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A Novel Pathway to Justice Using Artificial Intelligence and Humans Oversight in Ai-Driven Alternative Dispute Resolution

GOKUL PRIYA N.[1] AND RISHI VARDHAN K.T.[2]

ABSTRACT

The development of legal systems has always been intertwined with the quest for justice. AI-driven alternative dispute resolution (ADR) is a new paradigm that is evolving in the 21st century. This revolutionary method promises to improve the court system's Efficiency, accessibility, and impartiality by revolutionizing conflict resolution with Artificial intelligence. In order to improve the efficiency, accessibility, and fairness of the dispute resolution process, this hybrid approach use of both the vital role of human expertise and empathy, as well as the strengths of AI technologies, such as machine learning and natural language processing.

In the current context, alternative dispute resolution (ADR) involving artificial Intelligence is necessary to provide a fair and impartial settlement between the disputing parties. However, it is evident that human emotions cannot be comprehended by an AI system, and India lacks the necessary infrastructure and resources to develop one. Additionally, even if the AI ADR system functions as intended, it will take time to train users on how to use it. And overall liability of the AI failure has been addressed. The goal of this research is to determine if AI-assisted ADR can take the role of human-assisted ADR. This article will go into the technology required, the ethical ramifications, and the usefulness of putting this paradigm into practice. It will also compare and contrast this approach with that of the majority of wealthy nations, like the USA, China, Europe, and so on.

Keyword*: artificial intelligence, alternate dispute resolution, human intervention.*

I. INTRODUCTION

At its core, law is the study of resolving disagreements between two or more parties. Efficient and successful conflict resolution is essential in modern legal systems. Courts have always been the main forum for settling legal disputes. But in recent decades, alternative dispute resolution (ADR) techniques have become more popular as acceptable replacements for traditional courts since it is time-consuming process. ADR includes a range of techniques that

[1] Author is a student of SASTRA deemed University, Thanjvaur, India.
[2] Author is a student of SASTRA deemed University, Thanjvaur, India.

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offer a more adaptable and informal approach to resolving disputes, including arbitration and mediation. By placing a higher priority on cooperation and mutual understanding, these strategies provide the parties more influence over the final result. ADR procedures are usually less confrontational, more private, and intended to maintain relationships while enabling speedier and more affordable outcomes.

The development of technology from crude implements in the Stone Age to complex artificial intelligence systems in the present day demonstrates humanity's unwavering quest for innovation. Although earlier discoveries set the stage for more recent developments, emerging technologies such as artificial intelligence are expanding the scope of possible applications. It is easier for us to see the significant effects that these technologies will have on our lives both now and in the future when we comprehend this trajectory. Artificial intelligence (AI) is revolutionizing the legal environment by offering speed and accuracy, automating research tasks, and transforming contract evaluation and prediction. This cutting-edge technology is revolutionizing the way legal practitioners approach their practice and engage with the legal system.

The article "A Novel Pathway to Justice: Using Artificial Intelligence and Human Oversight in AI-Driven Alternative Dispute Resolution (ADR)" investigates the use of AI to resolve conflicts outside of traditional courts. The core notion is that while AI may improve the speed, efficiency, and objectivity of ADR procedures by analysing massive quantities of data and creating answers, it still requires human intervention to handle complicated, emotional, and ethical elements of disagreements. Artificial intelligence (AI) is revolutionizing alternative dispute resolution (ADR) by providing new avenues for more effective and efficient conflict settlement. By automating repetitious duties, offering data-driven insights, and promoting discussion and negotiation between parties thus artificial intelligence (AI) systems can support mediators and arbitrators.

Consequently, the purpose of this essay is to recognize the artificial intelligence idea of ADR. It will also go into pertinent technologies, ethical considerations, and the practical application of this paradigm. This paper critically evaluates the viability of using artificial intelligence (AI) in alternative dispute resolution (ADR) in India, focusing on the advantages and disadvantages of this cutting-edge technology. Finally, some recommendations on the best application of AI in ODR are suggested. The conclusion is that a high level of supervision and regulation will be necessary to prevent issues with AI in ODR.

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(A) Review of literature:

Varsha. Prabhavathi **(2023) "The need of artificial intelligence in the field of alternate dispute mechanism" Russian law journal Volume XI Issue 3[3]**

The author has done an extensive study on this topic, the author mainly focused on implementing artificial intelligence in the field of alternate dispute mechanism and discussed various advantages and disadvantages of artificial intelligence in the field of decision making. The author concluded by stating that artificial intelligence (AI) has a number of benefits and drawbacks, and that with careful handling, the disadvantages can be turned into advantages and the technology can establish itself in conflict resolution forums not only in India but throughout the world. It has been determined that, in the current state of affairs, AI is not the best tool for resolving disputes because there is a high likelihood that the system will act unfairly, which it may eventually even eliminate with further research. Therefore in light of the present circumstances, AI is not the best instrument for resolving disputes in the alternative dispute process. According to the author, artificial intelligence may be a very useful tool in resolving disputes when it is evident that it is necessary to identify a winner and a loser. However, since this is not the case in other conflict, artificial intelligence cannot completely replace humans in dispute resolution.

