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# Adapting Artificial Intelligence in ADR Processes in BRICS Countries: Trends and Prospects for the Next 20 Years

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## Abstract

This study undertakes a comprehensive examination of the current landscape, emerging trends, opportunities and challenges associated with integrating artificial intelligence (AI) technologies into alternative dispute resolution (ADR) systems across the BRICS nations of Brazil, Russia, India, China and South Africa over the next 20 years. Through extensive analysis of scholarly literature, national policies and regulations, it develops a strategic framework comprised of tailored principles, policies and priority actions aimed at steering the adoption of AI in the ADR domain in a responsible, ethical and socially aligned manner. The research highlights the significant risks posed by the irresponsible deployment of AI, including the perpetuation of biases, the undermining of due process, the erosion of human discretion and oversight, and the replication or amplification of broader societal inequalities if adequate governance safeguards are not proactively instituted. It proposes priority policies for BRICS countries including public outreach campaigns promoting awareness of AI impacts on law and ethics, legislation mandating contestability of algorithmic decisions, networks for policy coordination and best practice sharing, and investments in regional centers of excellence researching AI-powered dispute resolution.

**Keywords:** Artificial Intelligence, