bharatiya Nyaya Sanhita, 2023, the study suggests creating a protected national digital platform, standardising implementation guidelines, conducting capacity-building programs, and putting strong data protection measures in place.

**Keywords:** Artificial Intelligence (AI), Digital Technologies, Community Service Punishment, Digital Governance, Justice Delivery System.

## I.INTRODUCTION

Emerging as game-changing tools, digital technology and artificial intelligence (AI) have the potential to update public administration and judicial administration. Transparency, real-time supervision, accurate documentation, and data-driven decision-making can be achieved through the use of technologies like AI-based monitoring systems, biometric attendance, GPS tracking, mobile applications, digital dashboards, cloud-based databases, and predictive analytics to improve the execution of community service punishment.

Additionally, these technologies may help streamline administrative tasks, boost compliance, and enhance cooperation among probation departments, courts, police departments, and community groups.<sup>1</sup>

The Indian Penal Code (IPC), which had controlled criminal law in India since 1860, has been superseded by the Bharatiya Nyaya Sanhita (BNS). The new legislation is prepared to tackle new threats like cybercrimes and terrorism, and it is part of a larger effort to decolonise the criminal justice system in BNS. The BNS specifies five different forms of punishment: death, life in prison, incarceration (rigorous or simple), a fine, and community service. It is organised into nineteen chapters with three hundred and fifty-six clauses that address crimes, punishments, and general concepts of criminal law like mens rea, actus reus, causation, defences, etc. Unlike the IPC, which only addressed the maximum punishment, BNS introduces the concept of minimum and maximum sentence for every offence. It protects victims' interests by making restitution to them a legal requirement. Crimes against the state, public tranquillity, human body, property, public health, safety, morals, etc. are defined in a more expansive manner in the BNS, with a few alterations and additions. For example, the BNS makes it a crime to wage war against India and her allies, replacing the contentious sedition legislation with a new one. To meet the demands of modern society, the BNS updates and adds new crimes like cybercrime, terrorism, hate speech, sexual harassment in the workplace, acid assaults, etc., while updating and adding new offences like rape, murder, theft, etc. So, it's clear that the BNS has revised its penalties and procedures with an eye toward increasing transparency and facilitating swift redress. It now includes crimes that are pertinent to contemporary issues, such internet scams. Our legal system needs to evolve to reflect the social, political, and technological realities of modern India as the country rushes towards digitalisation.<sup>2</sup>

This socio-legal study looks at how far the Bharatiya Nyaya Sanhita, 2023's Community Service Punishment can go with the help of artificial intelligence and other digital technology. Adopting technology-enabled systems for effective monitoring and enforcement is examined in terms of the policy implications, stakeholders' perceptions, possible benefits, practical obstacles, and legal framework. The study's overarching goal is to add to the expanding body of literature on digital justice by offering novel approaches to improving India's criminal justice system in terms of openness, accountability, efficiency, and focus on the needs of the people.<sup>3</sup>

## II. REVIEW OF RELATED STUDIES

Tripathi, Riddhi. (2026).<sup>4</sup> The use of artificial intelligence (AI) is having a revolutionary impact on the management of criminal justice systems across the globe. The Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) represents a paradigm change in India's criminal procedure towards the use of technology. The use of AI in the investigation and trial processes has the potential to speed up justice delivery, increase accuracy, and improve efficiency. Privacy, justice, openness, and accountability are some of the major issues that arise when AI is used. This study looks at how the BNSS uses AI in investigations and trials, and it asks if the criminal justice system benefits or suffers from the incorporation of technology. To further assure ethical use of AI within the criminal justice framework, the article assesses the possible protections, legal ramifications, and obstacles.

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<sup>1</sup> Saeed Salem Khalifa Salem Almazroui, Siti Aisyah Samudin, Mahamatayuding Samah and Hanira binti hanafi (2026); legal challenges of criminal liability for artificial intelligence crimes, *int. J. Of adv. Res.*, 14 (01), 1502-1510, ISSN:2320-5407. Doi url: <https://dx.doi.org/10.21474/IJAR01/22688>

<sup>2</sup> Gasser U, Almeida V. A layered model for AI governance. *IEEE Internet Computing*, 2017, 21(6).

<sup>3</sup> Green B, Viljoen S. Algorithmic realism: Expanding the boundaries of algorithmic thought. *Fordham Law Review*, 2020, 89.

<sup>4</sup> Tripathi, Riddhi. (2026). USE OF ARTIFICIAL INTELLIGENCE IN INVESTIGATION AND TRIAL UNDER BHARATIYA NAGARIK SURAKSHA SANHITA (BNSS) 2023: BOON OR THREAT. *SSRN Electronic Journal*. 10.2139/ssrn.6729399.

Jain, Rahul & Chaudhary, Gyandeep. (2026).<sup>5</sup> Cyberbullying is becoming more common and sophisticated as generative artificial intelligence (Gen-AI) develops at a dizzying rate, changing the way people engage with technology. New types of online harm, such as deepfakes, AI-driven impersonation, disinformation, and the creation of exploitative content, have been made possible by Gen-AI in India, a country with fast increasing digital penetration among young people. Although there is an increasing amount of literature on cyberbullying and AI, there is a dearth of material on how these two topics connect within India's legislative and policy framework. The Information Technology Act (IT), 2000, the Protection of Children from Sexual Offences Act (POCSO), 2012, the Bharatiya Nyaya Sanhita (BNS), 2023, and other important legislative frameworks are thoroughly reviewed in this study, which uses a qualitative doctrinal methodology. It looks at normative frameworks and practical enforcement issues by evaluating secondary literature. To further place India within developing global governance trends, the report compares and contrasts regulatory practices in several countries, including the EU, UK, US, and Australia. When it comes to synthetic content, anonymity, and algorithmic amplification, the results show that current legal frameworks aren't prepared to handle AI-driven cyberbullying. Children are already at risk of psychological damage, social rejection, and long-term developmental effects due to structural issues including lax regulation, low digital literacy, and an absence of AI-specific protections. A multi-layered, child-centric policy framework that integrates legal reform, platform accountability, and ethical AI governance is proposed in this study. It offers a conceptual integration of Gen-AI risks with cyberbullying frameworks, provides a comparative legal critique of existing regulatory regimes, and contributes to the emerging field of AI and child protection.