Hibah Alesa (2022) ***"*****The role of artificial intelligence in online dispute resolution: A brief and critical overview"[4]**

This paper debated the function of AI in online dispute resolution (ODR) and the problems that may occur. The author looks at how AI is developing in ODR, how people interact with machines, and how AI affects people's ability to use the legal system. The author discusses how artificial intelligence (AI) in online dispute resolution (ODR) is viewed as a viable remedy for judicial system bottlenecks and to streamline ODR procedures. The author discusses the worries that AI would result in a two-tiered conflict resolution system, where wealthy firms would have more access to cutting-edge tools. It is critical to keep an eye on how AI-based ODR develops to avoid any unfavourable effects on people's ability to use the legal system, particularly for those who are less wealthy. For AI-based ODR to be a useful and efficient tool for resolving disputes, access to justice requirements must be followed. Thus, the author draws the conclusion to overcome the concerns with AI in ODR, monitoring and regulation would be

[3] VARSHA, PRABHAVATHI N, THE NEED OF ARITIFICIAL INTELLIGENCE IN THE FIELD OF ALTERNATE DISPUTE MECHANISM, https://doi.org/10.52783/rlj.v11i3.2252
[4] Hibah Alessa, The role of Artificial Intelligence in Online Dispute Resolution: A brief and critical overview, https://doi.org/10.1080/13600834.2022.2088060

required. Finally, the author has given suggestions for the future application of AI in ODR.

Estonian judge Kai harmand **(2023) "AI System impacts on the recognition of foreign judgements: the case of Estonia, Juridica international**[5]

This paper addresses the concept of a "robot judge," concentrating on the use of artificial intelligence in legal studies. We must defend fundamental rights in this context, paying special attention to the vital problem of trust in the judicial system. The author of the study concluded that if an AI system utilized in the judiciary is unable to achieve the requirements for trustworthiness, a judgment may be viewed as being against the public order or, at the very least, inconsistent with the notion of a fair trial.

Sunil Kumar Srivastava (2023) **"AI for improving justice delivery: international scenario, potential application & way forward for India" informatica 47** [6]

The author has done an extensive work in his article where he discusses about the tremendous pressure to the Indian courts due to larger number of pending cases and the article questions whether artificial intelligence can be used in order to improve the process of delivering justice in India And in order Make This article more informative A comprehensive literature survey was conducted In the countries of Australia Brazil Canada China UK and USA the article suggest a way forward plan for facilitating development and deployment of artificial intelligence applications in this domain in India the authors had concluded by conveying that a fully autonomous system in justice delivery is not achievable with the current available Technology but it can be used to increase the productivity of the court officers and judges the author estate those some artificial intelligence applications are being developed in India for improving justice delivery there is a long way to go to achieve the goal the author has suggested that more than using AI in the field of decision making it can be used for making a proper data bases of information relating to the pending cases and it also discusses and institutional mechanism for this purpose which may be established to co-ordinate the activities of the legal proceeding.

Judge eyad ayed alsamhan (2023)[7] **"AI and online dispute resolution: Mediation" Journal of scientific development for studies and research (ISSN 2709-1635) Vol 4 issue 13 pg. 283-300**

[5] Kai Härmand, AI Systems' Impact on the Recognition of Foreign Judgements: The Case of Estonia, https://doi.org/10.12697/JI.2023.32.09
[6] Sunil Kumar Srivastava, AI for Improving Justice Delivery: International Scenario, Potential Applications & Way Forward for India, https://doi.org/10.31449/inf.v47i5.4361
[7] Eyad Alsamhan, https://orcid.org/0000-0001-6227-2667

This article addresses the problem of replacing humans in dispute resolution and the article specially made by the author in the context of Trans National disputes to artificial intelligence instead of human inference moreover the article questions the responsibility of artificial intelligence in case of any error in the decision-making process so the AI dispute resolution may provide a more efficient and cause effective way to resolve dispute and well programmed AI can give overall effectiveness and efficiency in settlements and resolving the disputes. According to the author, AI, in contrast to humans, can provide parties to a conflict with more innovative and practical solutions. The author concluded that artificial intelligence is progressing significantly, and the study suggests that there is a good likelihood that AI will eventually replace traditional conflict resolution procedures with AI distributor solutions. The author goes on to defend the use of AI as a human substitute as it is prone to bias and prejudice, which may influence how a disagreement is resolved. The author concludes that replacing humans with AI will be advantageous to all parties engaged in the disagreement since AI is not affected by emotions or personal relationships, making it a more objective and impartial party in the conflict resolution process. Furthermore, AI will expedite the settlement process and produce more effective and efficient results. This article strongly advocates for the use of artificial intelligence in lieu of humans in the field of alternative conflict resolution.

Ngo nguyen thao vy 2023[8] **"AI implementation in ODR: a game changer or a troublemaker of data protection" sciendo veitnamese journal of legal sciences, vol 08 no 01 pg. 01 to 24**

The author has done a great deal of research in this article. He says that AI lowers risk and boosts productivity, which not only expedites the ADR process but also encourages settlement. AI's effects and risks have also been covered in this article. The paper examines the challenges of striking a compromise between the need for effective dispute resolution enabled by AI and the security of personal data. According to the author, the legislative framework for protecting personal data and cyber security is still developing. The AI is described by the author as a "black box" as it is unable to explain how or why it arrived at a specific conclusion. The complexity of an AI arbitrator's decision-making process may also make it difficult for parties to identify any potential grounds for challenging the award. Meanwhile, there are currently no minimum technical standards defined in arbitration laws or arbitration rules regarding cyber security measures that all parties involved in a temporary set-up must comply with. The author concludes that, in the current period of rapid technological innovation, legislators must

[8] Ngo Nguyen Thao Vy, AI Implementation in ODR: A Game-Changer or a Troublemaker of Data Protection, https://doi.org/10.2478/vjls-2023-0001

carefully prepare when developing legislation to guarantee that they are compatible and effective.

