

THE ROLE OF ARTIFICIAL INTELLIGENCE AND DISPUTE RESOLUTION IN INDIAN VILLAGES: TRANSFORMING ADR PRACTICES

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Abstract: Access to justice is a fundamental right in India, yet many, especially in rural areas, struggle with slow, expensive and inaccessible court systems, leading to case backlogs. The integration of Artificial Intelligence (AI) in Alternative Dispute Resolution (ADR) is transforming dispute resolution, offering faster, cost-effective solutions. AI-powered ADR platforms, supported by government digitalization initiatives, are set to revolutionize access to justice. However, a strong regulatory framework is essential to ensure fairness, transparency and accountability. Addressing concerns like algorithmic bias and data privacy is crucial for ethical implementation. If AI systems adhere to higher standards of transparency and explainability, they can enhance ADR governance. Despite challenges, AI-powered ADR holds immense potential to improve rural dispute resolution, making justice more accessible, efficient and equitable.

Keywords: Artificial Intelligence, Technologies, Alternative

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1. Introduction

In the dynamic intersection of law and technology, artificial intelligence (AI) is emerging as a powerful tool that promises to transform various aspects of legal practice. One area where AI's impact is particularly profound is dispute resolution. Traditionally, dispute resolution processes such as conciliation, mediation and arbitration have relied heavily on human judgment and interaction. However, with the advent of AI, these practices are undergoing a significant shift. With its ability to process vast amounts of data and learn from patterns, AI offers new possibilities for resolving disputes more efficiently and effectively. From automating routine tasks to predicting outcomes and even acting as mediators or arbitrators, AI is reshaping the dispute resolution landscape. The integration of artificial intelligence (AI) technologies has led to a notable transformation in India's dispute resolution mechanisms in recent times.

Access to justice is a fundamental right in India, but the reality is that many citizens, especially in rural areas, face significant barriers in resolving disputes. The traditional court system in the country is often slow, expensive, and inaccessible, leading to a significant backlog of cases. However, the integration of Artificial Intelligence technologies has led to a notable transformation in India's dispute resolution mechanisms through Alternative Dispute Resolution (ADR) practices in recent times.

2. The Need for ADR In Indian Villages

Indian villages face significant challenges in dispute resolution due to limited legal access, lack of awareness, and financial constraints. Alternative Dispute Resolution (ADR) methods like mediation, conciliation, and arbitration offer viable solutions but face obstacles such as inadequate infrastructure, untrained professionals, and limited technology access. The historically proven *Panchayat* system can alleviate the judiciary's burden by

offering cost-effective and practical dispute resolution. Traditionally, Panchayats have played a crucial role in settling conflicts, and their expertise should be harnessed for effective mediation. Ensuring *Panchayats* function efficiently across India requires adequate infrastructure, training, and support. Government-led workshops should be mandatory to equip village leaders with essential adjudication and mediation skills. Public awareness campaigns should highlight the benefits of this system, encouraging villagers to opt for local mediation instead of formal courts. Incentives and recognition should be provided to Panchayats successfully implementing this model. Given that a significant portion of India’s population resides in villages, strengthening this system presents a compelling alternative for efficient and accessible dispute resolution.

3. The Role of AI in ADR

The potential for integrating technology into the legal system is still enormous. Computer coded smart contracts have the potential to automate enforceability through the transfer of rights and duties, facilitating the management of disputes based on blockchain arbitration. The main legal frameworks that support blockchain contracts are the in the year 1996 UNCITRAL Electronic Model Law on Electronic Commerce and in the year 2007 the UNCITRAL Convention on Electronic Communications in International Contracts. By permitting the use of electronic data records and transactions during the arbitration procedure, articles 6 and 18 of the 2007 Convention provide clarification on on-chain arbitration. In general, difficulties with justice and data protection arise during implementation.*

3.1. AI Working Method in ADR

Artificial intelligence can function in two ways:

a. AI is a tool that can be used for Benefit: The first way - AI can help with document analysis, research, and standard drafting. AI may also be used to identify lies, evaluate damages, estimate

* Jenny J et al., *Peace-Making and New Technologies*: 6.

consequences, and suggest likely solutions. Thus, for a streamlined and quick ADR process, human decision-makers could contact the AI on an advising basis.