Siryon, Sam. (2026).<sup>6</sup> Traditional legal ideas have their origins in human agency, but they have been upended by the increasing usage of AI and autonomous systems. The ability of AI entities to carry out complicated activities, such as autonomous driving and medical diagnosis, with minimal or no human participation has prompted concerns about who is responsible for any mistakes or negative results caused by humans. In this study, we'll take a look at the key premises surrounding the use of AI in criminal actions and how current legal frameworks fail to address the accountability gaps that arise as a result. Finding the *actus reus* (the physical act) and the *mens rea* (the mental intent)—the two cornerstones of criminal liability—remains the greatest issue. Determining guilt in a non-human algorithm is a significant ethical and legal hurdle, even if AI operations can frequently identify the physical act of a crime. Additionally, AI cannot be viewed as an autonomous legal entity due to its lack of recognised legal personhood; as a result, the emphasis must now be on the liability of creators, operators, and handlers. While different countries' legal systems may take different approaches, some are looking into strict liability for AI developers to make sure the public is secure, while others use models based on causation to make people pay when they're directly involved in a crime. To guarantee that the legal system stays responsive to the distinct dangers presented by autonomous AI-driven crimes, this study ultimately calls for a flexible, multi-pronged regulatory strategy that strikes a compromise between technical advancements and the concepts of fairness.

Lakra, Mukul. (2026).<sup>7</sup> New challenges to criminal theory, including questions of responsibility, attribution, and causation, have arisen in response to the exponential development of artificial intelligence (AI). When it comes to damage produced by autonomous and semi-autonomous robots, traditional criminal law theories that center on human behaviour and purpose are no longer sufficient. This study will compare and contrast

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<sup>5</sup> Jain, Rahul & Chaudhary, Gyandeep. (2026). GENERATIVE AI AND THE CYBERBULLYING OF CHILDREN IN INDIA: LEGAL GAPS, RISKS, AND PRACTICE BASED POLICY SAFEGUARDS. *Balkan Social Science Review*. 27. 7. 10.46763/BSSR26272707j.

<sup>6</sup> Siryon, Sam. (2026). ARTIFICIAL INTELLIGENCE AND CRIMINAL LIABILITY: CHALLENGES UNDER THE BHARATIYA NYAYA SANHITA, 2023. *Technix International Journal for Engineering Research*. 13.

<sup>7</sup> Lakra, Mukul. (2026). CRIMINAL LIABILITY FOR AI HARM: POSITIONING INDIA'S BHARATIYA NYAYA SANHITA WITHIN GLOBAL LEGAL TRENDS. 2. 175-191.

Bharatiya Nyaya Sanhita with worldwide viewpoints on the same to determine if it is capable of addressing such issues. The paper starts by looking at the problems with AI technologies, specifically their opaqueness, unpredictability, and dispersed decision-making processes, from a doctrinal and comparative research perspective. The study then moves on to analyse how the Bharatiya Nyaya Sanhita applies current liability concepts, highlighting significant gaps in addressing algorithmic damages. An increasing tendency toward hybrid liability schemes is seen by comparing the regulatory tactics implemented in significant jurisdictions like the EU, US, and China. Drawing on these conversations, the authors offer a revised theory of criminal culpability in India that accounts for the many players, algorithmic design, and shifting standards of predictive accuracy. Some of the concrete steps they suggest include developing AI-centric crimes, using hybrid liability models, and bolstering investigative and institutional capabilities. The article comes to the conclusion that while the Bharatiya Nyaya Sanhita does provide a framework, it will require regulatory harmonisation and legislative change to be put into practice for AI-related offences. The paper makes a significant contribution to global debates on AI governance through its comparative methodology.

Satarkar Nale, Ganesh. (2025).<sup>8</sup> This study paper delves into the ever-changing terrain of AI governance in India, written by Ganesh Shrirang Satarkar Nale of the Department of Sociology at Central University of Haryana in India. This research examines current legislative frameworks, sector-specific legislation, and new policy initiatives from the perspectives of sociology, law, and technology studies. It focuses on the Information Technology Act of 2000 and the Digital Personal Data Protection Act of 2023. Data governance, accountability, openness of algorithms, cyber-security, and ethical protections are all brought to light. The research highlights the necessity for specific, risk-based, AI legislation in India that is prepared for the future by drawing on global regulatory models such as the EU AI Act and U.S. policy approaches. Additionally, it highlights the need of human monitoring systems, data sovereignty, FAT principles, and cross-border governance in ensuring responsible deployment of AI. This study covers ground in a number of related fields, such as the sociology of technology, data protection, digital policy, cyber law, technology governance, and artificial intelligence. Offering a comprehensive perspective on the technological, ethical, legal, and socio-political concerns offered by AI in India, it adds to academic subjects such as Public Policy, Legal Studies, Computational Ethics, Digital Governance, and Regulatory Studies. Academics, politicians, lawyers, sociologists, and technologists will find it relevant because it fits in with worldwide conversations about AI risk categorisation, accountability frameworks, transparency standards, automated decision-making, international cooperation, regulation of data across borders, and supervision of autonomous systems.

### III. ARTIFICIAL INTELLIGENCE-DRIVEN LEGAL ISSUES IN INDIA AND THE INTRODUCTION OF NEW LEGISLATIONS

Many industries are seeing fast changes as a result of AI, which is bringing new possibilities for efficiency and innovation. Artificial intelligence (AI) is changing the way several sectors work, including healthcare, banking, education, and law enforcement. In order to reap the benefits of AI without jeopardising ethical standards, human rights, and society values, we must overcome the substantial legal hurdles posed by this revolutionary power. In order to successfully traverse the complicated legal issues brought about by the widespread use of AI across several industries, this article delves into the necessity of thorough regulatory frameworks. An estimated 750 million people in India use the internet, with another 460 million using social media.<sup>9</sup> This accounts for almost 30% of the world's user population, according to different independent

<sup>8</sup> Satarkar Nale, Ganesh. (2025). Regulating Artificial Intelligence in India: Legal Frameworks, Governance Challenges, and the Path Toward a Dedicated AI Law- This research paper, authored by Ganesh Shrirang Satarkar Nale, Department of Sociology, Central University of Haryana, India. 1. 49–58. 10.5281/zenodo.17878506.

<sup>9</sup> Josh Howarth, How Many People Own Smartphones? (2024-2029). EXPLODING TOPICS (Jun. 03, 2024, 03:26 PM), <https://explodingtopics.com/blog/smartphone-stats>.

reports. Furthermore, there are an estimated 650 million smartphone users in India, according to recent studies. These results show that many Indians are using the internet for social media, shopping, and other business-related activities. A considerable increase in criminal activities has resulted from this. Cybercrime cases increased by 24.4% from 2021<sup>15</sup> to 2022<sup>10</sup>, according to the National Crime Records Bureau's Crime in India 2022 report. As a result, fresh difficulties emerge.

### **Challenges**

1. One of the most important legal concerns brought about by the development of AI is the need to safeguard personal information<sup>11</sup>. The efficient operation of these systems is highly dependent on massive volumes of data, which frequently contain private and sensitive information. The risk of data abuse or loss is one of the most fundamental concerns around AI data privacy. In order to provide useful results, AI systems generally need access to extensive and, at times, extremely sensitive personal data. This data can encompass a wide range of subjects, from demographics and internet habits to medical records and financial dealings. Data aggregation and analysis raises privacy problems, especially when users aren't informed about the data's usage or when their consent isn't explicitly sought.
2. Another complicated issue in the field of artificial intelligence is accountability and liability. Determining responsibility in the event of an AI system's error or harm becomes more complicated due to AI's independent nature. When AI acts autonomously, it's possible that traditional ideas of liability from the legal system won't apply. When an accident happens involving an autonomous vehicle, for example, it might be hard to determine who was at fault—the AI<sup>12</sup>, the manufacturer, the software developers, or even the owner of the vehicle. This lack of clarity emphasises the importance of legal frameworks establishing transparent standards on AI responsibility, so that victims can pursue compensation while also encouraging innovation.
3. As AI develops more, the validity of IP rights is being called into question. The capacity of AI to produce original ideas poses a threat to the intellectual property (IP) rules that have long served to safeguard the rights of artists and innovators. Now that AI can create its own music, art, and patents, the subject of ownership of these works naturally arises. Changing current intellectual property rules to include works created by AI is a daunting task.<sup>13</sup> "Should the creators or operators of the AI be the ones to own the rights, or should new types of ownership be created?" Also, whether or not AI-generated innovations qualify for patent protection is a topic of continuing controversy over AI's place in the patenting process.
4. When it comes to implementing AI systems, bias and prejudice are major worries.<sup>14</sup> If the data used to train these systems contains prejudices, the AI will most likely continue to use that data to support its own biases. Particularly in areas where AI is being utilised for crucial decision-making, such as recruiting, financing, and law enforcement, this could result in biased outcomes. For instance, if an AI system used for recruiting is

<sup>10</sup> NATIONAL CRIME RECORDS BUREAU, <https://ncrb.gov.in/uploads/nationalcrimerecordsbureau/custom/1701607577CrimeinIndia2022Book1.pdf> last visited (Jun. 03, 2024).

<sup>11</sup> Zhou, Z., Chen, X., Li, E., Zeng, L., Luo, K., & Zhang, J. (2019). Edge Intelligence: Paving the last mile of artificial intelligence with edge computing. *Proceedings of the IEEE*, 107(8), 1738–1762. <https://doi.org/10.1109/jproc.2019.2918951>

<sup>12</sup> Bekbolatova, M., Mayer, J., Ong, C. W., & Toma, M. (2024). Transformative Potential of AI in Healthcare: Definitions, applications, and navigating the ethical landscape and public perspectives. *Healthcare*, 12(2), 125. <https://doi.org/10.3390/healthcare12020125>

<sup>13</sup> Lim, D. (2022). AI, equity, and the IP gap. *SMU Law Review*, 75(4), 815. <https://doi.org/10.25172/smulr.75.4.4>

<sup>14</sup> Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., . . . Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>

educated using data that reflects racial or gender prejudices, it could wind up favouring certain groups over others. So that AI systems don't exacerbate preexisting social disparities, legal frameworks should make accountability, justice, and openness their top priorities.

5. Many are worried about the moral implications of AI, especially in delicate fields like medicine and police work. There are concerns over the ethical implications of depending on computers to make judgements about life-and-death in the healthcare industry, as AI is being utilised for disease diagnosis, therapy recommendation, and even surgical procedures. Similar worries over privacy, civil liberties, and misuse arise when AI is used for predictive policing and monitoring in the police force. Ethical use of AI that respects human rights and maintains society norms requires the establishment of legal guidelines. Making sure AI is used ethically and setting up systems to keep people accountable are both part of this.

6. The fast-paced development of AI also makes regulatory compliance a difficulty. To make sure AI doesn't break any laws, governments and regulatory agencies need to be agile enough to adapt to new technologies. There needs to be a happy medium between too many regulations that limit innovation and too few that allow for abuse and damage. We need a regulatory framework that can change and adapt with the times and new technologies. Some governments have responded to this problem by creating regulatory sandboxes, which allow for the regulated testing of AI technologies.

7. When AI is used in many industries, cybersecurity becomes even more of a problem. Malicious actors can weaponise AI to conduct sophisticated cyberattacks, but AI can also improve cybersecurity by detecting and responding to threats more quickly than humans. By developing norms for AI cybersecurity, making sure AI systems are secure by design, and setting procedures for responsibility in the case of a breach, legal frameworks should tackle the distinct difficulties presented by cyber threats generated by AI.

8. The Trustworthiness and Acceptability of Evidence Produced by AI Concerns over the credibility of testimony given in court have been prompted by the employment of AI in judicial procedures.<sup>15</sup> Evidence based on AI's assumptions may not be admitted if its reliability cannot be established. Concerns concerning false positives, in which innocent people are mistakenly recognised as participating in misconduct, arise when AI is trained to identify particular keywords or phrases linked with particular behaviours. This could happen, for instance, when AI is employed to examine social media posts.