(B) Research Problem

According to several studies, artificial intelligence is capable of making judgments rapidly and storing vast volumes of data; yet, there is a significant distinction between making a decision and coming to an agreement. Artificial intelligence An Alternative Dispute Resolution is obliged to go beyond decision-making to settlement, and neither set says how such a process can be performed by artificial intelligence that is ignorant of human emotions.[9]

(C) Research Objective

This article's primary objective is to investigate how artificial intelligence may be used in alternative dispute resolution procedures. The goal of the research is to strike a balance between the potential benefits of artificial intelligence (AI), such as enhanced productivity and cost - effectiveness, and the risks involved, such as issues about data privacy and the possibility of bias in AI decision-making. The primary purpose of this study is to determine if India can achieve an AI-driven ADR while maintaining economic stability, as well as to compare its applications to those of other countries and to investigate how AI has been tailored to meet the diverse needs, including sensing of human emotions, language barriers and other issues to reach an amicable solution in the process of ADR. Thus this paper mainly addresses how AI driven system be effectively integrated into ADR mechanisms to enhance, efficiency and accuracy, without compromising the neutrality and fairness of the decision- making process.

(D) Research Question

1. In an alternative dispute resolution, who can we hold accountable or liable for the crime or error committed by artificial intelligence if it makes a wrongful action?
2. Whether artificial intelligence can sense human emotions and reach an alternative dispute resolution settlement accordingly?
3. Artificial intelligence is used in legal departments and legal proceedings in countries like Europe China USA, Is it possible to bring such technologies to India whether India has such economic and technological facilities?[10]

(E) Research Hypothesis

[9] Reuben Binns, et al. Its reducing a human being to a percentage; perception of justice in algorithmic decision, CHI conference on Human factor in computing system pp 1 to 14 (Apl 2018).
[10] Aditi Prabu , Artificial intelligence in the context of the Indian legal Profession judicial system , bar and bench (2023).

If artificial intelligence takes over the ADR procedures in India, various aspects would determine its efficacy, efficiency, and overall circumstances. Several potential benefits of artificial intelligence in the ADR of process would range from cost reduction, time savings, reduction in human bias, and speedy process, among others. On the other hand, it has several impacts, including data privacy, trust and privacy, limited technology infrastructure, and a number of other ethical concerns. [11]

Artificial intelligence must abide by specific rules in India's arbitration process; to do this, the government must modify current legislation and enact new rules to allow AI to participate in the arbitration process. Huge technological investments are needed for the digital infrastructure, particularly in rural areas where ensuring widespread internet connectivity and access to digital tools is essential for the nationwide distribution of AI-driven ADR mechanism. AI in the ADR process also requires training and adaptation.

(F) Research Methodology

The research methodology used in this study, known as normative juridical research, focuses solely on laws, rules, and regulations that have been passed by the body that makes laws. Doctrinal research forms the basis of the research paper.

(G) Research Method

The systematic review approach serves as the foundation for our investigation. Using a systematic review technique, data is extracted and interpreted from published research on the subject, and the interpretation is then further analysed, described, and summarized to produce a refined conclusion.

The sources collected herein are only through literature relied upon and its data are used through the deductive logical pattern.

(H) Scope and limitations of the article

In order to address the application of AI to the ADR mechanism and its implications, the paper primarily relies on secondary data from the literature, empirical studies, and legal frameworks; however, it does not collect enough primary data through surveys or interviews with law enforcement officials. This restricts the paper's comprehension of the many practical difficulties it faces. This study has incorporated data from a cumulative analysis of several authors, which has been used with careful consideration. The study does not go into much depth

[11] The Adoption of Artificial intelligence In Human resources Management practices, International Journal of Information Management Data insights Volume 4, issue 1 (2024) https://doi.org/10.1016/j.jjimei.2023.100208.

on algorithmic design specifics or the technical components of developing AI.

II. DEFINITIONS

The definition of essential words in AI and ODR is complicated because of their novelty. Therefore, to properly reference the analysis in this work, it is imperative that definitions of ODR and AI be clarified.

(A) What is Artificial Intelligence?

The innovation of AI is distinct, and it has no proper definitions. This is due to the fact that AI may grow by employing clever methods or by acting cleverly. In computer science, artificial intelligence (AI) is a multidisciplinary area that focuses on developing computers that can carry out activities that normally require human intellect. These include learning, seeing, thinking, solving problems, and interpreting language. AI is the umbrella term for a variety of technologies that allow robots to mimic human cognitive processes, including robotics, machine learning, and natural language processing. "A technical and scientific field devoted to the engineered systems that generate outputs such as content, forecasts, recommendations, or decisions for a given set of human-defined objectives" is how the International Organization for Standardization (ISO) defines artificial intelligence. But AI is dynamic by nature, meaning it is always changing[12]. Consequently, a precise definition is probably only going to be appropriate for a limited amount of time. This study views artificial intelligence as an emerging technology that is essentially unrestrained by theory. Even if the future is unpredictable, it is still debatable whether or not it is feasible to look at present ODR and AI trends and talk about potential future developments.[13]

(B) What is Alternate Dispute Resolution?

The term Alternative Dispute Resolution (ADR) describes a variety of procedures that give parties a different way to settle conflicts outside going to court. ADR's adaptability, secrecy, and capacity to customize procedures to the particular requirements of the parties concerned are its defining characteristics. An advancement of alternative dispute resolution (ADR) that uses technology to resolve disputes is called online dispute resolution (ODR). Information and communication technology (ICT) technologies are used by ODR to help parties negotiate and reach a settlement without having to be present in person. This strategy has gained popularity because it may improve accessibility, lower expenses, and expedite the settlement process.

[12] ISO/IEC 222989:2022
[13] John Mc Carthy, what is Artifical intelligence? (2007) (http://jmc.stanford.edu/artificial-intelligence/whatis-ai/index.html).

ODR is becoming more and more popular in both domestic and international dispute resolution since it combines contemporary digital technologies with legal processes. ODR has been more and more well-known since 1990[14]. ODR was widely used by businesses by 1999. ODR was initially used in the United States of America.26 Since then, ODR has proliferated. EBay, Square Trade, Cyber Settle, and several other commercial service providers have all utilized it. ODR became more popular during the COVID-19 epidemic because online processes allowed judicial systems and dispute resolution organizations to continue operating under lockdowns and limitations.[15]

III. ARTIFICIAL INTELLIGENCE AND LEGAL PROCEEDINGS

In India, artificial intelligence AI is gradually being introduced into the legal proceedings though its adaptation is still in the early stages. AI tools like Manu Patra and SCC online assist lawyers in researching case law and statutes and presidents most effectively and efficiently. India has been working on digitalizing its judicial process through e- Court projects which aim to automatic case filing and scheduling etc. Some of the start-ups like jus Mundi and Lawsikho using AI to provide legal advice and automated contract reviews which helps the lawyers and clients to navigate legal complexities. Overall, AI holds the potential to increase efficiency and reduce delays in India's legal system, but its broader application, especially in judicial decision-making, is yet to be fully realized.

(A) Navigating ADR with AI

Tasks that normally need human intellect can be completed by the artificial intelligence. AI is developing in all fields like health care, finance, fraud detention etc. Arbitration is a kind of voluntary conflict settlement in which parties or arbitration organizations appoint impartial arbiters who evaluate the evidence, hear arguments, and provide legally binding rulings in a less formal and frequently private context. It is frequently used in a variety of settings, such as labour disputes, business conflicts, and international commerce. It provides a more specialized and effective substitute for litigation with binding decisions, frequently resulting from agreements made in contracts between the involved parties.

Combining AI with the ADR process requires a number of tools, legislation, and technological advancements. Although the use of AI in Indian arbitration is still in its infancy, there are several potential advantages. Arbitration may be made more accessible, economical, and

[14] Kaolina Mania, Online dispute resolution: the future of Justice, International comparative jurisprudence Volume 1 issue 1 page 76-86 (2015) https://doi.org/10.1016/j.icj.2015.10.006.
[15] NITI Aayog expert committee on ODR report Designing the Future of Dispute Resolution the ODR policy plan for India (October 2020).

efficient while preserving the fairness and integrity of the process by utilizing AI. However, in order to solve the issues and concerns, it is imperative that AI be used properly and with the necessary safeguards. [16]

(B) How AI can be Incorporated in ADR Mechanism

AI is used by ADR mechanisms in numerous different ways in contemporary life. Artificial Intelligence (AI) can support arbitrators in their decision-making process by aiding in the analysis of the evidence and offering recommendations. AI may be used to predict case outcomes by analysing arbitrators' rulings and a variety of historical or previous records. This aids in the parties' ability to understand the advantages and disadvantages of using ADR techniques. As a result, AI can evaluate documents and analyse cases without requiring costly equipment or a lot of time. TAR is a technique that effectively evaluates and analyses enormous volumes of data and documents in court proceedings using AI and machine learning algorithms.[17]

(C) AI replacing human beings in ADR mechanism

The possibility of AI taking the place of humans in the legal field in India attracts attention but also raises worries. Even if AI has started to make many aspects of legal work simpler, it is doubtful that AI will completely replace human involvement in the legal system, especially when it comes to complex legal reasoning and judicial decision-making. In the future, it is expected that it is not feasible to fully replace humans in the legal system, especially when it comes to making decisions and complex legal thinking, even if AI is predicted to continue automating various tasks in India like research, document review, and court administration. AI will most likely supplement rather than replace human capacities, with an emphasis on increasing efficiency while keeping justice human centres. AI is considered unfit for handling core legal proceeding in India due to several critical limitations and concerns.

While AI can support and enhance human arbitrators' abilities, it cannot yet completely replace them. In particular, the human element is still crucial for controlling emotions and guaranteeing impartiality throughout the arbitration procedure. Artificial intelligence (AI) offers greater benefits than human arbitrators, including increased objectivity, cost savings, and efficiency gains in arbitration. However, despite its strengths and efficiency, there are still fundamental limitations to address for a more effective method of justice delivery.

[16] Ethan Katsh and Orna Rabinovich- Einy, digital justice: technology and the internet of dispute, oxford university press, pp. 45-65, (2017).
[17] George socha, What is technology assisted review,(2021), https://www.revealdata.com/blog/technology-assisted-review.

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AI systems don't have the cognitive capacity to understand the ethical dilemmas or the legal intricacies that are present in many conflicts; instead, they function primarily on statistical analysis and historical data. AI is incapable of understanding human emotions which place a major role in the settlement process. There's a chance that AI will reinforce pre-existing biases in historical data, producing unjust results. The whole AI works on the basis of the way it programmed and if the programmer feed it with biased information the outcome will also be biased so, AI replacing arbitrators thus needs additional oversight and regulations.

IV. AI IN JUDGEMENT DELIVERY AND SETTLEMENT FRAMING

AI can make decisions by analysing data, recognizing trends, and providing suggestions based on complex algorithms, machine learning models, and historical precedents. It excels in processing large volumes of data rapidly and objectively, making it useful in fields such as legal research, financial analysis, and predicting outcomes based on comparable situations. However, AI's function is restricted to offering insights and supporting information; it cannot arbitrate or decide disputes between parties on its own. Arbitration and settlements are processes for resolving disputes that are heavily influenced by human judgment, legal frameworks, ethical concerns, and social dynamics. One major constraint of AI in this arena is a lack of legal authority. Human arbitrators and mediators are certified legal experts whose rulings are legally binding. However, AI lacks the legal standing and qualifications to make choices with the same legal weight. This is especially important in arbitration, where rulings must frequently meet legal criteria and be enforceable in court.

Furthermore, AI is unable to completely supply the contextual understanding needed for arbitration. Parties to a dispute frequently deal with intricate interpersonal dynamics, feelings, and cultural quirks that affect how things turn out. Fair dispute resolution depends on human arbitrators' ability to read nonverbal clues, identify underlying tensions, and take into account the psychological and emotional aspects of a disagreement. In contrast, artificial intelligence (AI) cannot "read between the lines" or adjust to the fluidity of human interactions; instead, it is restricted to the information it is given. Decisions are made only on the basis of the facts provided; personal or emotional insights, which are frequently crucial to arbitration, are absent.

Another significant drawback is that AI is ill-suited to manage the moral and ethical decisions that arbitration frequently necessitates. AI can apply objective laws to a given scenario, but it is unable to take into consideration subjective values such as justice, fairness, or empathy. Conversely, human arbitrators are supposed to take into account the human aspects of a dispute in addition to the word and spirit of the law when making their decision. They attempt to reach

choices that are not only legally sound but also ethically and socially acceptable to all sides, taking into account the emotional effect of each option. It is unrealistic to expect AI to provide outcomes that are viewed as just or compassionate since it lacks this moral thinking.

Moreover, arbitration frequently calls for a level of flexibility and adaptability that AI cannot provide. Human arbitrators are capable of mediating disputes between parties, making concessions, and coming up with solutions that are unique to each situation. As the disagreement develops, they can also take outside influences into account and dynamically modify their strategy. AI, on the other hand, uses present frameworks for decision-making and predetermined algorithms. It doesn't have the adaptability to change its rulings in response to the parties' changing demands or to participate in the kind of original problem-solving that settlement talks sometimes call for. And then, there's the responsibility question. Human arbitrators are answerable for their choices and may be made to answer for them in court or through appeals procedures. In addition to guaranteeing openness and addressing any biases or mistakes, they are obliged to defend their decisions. In contrast, artificial intelligence (AI) functions autonomously and bears no culpability for the results it generates. Significant ethical and legal issues are raised since there is no clear way to hold AI responsible when it makes a choice that is unfair or ignores important information.

To summarise, while AI may be a useful aid in the arbitration process, such as by analysing data, discovering legal precedents, forecasting likely results, and automating document review, it cannot replace human arbitrators or mediators. AI's shortcomings in comprehending human emotions, moral reasoning, adaptability, and legal responsibility render it incapable of handling the nuanced and complicated nature of arbitration or settlement on its own. Thus, while AI may help with decision-making, the ultimate authority and accountability must stay with human specialists who can account for all of the aspects that lead to a fair and just outcome.

V. USING AI IN ADR MECHANSIM: INTERNATIONAL ASPECTS

(A) AI in India (ADR)

The use of Artificial Intelligence (AI) in arbitration is growing internationally, with each country taking a unique approach based on technological breakthroughs, regulatory frameworks, and legal traditions. Comparing the level of AI in arbitration in India to other countries reveals both similarities and variations in acceptance, implementation, and obstacles. In Judicial Reform and AI Integration, The Indian legal system is experiencing major delays owing to case backlogs. The NITI Aayog has emphasized the use of AI in legal settings, including arbitration, case management, forecasting case outcomes, and legal research,

although full-scale application is still restricted.

Several Indian arbitration institutes, including the Mumbai Centre for International Arbitration (MCIA) and the Delhi International Arbitration Centre (DIAC), are looking into AI technologies for document review, evidence analysis, and procedural tasks. Artificial intelligence systems such as LegalMind and Manupatra are already in use for legal research. Thus arbitration procedures not being subject to AI-specific limitations. Arbitration and Conciliation Act (1996) controls arbitration in India, however, it does not yet include AI-specific elements. Thus AI adoption is limited by concerns over transparency, bias in decision-making algorithms, and reliability of outcomes.

(B) AI in the European Union (ADR)

Artificial Intelligence (AI) in Alternative Dispute Resolution (ADR) is becoming more and more popular in Europe, particularly in fields like arbitration, mediation, and negotiation. Europe is incorporating AI technologies more and more to increase efficiency, facilitate alternative dispute resolution (ADR), and promote justice access. However, the focus in Europe is on ensuring that the use of AI is compliant with ethical standards and regulatory frameworks, given the European Artificial Intelligence Act and other legislative limits. When it comes to the use of AI for arbitration, the EU is more conservative than China or the US because of its emphasis on AI ethics, which is demonstrated by frameworks like the European Union Artificial Intelligence Act, which aim to ensure accountability, transparency, and non-discrimination in AI systems. EU countries are investigating the use of AI for case management and document analysis in arbitration, as opposed to rendering comprehensive decisions. This is especially the case for France and Germany.[18]

Artificial intelligence (AI)-driven negotiation solutions facilitate direct conflict resolution between parties via online platforms by offering recommendations derived from past results and legal precedents. AI technologies, for instance, may make settlement offers and dynamically modify them in reaction to each party's answer. An EU ODR Platform is run by the European Commission and is intended to assist businesses and customers in resolving disputes pertaining to internet purchases. Although complex AI is not yet used in the platform itself, attempts are being made to integrate increasingly sophisticated AI technologies to improve process efficiency.

AI is used by platforms such as Modria, which was established in the United States and then

[18]Clyde & co's AI and Arbitration: the German perspective,Clyde & co's (15th feb 2024) https://www.clydeco.com/en/insights/2024/02/ai-in-arbitration-germany.

adopted by ADR organisations in Europe, to settle conflicts between customers and companies. Customers can file claims using these platforms, and the AI provides automatic remedies based on precedent and legal requirements. In the EU, cross-border consumer disputes are facilitated via the ECC-Net. Artificial intelligence (AI) is being investigated for handling large volume, low complexity issues, particularly e-commerce scenarios, where AI may provide solutions based on precedents and regulatory requirements.

(C) AI in United States (ADR)

In terms of utilising AI in court proceedings, particularly arbitration, the United States is leading the way. AI is being included by prestigious arbitral organisations like the American Arbitration Association (AAA) to expedite arbitration procedures.[19] Contract evaluation, document creation, evidence finding, and case outcome prediction are among the duties that AI systems assist with. An active LegalTech ecosystem exists in the United States. Arbitrators are assisted in making data-driven decisions by AI-powered case analytics and legal research tools like ROSS Intelligence and Lex Machina.

The general success of AI in arbitration in the United States has been hampered by many issues. Algorithmic bias is a major problem, whereby AI systems that have been educated on previous data may continue to provide prejudiced results, particularly in delicate domains like consumer disputes or employment. Being unable to comprehend how AI makes judgements, the lack of transparency, also known as the "black box problem," further erodes confidence. The legal profession's resistance to AI replacing human judgment and concerns about job loss have also hampered adoption. Another challenge is AI's limited ability to handle complex legal reasoning and adjust to specific situations, as arbitration often requires complex human decision-making.[20]

Furthermore, the application of AI in arbitration is not well regulated by legislation, which creates ambiguity and raises moral questions regarding responsibility and justice. Parties are reluctant to depend on AI for delicate arbitration disputes as a result of public scepticism and worries about data security and privacy. Not to mention, many AI technologies have overpromised in terms of speed, accuracy, and cost reductions, and are still in their infancy. Users have expressed disappointment when these products don't live up to their expectations in real-world scenarios.

[19] Kendal Enz, Artificial Intelligence: A new Horizon in Arbitration and Mediation, American Arbitration Association (2023) https://hbr.org/2019/10/what-do-we-do-about-the-biases-in-ai.
[20] Schwartz and Eric, Artificial intelligence in dispute resolution: the view from the United states, Harvard negotiation law review, vol 25, no. 1, pp. 98-116, (2020).

(D) AI in China (ADR)

China is a pioneer in the use of artificial intelligence (AI) in arbitration processes, partly because of its larger national goal to adopt digital transformation and become the global leader in AI innovation.

Artificial intelligence (AI) has been used in arbitration to improve automation and efficiency, especially when managing high caseloads in industries like trade and commercial disputes. The application of AI-driven platforms by organisations like the China International Economic and Trade Arbitration Commission (CIETAC) is one such example.[21] By automating repetitive processes like document analysis, evidence assessment, and case management, these platforms greatly minimise administrative costs and expedite arbitration hearings. With the advent of online dispute resolution (ODR) platforms like WeChat Court and Smart Court, parties may now settle disagreements virtually, frequently avoiding the need for in-person hearings. These systems use AI to enhance communication between conflicting parties, offer viable settlements, and, in some situations, completely automate the negotiating process. China has increased the dependability of these platforms by introducing blockchain technology, which is used to authenticate and safeguard the validity of documents and evidence, providing transparency and confidence to the AI-driven arbitration process.[22]

Despite these technical developments, the application of artificial intelligence in arbitration in China has faced considerable obstacles. A key problem is the potential of algorithmic bias, which occurs when AI systems rely on previous data that may represent outdated or biased legal judgments. This raises worries about fairness, particularly in situations involving vulnerable parties or innovative legal difficulties. Furthermore, AI systems frequently operate as "black boxes," which means that the decision-making process is not completely transparent, eroding confidence. In arbitration, where parties seek clear explanations for conclusions, a lack of openness is especially troublesome. While AI has proved effective in automating jobs and increasing procedural efficiency, there is still a need for human supervision, especially when complicated legal reasoning or context-specific judgements are necessary. Many parties and arbitrators remain skeptical about relying solely on AI for decision-making, as it lacks the ability to interpret nuanced legal arguments and apply moral or ethical judgment in the same way a human arbitrator can.