b. AI may even act as an Independent Neutral Entity: The second way - The algorithm would analyze its database to identify the offer that best suits to its model solution, enabling both parties to submit their final, optimal proposals. This approach incentivizes logical offers, increasing the likelihood of selection by the AI over competing proposals. By leveraging the algorithm's strengths, this design minimizes challenges that could otherwise complicate its decision-making process.†

3.2. Decision Making and Advantages of AI in ADR

Three mental components make up the human mind: the conscious, subconscious and unconscious. We make decisions with our conscious minds, but our subconscious and unconscious minds also contribute to the decision-making process. Although an arbitrator is expected to make decisions and awards using logic, there is a potential that the outside world will have an effect on their judgement and award. When making decisions, all three areas of the mind are important. The human rational approach is hampered by this. The AI programmes are not influenced by such baseless causes. Algorithms are used to programme them to behave autonomously. AI-based decisions are far more logical than those made by humans.

a. No Unconscious Control and Cognitive Biases

Humans are prone to cognitive biases, which can affect their decision-making. An arbitrator, for instance, may be influenced by earlier cases or external factors when making judgments later in the day, altering their reasoning process. The anchor effect exemplifies this tendency, where individuals rely heavily on the first piece of information they receive. Such biases often shape human decisions. In contrast, AI programs remain cognitively neutral, unaffected by external influences.

†UN Secretary-General's Strategy on New Technologies – 2018: 4-5.

b. Efficacy in Time-Based Arbitration

The main goal of arbitration is to appoint an impartial third party to settle disputes on an equal footing and without unnecessary expense or delay. Saving time and money is one of the main goals of the arbitration procedure. The integration of artificial intelligence (AI) in the arbitration process will complement the arbitration's goal. Due to AI's independent development of thought and reasoning, it can be utilized to lighten the strain on those taking part in arbitration processes. Artificial intelligence will automate time-consuming legal research and data processing.‡

c. Eliminating Errors

Human arbitrators are susceptible to errors in interpretation, translation, documentation, choice of authorities and decision-making, among other things. The arbitral procedure can be made more efficient by using AI at different points or for distinct duties. To make the process more effective, it can recognize blind areas and give suggestions for minimizing them.

d. Predicted Results

AI is used to select the suitable arbitrators and forecast the result based on the facts which is provided by the parties having dispute.

e. Quick Award Formation

In the current situation, after passing the award, the parties must wait for its compliance. An award can be implemented right away thanks to AI. For instance, if a court rules that one party (A) must pay another party (B) a specified amount of money, the money is quickly moved from one's bank account to another's bank account using AI. In order to verify that the award is being followed, AI can also issue a recall to the pertinent parties and authorities.

3.3. Obstacles to AI Implementation in ADR

AI systems are trained on data sets, but they also have the

‡ Lodder, A.R. and Zeleznikow, J., “Artificial Intelligence and Online Dispute Resolution”: 73-94.

potential to interfere with arbitration objectives.

a. Massive Investment

The initial integration of AI in arbitration will demand a significant financial commitment and amount of time due to the necessity for training with such a fast-evolving technology. The development of AI systems is carried out to reduce the expense of proceedings, but this inevitably raises the cost of the system because it costs a lot of money to create these AI programmes and sophisticated algorithms. If included, this will turn out to be affordable for the parties to the arbitration.[§]

b. Occupation

AI usage and development are done to make life easier for humans. But because just a small number of people are needed to make the AI system work, this directly affects the employment rate. Additionally, AI will be capable of performing human-led labour, which will result in a decrease in the workforce.

c. Privacy Principles

Confidentiality is one of the primary requirements for arbitration proceedings. Only a few people have full access to the intellectual processes and software programming that make up artificial intelligence (AI), which in this situation might deliver the final decision. Software programming is vulnerable to hacking. By hacking, the parties run the risk of compromising their private information. Every system update increases the risk of viruses and other difficult technical issues.**

d. Ignoring the Possibility of Software Programme

Due to the absence of rational justification, the parties cannot always trust the system's algorithmic analysis, leading to concerns over accountability, secrecy risks and similar issues, ultimately causing them to lose confidence in the system. There is a possibility that programmers may withhold the algorithms or the methodology behind the outcomes. It can be challenging to leave all decision-making to a machine.

[§] Chris Chambers Goodman, "Impacts of Artificial Intelligence in Lawyer-Client Relationships": 72.

** Sarita & Harsh Kumar, "Mediation and Artificial Intelligence: 1472.

e. Lack of Flexibility

Every arbitration case is unique, and if decisions are made according to a normal operating procedure and a set protocol for deciding every case, then the lack of consistency is evident. Each award comes with a statement of the factors that went into the decision. Only a limited number of fixed algorithms will allow for a limited number of judgement combinations, leading to the creation of a rigid structure.

Observations: After weighing the advantages and disadvantages of combining ADR with AI, it can be said that AI is still in its infancy and has a long way to go before it can be fully integrated into the legal system. Technology, innovation and invention have operated in isolation for aeons, making them specific to certain industries. However, as things change, there is an urgent need for greater public knowledge. As long as technology protects fundamental human rights, it can be completely adopted in the legal profession. It has the potential to be one of the most significant developments in legal technology with a carefully thought-out vision, flawless strategy, and responsible application of AI and ADR policies.

4. AI-Powered Mediation, Arbitration and Conciliation Process in Indian Villages

It is worth exploring how deeply AI can penetrate the mediation, arbitration and conciliation process (ADR) in the villages, considering the major difference it has with any other dispute resolution mechanism, say arbitration or a judicial process. This difference lies not in law or technology, but the basic psychology of human interactions. A settlement through ADR is not achieved by establishing who is right or wrong – it is by negotiating what best can be done in the given circumstances. It need not always be a logical conclusion or a precedented solution. It could be achieved by one party empathizing with the other, or the parties compromising with each other to maintain a relationship even after the dispute is settled. While the legal aspects of a dispute are of utmost importance while resolving it, mechanisms like ADR

are the very few avenues that offer equal weightage to its emotional aspects too, even for disputes of a commercial nature.

While AI enthusiasts celebrate its boundless potential, Alternative Dispute Resolution (ADR) emerges as a rare domain that highlights its limitations. Mediation, at its core, is a deeply human process—one that AI, despite its advanced algorithms, struggles to replicate. The intricate interplay of human emotions, social dynamics and nuanced reasoning remains beyond the grasp of machines. At best, AI can serve as a facilitator, enhancing the mediation process rather than replacing the mediator. Whether a dispute is commercial, personal, or civil, resolution ultimately rests in human hands, as it is humans—not algorithms—who seek understanding and reconciliation.

4.1. Challenges of Implementing AI-ADR Process

There are several challenges in implementing AI-ADR process in rural areas. First and foremost, ADR is a process, not a one-time event. It is not something that happens; everyone goes on with their lives. It is a journey in which people learn how to resolve their conflicts, trust each other again and work together as a team. This process takes time, patience and skill. Another challenge is that people in rural areas have limited access to information and technology, so they may need to be aware of mediation as an option. While AI-powered ADR platforms offer several benefits, there are challenges and limitations, including: a. limited awareness: many villagers are not aware of AI-powered ADR platforms, limiting their adoption; b. limited access to technology: many villagers do not have access to smartphones or computers, making it difficult to access AI-powered ADR platforms; c. limited internet connectivity: internet connectivity is limited in many rural areas, making it difficult to access AI-powered ADR platforms.

4.2. Overcoming ADR Challenges in Rural Areas

Despite limitations, AI can be introduced in mediation in the rural areas in many ways. The most effective way is to collaborate with local people and organizations to help them identify and resolve issues affecting their community with the help of AI. This can be

done by connecting and working with existing dispute resolution services to expand their reach, creating new mediation service centres in the rural areas, and training and empowering local people to use mediation as an alternative conflict resolution with the help of AI. For example, involving children and youth in identifying and resolving issues they face allows them to have a voice, which research has shown can lead to more effective solutions and better outcomes with the help of AI. Similarly, involving women and female community leaders can be trained in AI to ensure that the issues they face are recognised and that solutions are developed to meet their needs and circumstances. To address the challenges, it is essential: a. to increase awareness about AI-powered ADR platforms through education and training programs; b. improve access to technology by providing smartphones and computers in rural areas; c. enhance internet connectivity by investing in infrastructure development.

5. Nyaya Swaraj Gram Adhiniyam

Mahatma Gandhi envisioned *Gram Swaraj* (self-rule) as a perfect democracy rooted in individual freedom, where the panchayat functions as the legislative, judiciary and executive body. This vision extends to Nyaya Swaraj, a dispute resolution mechanism called *Nyaya Swaraj Gram Adhiniyam*. *Nyaya* refers to the realization of *neeti* (rules and institutions) and the enforcement of laws, but it goes beyond institutional frameworks. It embodies comprehensive justice linked to real-world outcomes, emphasizing fairness in village-level justice systems. Unlike conventional legal approaches, Nyaya Swaraj focuses on both the process and the outcome, ensuring equitable dispute resolution.

Swaraj, developed during India's freedom struggle, is more than political self-rule; it signifies self-respect, responsibility and self-realization. True swaraj means creating new systems and structures for individual and collective growth. In Nyaya Swaraj, dispute resolution follows Gandhian principles, where settlements arise from mutual agreement rather than coercion. Mediators or conciliators assist disputants, fostering

empowerment (enhancing individuals' self-worth and problem-solving capacity) and recognition (cultivating empathy). Nyaya Swaraj democratizes and decentralizes justice, empowering communities to resolve disputes amicably. It does not eliminate conflicts but ensures they are addressed at their source through negotiation and mediation by *Nyaya Samithis*, composed of respected elders. This model integrates India's traditional doorstep justice, modern dispute resolution techniques (mediation, conciliation, negotiation, arbitration), and contemporary practices like Lok Adalat. It complements formal judicial systems, enhancing access to justice without undermining institutional authority.

5.1. The Salient Features of Nyaya Swaraj Gram Adhiniyam

(i) **Objective:** The *Nyaya Swaraj Gram Adhiniyam* aims to establish a decentralized dispute resolution mechanism for Indian villages. Its key objectives are: (a) participatory and decentralized justice, (b) swift dispute resolution and (c) accessible justice for villagers.

(ii) **Nyaya Samithi:** Each *Gram Panchayat* or zone will have a *Nyaya Samithi*, a statutory panel resolving disputes through mediation, conciliation, arbitration, or negotiation. Since members are from the same locality, they better understand the socio-cultural context, ensuring fair decisions that are widely accepted. Members will receive AI training to enhance their ability to recognize issues and develop appropriate solutions.

(iii) **Members:** The *Nyaya Samithi* will consist of retired or senior teachers, village doctors, health workers, social activists, postal and agricultural department employees, Scheduled Caste/Tribe representatives, women and other social workers. AI training will be provided to all members.

(iv) **Purpose:** The *Nyaya Samithi* empowers grassroots communities to resolve disputes amicably, ensuring social harmony without involving police, lawyers, or civil courts.

(v) **Qualification of the Members:** Members must have high moral integrity, education, impartiality and ADR training.

They should be approachable, dedicated to justice and well-versed in AI-assisted dispute resolution.

(vi) **Mode of Functioning:** The *Nyaya Samithi* will focus on conciliation, mediation and negotiation. Each case will be decided by three impartial members – two selected by disputants and one chosen by those two. Their decision will be binding as if issued by the Supreme Court of India. Cases that cannot be resolved will be documented as either a ‘success note’ or a ‘failure note.’ Advocates’ presence is discouraged but may be permitted with approval.

(vii) **Selection of *Nyaya Samithi* Members:** The selection process will be overseen by the State and District Legal Service Authorities in consultation with assigned law schools or colleges.

(viii) **Para-Legal Officer:** Each *Gram Panchayat* will appoint a Para-Legal Officer responsible for legal education, civic awareness and addressing rights violations. They will act as *Nyaya Samithi* secretaries, convening meetings and documenting resolutions. AI training will be provided to them.

(ix) **Training of *Nyaya Samithi* Members and Para- Legal Officers:** Law schools and colleges will provide training in ADR methods such as mediation and arbitration. Refresher programs will ensure members remain updated. Training will emphasize equity, natural justice, and AI applications.