Concerns also surround AI's accuracy in reading human emotions and body language, as well as its dependability in deciding if someone is being truthful. Experts, not attorneys, are usually tasked with investigating these concerns by inspecting the data utilised by AI as well as the AI's code. Despite the potential benefits of AI, the need for specialised analysis can push litigation costs up, making it more expensive for regular individuals.<sup>16</sup> Evidence produced by AI systems is not necessarily reliable or accurate as, like all software, they are susceptible to mistakes and inaccuracies. Artificial intelligence (AI) generated evidence faces significant obstacles to acceptance due to the likelihood of errors. Financial data, trade secrets, and other sensitive information can be better analysed with the use of artificial intelligence techniques in today's complicated litigation scene, which includes delicate intellectual property and business issues. But bringing this analysis to court can be a costly and time-consuming ordeal. Despite the fact that electronic signatures on documents might aid in the fight against counterfeiting, establishing their reliability frequently necessitates the use of substantial expert testimony, which further complicates the evidence process. The increasing impact of AI technology on Indian legal, ethical, and social norms makes the junction of AI and law all the more

<sup>15</sup> AI and Admissibility of Evidence, LJRF Voice, <https://ljrvoice.com/ai-and-admissibility-of-evidence/#:~:text=Like%20any%20software%2C%20AI%20is,face%20substantial%20barricades%20to%20admissibility> (last visited Aug. 7, 2024).

<sup>16</sup> Khan, R., Kumar, P., Jayakody, D. N. K., & Liyanage, M. (2020). A Survey on Security and Privacy of 5G Technologies: Potential Solutions, Recent Advancements, and Future Directions. *IEEE Communications Surveys & Tutorials*, 22(1), 196– 248. <https://doi.org/10.1109/comst.2019.2933899>

important. In 2023, in response to these changes, India enacted important legislative reforms for AI, such as the Digital Personal Data Protection Act, Bharatiya Nyaya Sanhita (BNS), Bharatiya Sakshya Adhiniyam (BSA), and Bharatiya Nagrik Suraksha Sanhita (BNSS).

#### IV.METHODOLOGY OF THE STUDY

##### Research Design

The purpose of this study is to investigate how digital technologies and Artificial Intelligence (AI) can be used to effectively execute Community Service Punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. The research strategy will be descriptive, analytical, doctrinal, and socio-legal.

##### Nature of the Study

The research belongs to the empirical and doctrinal categories. In the doctrinal section, we look at statutes, court rulings, and policy papers; in the empirical section, we survey relevant parties to get their thoughts on whether or not community service should use artificial intelligence and other digital technologies.

##### Sources of Data

- **Primary Data:** Obtained by the administration of a structured questionnaire to a sample size of 110 people drawn from the following professions: advocates, probation officials, academics, police officers, judges, and law students.
- **Secondary Data:** Gathered from official legal websites, books, journals, government publications, judicial judgements, Law Commission reports, BNS, BNSS, and BSA from 2023, as well as other sources.

##### Sampling Technique

In order to find people who are knowledgeable about criminal justice and community service as a punishment, we will employ Purposive Sampling.

##### Sample Size

The study comprises 110 respondents.

##### Research Instrument

The main data will be collected using a standardised questionnaire that is based on a Five-Point Likert Scale.

##### Data Analysis

Various statistical tests, including ANOVA, Chi-square, Mean, Standard Deviation, and Percentage, will be used to examine the data. We will use doctrinal, comparative, and content analysis to analyse legal materials.

##### Hypothesis of the study

**H<sub>0</sub>:** There is no significant relationship between stakeholders' awareness of AI and their support for AI-enabled community service punishment.

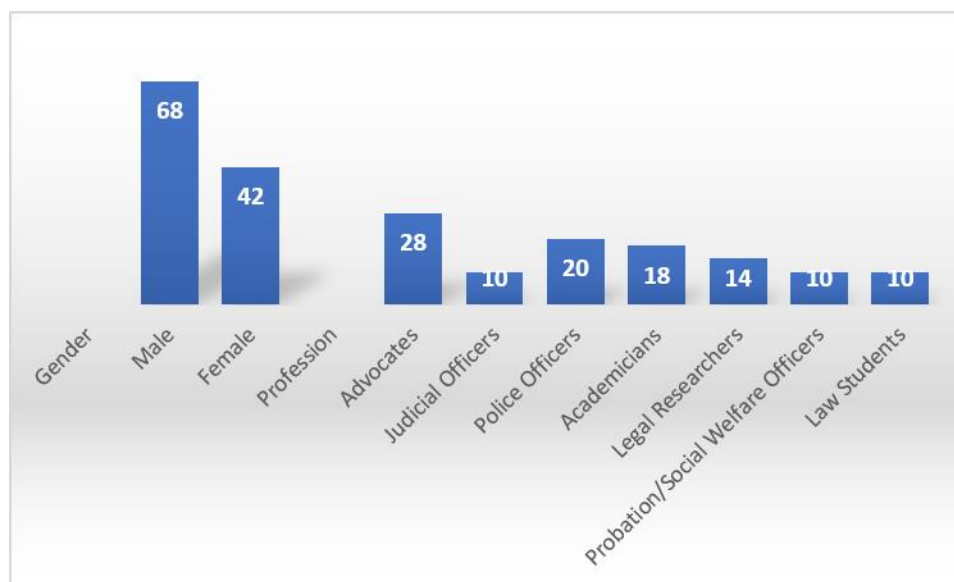
**H<sub>0</sub>:** There is no significant difference in perceptions regarding AI-based community service punishment among different professional groups.

#### V.DATA ANALYSIS AND RESULTS

**Table 1: Demographic Profile of Respondents (N = 110)**

| Category          | Frequency | Percentage (%) |
|-------------------|-----------|----------------|
| <b>Gender</b>     |           |                |
| Male              | 68        | 61.8           |
| Female            | 42        | 38.2           |
| <b>Profession</b> |           |                |
| Advocates         | 28        | 25.5           |
| Judicial Officers | 10        | 9.1            |
| Police Officers   | 20        | 18.2           |

|                                   |            |              |
|-----------------------------------|------------|--------------|
| Academicians                      | 18         | 16.4         |
| Legal Researchers                 | 14         | 12.7         |
| Probation/Social Welfare Officers | 10         | 9.1          |
| Law Students                      | 10         | 9.1          |
| <b>Total</b>                      | <b>110</b> | <b>100.0</b> |