[21] Professor Loukas Mistelis and Professor Kun fan, Jus Mundi Arbitration Review Volume 1 issue 1 (2024) https://jusmundi.com.
[22] Astha Madan Grover, Artificial intelligence and the future of Online dispute resolution in India, https://jgu.edu.in/mappingADR/artificial-intelligence-and-the-future-of-online-dispute-resolution-in-india/.

Furthermore, China's quick use of AI in arbitration has overtaken the creation of comprehensive regulatory and ethical frameworks. While technology has enhanced the speed and efficiency of dispute resolution, there are still worries regarding AI system accountability and the preservation of parties' legal rights. The lack of established ethical rules for AI usage in arbitration raises concerns about how to maintain openness, impartiality, and due process. Despite these hurdles, China's use of AI in arbitration has been widely regarded as a success because to its capacity to manage massive case numbers, minimise administrative workload, and speed up arbitration processes. However, its long-term effectiveness will be determined by addressing recurring concerns about fairness, transparency, and the ethical implications of using AI in legal decision-making.

(E) Comparison Study of Use of AI in ADR in India and Europe, USA & China

The use of artificial intelligence (AI) in arbitration has been increasingly popular in Europe, China, and the USA because of their advanced technology infrastructure, regulatory frameworks, and eagerness to adopt new ideas in the legal and corporate sectors. These areas have made significant investments in cutting-edge digital technologies, such as dependable cloud computing, AI systems, and internet access, which have increased the viability of integrating AI into arbitration. For instance, the European Union AI Act and other legislative frameworks in Europe guarantee ethical norms and openness while promoting the use of AI. The use of blockchain technology for safe evidence verification and AI-driven online dispute resolution (ODR) platforms like WeChat Court have significantly expedited the arbitration process in China. Similarly, in the USA, AI is being utilized to automate legal research, case management, and document review, which enhances efficiency and reduces costs.[23]

India, on the other hand, has a number of obstacles that prevent AI from being widely used in arbitration. The nation's technology infrastructure is still growing, particularly in rural areas where access to cutting-edge digital tools and reliable internet is scarce. The nationwide implementation of AI-driven systems is hampered by this lack of infrastructure. Concerns of prejudice, justice, and accountability are further raised by the fact that India does not yet have a thorough regulatory framework controlling the use of AI in court proceedings. Artificial intelligence (AI) is governed by organized standards in some places, such as the USA and Europe. These guidelines make sure that systems are transparent and do not violate people's

[23] Rachel E stern, et al, Automating Fairness? Artificial Intelligence in the Chinese court, Columbia law school (2021) https://scholarship.law.columbia.edu/faculty_scholarship/2940?utm_source=scholarship.law.columbia.edu%2Ffaculty_scholarship%2F2940&utm_medium=PDF&utm_campaign=PDFCoverPages

rights. However, India is still striving to create these frameworks, which makes using AI for important activities such as arbitration[24]

The lack of AI expertise and decreased faith in technology among Indian law professionals is another significant obstacle. Due to their direct experience of how AI may increase efficiency without necessarily compromising justice, legal professionals in nations like the USA and China have a greater degree of familiarity and confidence with AI. In India, on the other hand, arbitrators are typically seen as human beings with experience, discretion, and subtle judgment. Many Indian attorneys believe AI won't be able to understand the legal and cultural intricacies that commonly arise in Indian arbitration disputes, thus they are hesitant to allow AI replace human decision-making in professions involving subjective judgment.

Furthermore, compared to countries like the USA and China, India's legal tech industry has yet to experience the same level of innovation and investment. Artificial intelligence (AI)-driven legal solutions that speed up and improve the accuracy of case processing have received substantial investment in these fields. Conversely, India's legal tech market is still very young, with limited funding and scant AI products developed specifically for the country's courts. The deployment of AI in arbitration is further delayed by the absence of customized solutions. Judicial priorities in India also matter. Due to a significant backlog of cases, the nation's judicial system frequently prioritizes enhancing basic court facilities and cutting down on delays above investing in cutting-edge technology like artificial intelligence.

In conclusion, while Europe, China, and the United States have made tremendous progress in using AI for arbitration due to technological preparedness, legislative frameworks, and faith in innovation, India confronts various challenges. These include undeveloped infrastructure, a lack of regulatory clarity, cultural opposition, and worries about fairness and prejudice. To make AI in arbitration a reality in India, significant investments in technology, the creation of specific AI tools, and the building of an ethical and legal regulatory framework would be required.

VI. LIABILITIES OF AI IN CASE OF ERROR IN ADR PROCESS

Artificial intelligence typically lacks all of the traits that distinguish humans from other species. Thus, one cannot directly hold artificial intelligence accountable for its mistakes or shortcomings. [25]Furthermore, since alternative dispute resolution (ADR) does not judge who

[24] Aditi Prabhu, Artificial intelligence in the context of the Indian legal profession, Bar and Bench, 12 Aug 2023.
[25]J. E. (Hans). Korteling, et al , Human vs. Artificial intelligence Human- versus Artificial Intelligence, PMC , PMCID: PMC8108480 PMID: 33981990 (2021).

is right or wrong or whether someone is guilty or innocent, arbitrators and mediators in India have never been held accountable for their conclusions. ADR primarily concentrates on reaching a settlement and compromise between the disputing parties such that the arbitrator or mediator is usually not held accountable.