(x) **Honorarium and Salary:** *Nyaya Samithi* members will receive Rs. 50 per hour as an honorarium per sitting. Para-Legal Officers’ salaries will be determined by the State Government.

(xi) **Appointment of *Nyaya Sevak*:** A *Nyaya Sevak*, a judicial officer, will be appointed to each *Gram Panchayat*’s *Nyaya Swaraj Gram Adhiniyam*. If the *Nyaya Samithi* cannot resolve a dispute, or if parties refuse to comply, they may approach the *Nyaya Sevak*. The *Nyaya Sevak*’s headquarters will be located at the *Gram Panchayat*.

(xii) **Qualifications for *Nyaya Sevak*:** Candidates must hold a Bachelor of Law degree and be selected through a State Legal Service Authority examination. Training will include six

months of compulsory field service in villages. Nyaya Sevaks will receive AI training for enhanced problem-solving.

(xiii) **Powers of Nyaya Sevak:** The *Nyaya Sevak* will supervise the *Nyaya Samithi*, submit reports to the State Legal Service Authority, hear appeals, and conduct trials in locations convenient for the disputants. Proceedings will follow an inquisitorial approach based on natural justice principles. The *Nyaya Sevak* and other officers will be considered public servants under Section 21 of the Indian Penal Code.

(xiv) **Police Assistance:** Local police officers must assist the Nyaya Swaraj Gram Adhiniyam as required. Any failure to cooperate will be treated as dereliction of duty under service rules.

(xv) **Judgement and Limitation Period:** To prevent justice delays, the *Nyaya Samithi* must resolve disputes within 15 days, while the *Nyaya Sevak* must decide within 30 days. No case will be dismissed due to the expiration of the limitation period.

(xvi) **Jurisdiction:** The *Nyaya Swaraj Gram Adhiniyam* will handle both civil and criminal matters, excluding serious, non-compoundable crimes. Civil cases will be limited to Rs. 5 lakhs unless both parties agree to a higher amount.

(xvii) **Special Jurisdiction:** The *Nyaya Swaraj Gram Adhiniyam* will have jurisdiction over offenses under specific laws, including the Cattle-Trespass Act 1871 (1 of 1871), Payment of Wages Act 1936 (4 of 1936), Minimum Wages Act 1948 (11 of 1948), Protection of Civil Rights Act 1955 (22 of 1955) and Domestic Violence Act 2005 (43 of 2005).

(xviii) **Civil Disputes within Jurisdiction:**

- **Land-related:** Tenancy issues, boundary disputes, water rights, and irrigation disputes.
- **Property:** Possession disputes, easements, and rights over village/farmhouses.
- **Family:** Marriage, divorce, child custody, inheritance.
- **Other:** Wage disputes, money suits, partnerships in land cultivation, forest resource rights, and complaints against local officials.

The *Nyaya Swaraj Gram Adhiniyam* represents a synthesis of traditional values and modern dispute resolution mechanisms, incorporating AI and ADR techniques. Ongoing discussions and deliberations will refine this system to address existing legal gaps effectively.

6. Conclusion

The future of Alternative Dispute Resolution (ADR) in Indian villages is promising, with AI-powered platforms revolutionizing dispute resolution. As digitalization expands access to justice, these platforms offer faster, cost-effective solutions to overcome the delays and inaccessibility of traditional courts. However, a strong regulatory framework is essential to ensure transparency, fairness, and ethical AI use. Addressing concerns like algorithmic bias, data privacy, and accountability will foster trust in AI-driven ADR. To uphold justice, AI systems must meet high standards of transparency and accountability. ADR thrives on compromise and reconciliation, ensuring fair resolutions. Embracing Nyaya Swaraj—a concept rooted in constitutional and democratic values—can help strengthen ADR mechanisms while ensuring justice remains inclusive. AI can enhance dispute resolution through data analysis, documentation, and outcome prediction, but human oversight is crucial to maintain fairness. A well-defined legal framework must regulate AI’s role in ADR, balancing innovation with ethical governance. As global regulatory efforts remain fragmented, collaboration among AI developers, mediators, ethicists, and legal professionals is key. Strengthening ADR mechanisms will make equal access to justice—the heart of India’s Constitution—a reality.

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