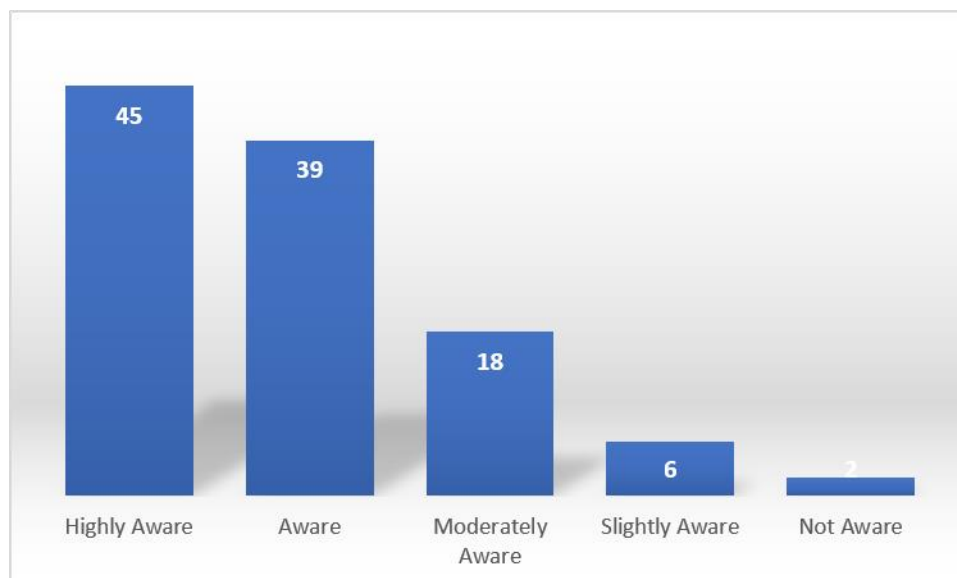


**Figure 1: Demographic Profile of Respondents (N = 110)**

Table 1 presents the demographic profile of the 110 respondents included in the study. In terms of gender, the majority of respondents were male, accounting for 68 participants (61.8%), while female respondents comprised 42 participants (38.2%), indicating a higher representation of males in the sample. Regarding professional background, advocates constituted the largest group with 28 respondents (25.5%), followed by police officers with 20 respondents (18.2%) and academicians with 18 respondents (16.4%). Legal researchers represented 14 respondents (12.7%), whereas judicial officers, probation/social welfare officers, and law students each accounted for 10 respondents (9.1%). This distribution demonstrates that the study included participants from diverse legal and justice-related professions, ensuring a broad range of perspectives from key stakeholders associated with the criminal justice system and the implementation of legal reforms.

**Table 2: Awareness of Community Service Punishment under BNS, 2023**

| Response         | Frequency  | Percentage (%) |
|------------------|------------|----------------|
| Highly Aware     | 45         | 40.9           |
| Aware            | 39         | 35.5           |
| Moderately Aware | 18         | 16.4           |
| Slightly Aware   | 6          | 5.5            |
| Not Aware        | 2          | 1.8            |
| <b>Total</b>     | <b>110</b> | <b>100.0</b>   |

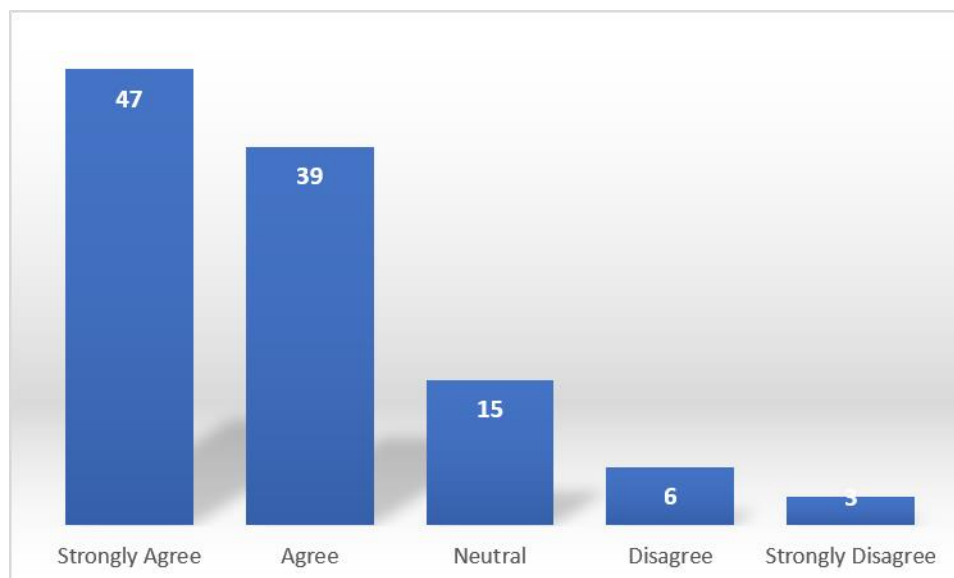


**Figure 2: Awareness of Community Service Punishment under BNS, 2023**

Table 2 presents the level of awareness among respondents regarding the provision of community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. The findings indicate that a substantial majority of respondents possess a high level of awareness, with 45 respondents (40.9%) reporting that they are highly aware and 39 respondents (35.5%) stating that they are aware of the provision. Additionally, 18 respondents (16.4%) indicated a moderate level of awareness, while only 6 respondents (5.5%) were slightly aware. A very small proportion of respondents, comprising 2 individuals (1.8%), reported that they were not aware of community service punishment under the BNS, 2023. Overall, the results reveal that more than three-fourths of the respondents (76.4%) are either aware or highly aware of the concept, suggesting a strong level of familiarity with this reform among legal and justice-related stakeholders. However, the presence of a small proportion of respondents with limited or no awareness highlights the need for continued legal education, professional training, and awareness initiatives to ensure uniform understanding and effective implementation of community service punishment under the new criminal law framework.