Similarly, as artificial intelligence does not have much room to take over the ADR process, its culpability and accountability will always be a contentious or developing issue if it were to take over the entire process. There isn't any specific law that governs India's AI system operates differently than that of Europe, China, and the US.[26] Determining AI's accountability in the event of malfunctions or errors is necessary, even if arbitrators and mediators are not held accountable and the arbitration ruling is final and binding.

First and foremost, regulations governing AI's operation in India must be created. Next In a fault-based system, the AI system's programmer may be held accountable for failing to meet the standard of care's requirements, and the owner may be compelled to take effective safety measures if lawmakers and quotes accurately identify the duty of care. This could potentially regulate the AI system's accountability and liability.

(A) Recommendation

AI has a huge potential to improve access to justice, increase efficiency, and simplify workflows in India's Alternative Dispute Resolution (ADR) procedure. By managing case intake, document submission, and offering recommended solutions based on historical data, AI may automate the first phases of dispute resolution. This will help arbitrators and mediators by offering pertinent legal precedents and possible settlements. In India's linguistically varied terrain, AI-driven solutions, especially in Online Dispute Resolution (ODR), may be expanded to offer real-time multilingual support and enhance communication between disputing parties. AI can prepare court documents, evaluate evidence, and forecast results in arbitrations based on past patterns, but human arbitrators still have the last say and can only use AI as a decision support tool.

Transparency must be guaranteed by ethical standards, and human oversight is still essential, especially when taking cultural, ethical, and emotional factors into account in conflicts. AI algorithms need to be transparent, bias-free, and equipped with procedures to reduce any innate bias in order to build trust. To properly use these technologies in their work, ADR experts need also undergo AI training. Public awareness campaigns can also contribute to the development

[26] Rajat Sethi and Deborshi Barat, INSIGHTS Regulating Artificial Intelligence in India: Challenges and Considerations, S & R associates (5th July 2023).

of public confidence in AI-driven procedures. ADR requires secrecy, thus using block chain or other secure technologies to ensure data privacy and security is crucial. Government-funded pilot projects can evaluate AI's efficacy in particular industries, and long-term success will depend on the development of a strong legislative framework to facilitate AI's integration. In the end, AI can transform alternative dispute resolution (ADR) by cutting down on case backlogs and speeding up resolution; but, human oversight and moral judgement must continue to be a crucial part of the process to guarantee that technology augments human decision-making rather than replacing it.

VII. CONCLUSION

This study critically evaluated AI's role in the ADR process and how it can grow in the future to improve AI's effectiveness in resolving legal disputes. Artificial Intelligence will be a big part of the transformation in the legal profession. Since AI can do more efficient work automatically thus it will be helpful in dispute resolution but it has its limitations also. Although AI has both benefits and drawbacks, it may be able to successfully turn some of these drawbacks into advantages and make a strong presence in dispute resolution forums not just in India but worldwide by carefully weighing some of the following recommendations. The intricate and multifaceted nature of conflict resolution cannot be entirely replaced by AI, even if it can significantly improve the effectiveness and accessibility of the Alternative Dispute Resolution (ADR) process in India. Deep human understanding, sensitivity, and ethical concerns that go beyond data-driven forecasts are frequently needed for ADR. While artificial intelligence (AI) may help with decision support, evidence analysis, and administrative work automation, human mediators and arbitrators are essential for deciphering the social, cultural, and emotional dimensions of disagreements.[27]

Ongoing human oversight is necessary due to transparency, potential biases in algorithms, and the ethical implications of AI decisions. Because of this, artificial intelligence (AI) can be a helpful tool to augment human expertise in alternative dispute resolution (ADR), but it cannot replace the critical judgment, empathy, and impartiality of human specialists in the settlement process.

This article provides a thorough overview of the global use of AI and highlights some of its limitations when it comes to resolving conflicts. Therefore, relying solely on the AI system without frequent and regular examination might be harmful. If ADR must be used in

[27] Daniel Bron, The role of AI in dispute resolution: Transforming Mediation and Arbitration Practices, (8th June 2023) https://www.linkedin.com/pulse/role-ai-dispute-resolution-transforming-mediation-arbitration.

conjunction with AI, it should be completely regulated and subject to the enactment of relevant laws. [28] Ideally, this article has given the reader an overview of online alternative dispute resolution (ADR) and algorithm-based awards, as well as some insight into the legal concerns surrounding this novel approach to conflict resolution.

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[28] Ryan Abbott and Brinson S Elliott, Putting the Artificial intelligence in Alternative dispute resolution: How AI rules will become ADR rules amicus curiae, series 2, Vol 4 No 3, 685-706(2023) https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.jamsadr.com/files/uploads/documents/articles/abbott-ryan-amicuscuriae-putting-the-artificial-07-2023.pdf&ved=2ahUKEwi8xOW795yJAxVGcGwGHeOMPMoQFnoECB0QBg&usg=AOvVaw38PCzEkileyLIUjrzH3y1b

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