**Table 3: Perception regarding the Need for AI in Community Service Punishment**

| Response          | Frequency  | Percentage (%) |
|-------------------|------------|----------------|
| Strongly Agree    | 47         | 42.7           |
| Agree             | 39         | 35.5           |
| Neutral           | 15         | 13.6           |
| Disagree          | 6          | 5.5            |
| Strongly Disagree | 3          | 2.7            |
| <b>Total</b>      | <b>110</b> | <b>100.0</b>   |

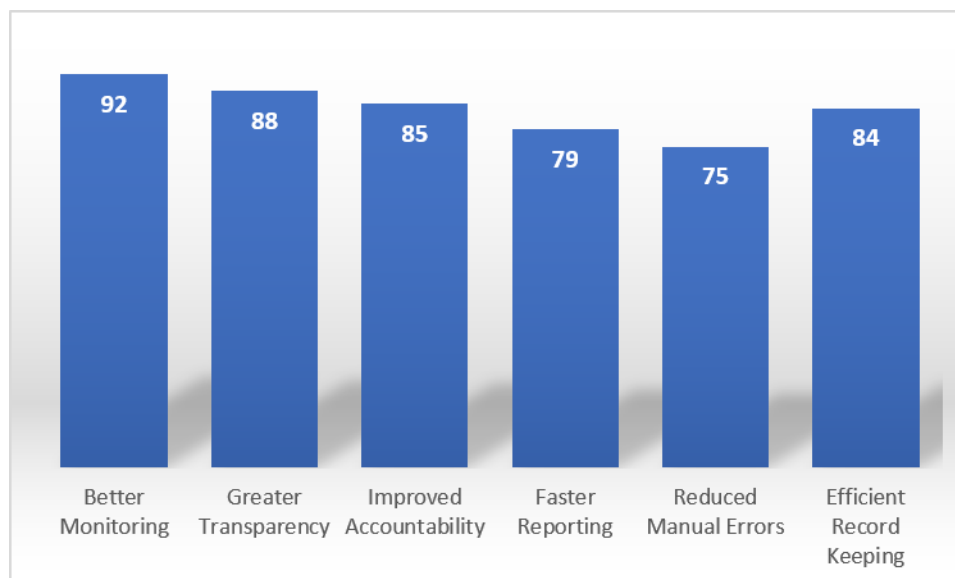


**Figure 3: Perception regarding the Need for AI in Community Service Punishment**

Table 3 illustrates the respondents' perceptions regarding the need for Artificial Intelligence (AI) in the implementation of community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. The findings reveal a highly positive attitude toward the adoption of AI, with 47 respondents (42.7%) strongly agreeing and 39 respondents (35.5%) agreeing that AI is needed in the administration and monitoring of community service punishment. Together, these categories account for 86 respondents (78.2%), indicating strong overall support for integrating AI into the criminal justice system. Meanwhile, 15 respondents (13.6%) expressed a neutral opinion, suggesting uncertainty or the need for further understanding of AI's role. Only a small proportion of respondents disagreed (6 respondents, 5.5%) or strongly disagreed (3 respondents, 2.7%) with the use of AI. Overall, the findings demonstrate a broad consensus among legal and justice stakeholders that AI can play a significant role in enhancing the efficiency, transparency, accountability, and effective supervision of community service punishment under the BNS, 2023, while the limited opposition indicates the importance of addressing concerns related to technology adoption, privacy, and implementation challenges.

**Table 4: Expected Benefits of AI and Digital Technologies** (*Multiple responses allowed*)

| Benefit                  | Frequency | Percentage (%) |
|--------------------------|-----------|----------------|
| Better Monitoring        | 92        | 83.6           |
| Greater Transparency     | 88        | 80.0           |
| Improved Accountability  | 85        | 77.3           |
| Faster Reporting         | 79        | 71.8           |
| Reduced Manual Errors    | 75        | 68.2           |
| Efficient Record Keeping | 84        | 76.4           |

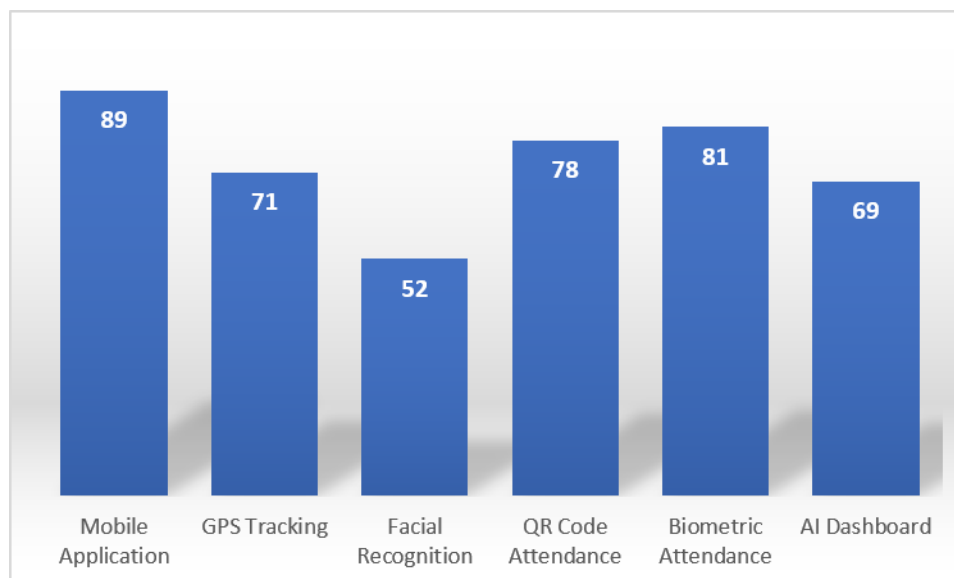


**Figure 4: Expected Benefits of AI and Digital Technologies**

Table 4 presents the respondents' perceptions regarding the expected benefits of integrating Artificial Intelligence (AI) and digital technologies into the implementation of community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. Since multiple responses were allowed, the percentages exceed 100 percent. The findings indicate that better monitoring emerged as the most frequently expected benefit, with 92 respondents (83.6%) identifying it as a key advantage. This was followed by greater transparency, selected by 88 respondents (80.0%), and improved accountability, reported by 85 respondents (77.3%). Efficient record keeping was considered beneficial by 84 respondents (76.4%), while faster reporting was identified by 79 respondents (71.8%). Additionally, 75 respondents (68.2%) believed that AI and digital technologies would help reduce manual errors in the management of community service punishment. Overall, the findings demonstrate a strong positive perception of AI and digital technologies among the respondents, with the majority believing that these innovations can significantly enhance monitoring, transparency, accountability, record management, reporting efficiency, and overall effectiveness in the administration of community service punishment under the BNS, 2023.

**Table 5: Preferred Digital Technologies for Monitoring Community Service**

| Technology           | Frequency | Percentage (%) |
|----------------------|-----------|----------------|
| Mobile Application   | 89        | 80.9           |
| GPS Tracking         | 71        | 64.5           |
| Facial Recognition   | 52        | 47.3           |
| QR Code Attendance   | 78        | 70.9           |
| Biometric Attendance | 81        | 73.6           |
| AI Dashboard         | 69        | 62.7           |

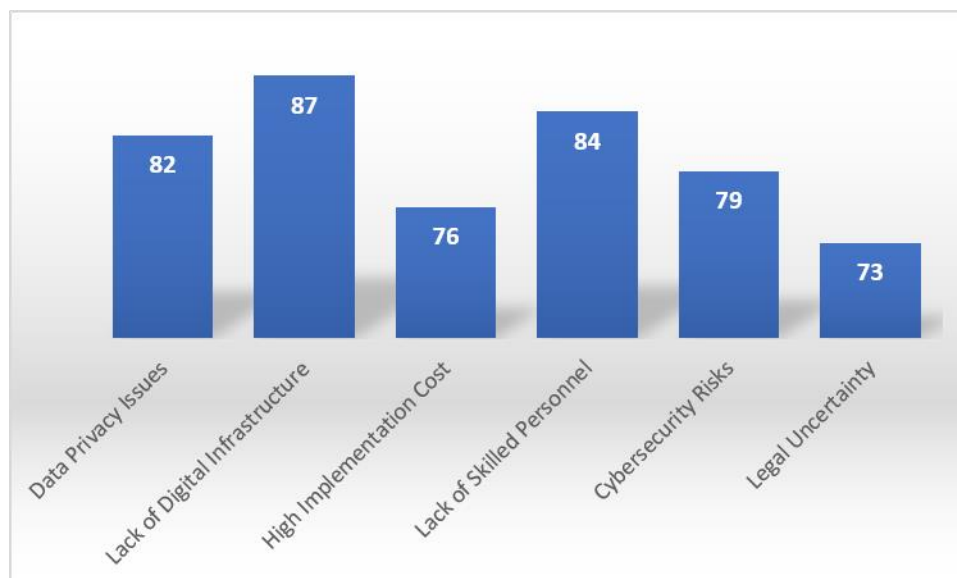


**Figure 5: Preferred Digital Technologies for Monitoring Community Service**

Table 5 presents the respondents' preferences regarding the digital technologies that can be used for monitoring community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. As multiple responses were permitted, the percentages exceed 100 percent. The findings indicate that mobile applications are the most preferred technology, selected by 89 respondents (80.9%), reflecting their ease of use and accessibility for monitoring and reporting community service activities. This is followed by biometric attendance, preferred by 81 respondents (73.6%), and QR code attendance, chosen by 78 respondents (70.9%), highlighting the respondents' preference for reliable and tamper-resistant attendance systems. GPS tracking was supported by 71 respondents (64.5%), indicating its perceived usefulness in verifying the location and completion of assigned community service. Additionally, AI dashboards were preferred by 69 respondents (62.7%) for real-time monitoring and data management, while facial recognition technology received comparatively lower support, with 52 respondents (47.3%), possibly reflecting concerns regarding privacy, accuracy, or ethical implications. Overall, the findings suggest a strong inclination toward adopting practical and technology-driven monitoring mechanisms that enhance transparency, accountability, and efficiency in the implementation of community service punishment under the BNS, 2023.

**Table 6: Challenges in AI-Based Community Service Punishment**

| Challenge                      | Frequency | Percentage (%) |
|--------------------------------|-----------|----------------|
| Data Privacy Issues            | 82        | 74.5           |
| Lack of Digital Infrastructure | 87        | 79.1           |
| High Implementation Cost       | 76        | 69.1           |
| Lack of Skilled Personnel      | 84        | 76.4           |
| Cybersecurity Risks            | 79        | 71.8           |
| Legal Uncertainty              | 73        | 66.4           |

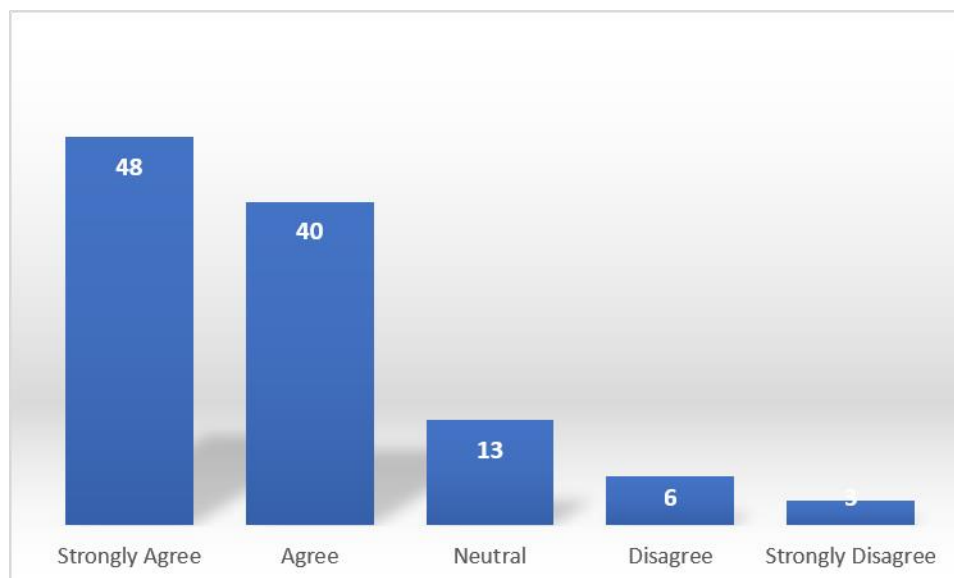


**Figure 6: Challenges in AI-Based Community Service Punishment**

Table 6 presents the respondents' views regarding the major challenges associated with implementing Artificial Intelligence (AI) and digital technologies in the administration of community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. Since multiple responses were allowed, the percentages exceed 100 percent. The findings reveal that lack of digital infrastructure is perceived as the most significant challenge, identified by 87 respondents (79.1%), indicating concerns about the availability of adequate technological facilities for effective implementation. This is followed by lack of skilled personnel, reported by 84 respondents (76.4%), highlighting the need for trained professionals capable of managing AI-based systems. Data privacy issues were identified by 82 respondents (74.5%), reflecting apprehensions regarding the protection of personal information and compliance with privacy standards. Furthermore, cybersecurity risks were recognized by 79 respondents (71.8%), emphasizing the importance of securing digital platforms against cyber threats. High implementation cost was considered a challenge by 76 respondents (69.1%), suggesting that financial constraints may hinder the adoption of AI technologies. Finally, legal uncertainty was reported by 73 respondents (66.4%), indicating the need for clearer legal and regulatory frameworks governing the use of AI in the criminal justice system. Overall, the findings demonstrate that while respondents recognize the potential benefits of AI-based community service punishment, they also emphasize the importance of addressing infrastructural, technical, financial, legal, and data security challenges to ensure its effective, ethical, and sustainable implementation under the BNS, 2023.

**Table 7: Overall Opinion on AI-Based Monitoring**

| Response          | Frequency  | Percentage (%) |
|-------------------|------------|----------------|
| Strongly Agree    | 48         | 43.6           |
| Agree             | 40         | 36.4           |
| Neutral           | 13         | 11.8           |
| Disagree          | 6          | 5.5            |
| Strongly Disagree | 3          | 2.7            |
| <b>Total</b>      | <b>110</b> | <b>100.0</b>   |



**Figure 7: Overall Opinion on AI-Based Monitoring**

Table 7 presents the overall opinion of respondents regarding the adoption of AI-based monitoring for community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. The findings indicate a highly favorable perception toward AI-based monitoring, with 48 respondents (43.6%) strongly agreeing and 40 respondents (36.4%) agreeing with its implementation. Collectively, 88 respondents (80.0%) expressed positive support, reflecting a strong consensus that AI-based monitoring can enhance the effectiveness of community service punishment. Meanwhile, 13 respondents (11.8%) remained neutral, suggesting that they may require additional information or evidence regarding the practical application of AI technologies. Only a small proportion of respondents expressed negative views, with 6 respondents (5.5%) disagreeing and 3 respondents (2.7%) strongly disagreeing. Overall, the findings demonstrate widespread acceptance of AI-based monitoring among legal and justice stakeholders, indicating confidence in its potential to improve transparency, accountability, efficiency, and compliance in the implementation of community service punishment under the BNS, 2023, while also emphasizing the need to address the concerns of the small minority who remain hesitant about its adoption.

**Table 8: Chi-Square Results**

| Test            | $\chi^2$ Value | df | p-value | Decision     |
|-----------------|----------------|----|---------|--------------|
| Chi-Square Test | 24.82          | 8  | 0.002   | Reject $H_0$ |

Table 8 presents the results of the Chi-Square test conducted to examine the association between the study variables related to Artificial Intelligence (AI) and community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. The calculated Chi-Square ( $\chi^2$ ) value is 24.82 with 8 degrees of freedom (df), and the corresponding p-value is 0.002. Since the p-value is less than the conventional level of significance (0.05), the null hypothesis ( $H_0$ ) is rejected. This indicates that there is a statistically significant association between the variables examined in the study, suggesting that respondents' perceptions regarding the use of AI and digital technologies are not independent of the selected factors. The findings imply that AI-based interventions are viewed as significantly related to the effective implementation and monitoring of community service punishment under the BNS, 2023. Therefore, the study provides empirical evidence supporting the adoption of AI and digital technologies in the criminal justice system, while emphasizing the importance of strengthening the necessary legal, technological, and institutional frameworks for their successful implementation.

**Table 9: ANOVA Results**

| Source         | Sum of Squares | df  | Mean Square | F    | p-value |
|----------------|----------------|-----|-------------|------|---------|
| Between Groups | 18.74          | 6   | 3.12        | 4.68 | 0.001   |
| Within Groups  | 68.59          | 103 | 0.67        |      |         |
| Total          | 87.33          | 109 |             |      |         |

**Decision:** Reject  $H_0$  ( $p < 0.05$ ).

Table 9 presents the results of the Analysis of Variance (ANOVA) conducted to determine whether there are statistically significant differences among the respondent groups regarding their perceptions of Artificial Intelligence (AI) and digital technologies in the implementation of community service punishment under the Bharatiya Nyaya Sanhita (BNS), 2023. The analysis shows that the between-group sum of squares is 18.74 with 6 degrees of freedom, resulting in a mean square of 3.12, while the within-group sum of squares is 68.59 with 103 degrees of freedom and a mean square of 0.67. The calculated F-value of 4.68 with a p-value of 0.001 indicates that the observed differences among the groups are statistically significant, as the p-value is less than the 0.05 level of significance. Therefore, the null hypothesis of no significant difference among the groups is rejected. The findings suggest that respondents from different professional backgrounds hold significantly different perceptions regarding the use of AI and digital technologies for monitoring and administering community service punishment. This highlights the influence of professional roles and experiences on attitudes toward AI adoption and underscores the need for targeted awareness programmes, capacity-building initiatives, and policy measures to promote broader acceptance and effective implementation of AI-based community service monitoring under the BNS, 2023.

## VI.CONCLUSION

A major step towards enhancing restorative justice and fostering offender rehabilitation within the Indian criminal justice system has been taken with the adoption of Community Service Punishment under the Bharatiya Nyaya Sanhita, 2023. Nevertheless, this sentencing mechanism can only be effective if it is correctly put into place, monitored consistently, and evaluated openly. Based on the results of this socio-legal study, digital technologies and AI have the potential to revolutionise the way community service punishment is administered. These advancements can help with supervision, record keeping, accountability, and real-time monitoring.

To increase compliance and decrease administrative inefficiencies, the survey shows that stakeholders are strongly in favour of using digital platforms enabled by artificial intelligence, biometric attendance systems, GPS-based monitoring, mobile apps, and centralised digital databases. Data privacy, cybersecurity, legal protections, digital infrastructure, and technological competence are all acknowledged as critical concerns. In light of these difficulties, it is clear that a middle ground between technical advancement and strong legal and ethical safeguards is required.

The research found that digital technologies and AI should work in tandem with human oversight and judicial discretion rather than in place of it. The efficient execution of community service punishment depends on a number of factors, including a safe national digital platform, standardised implementation standards, programs to enhance the ability of judicial and penal agencies, and data protection safeguards that really work. The criminal justice system in India could be improved in terms of openness, efficiency, accountability, and responsiveness to the restorative justice goals outlined in the Bharatiya Nyaya Sanhita, 2023, with the right institutional, legal, and technical backing for AI-enabled community service administration.

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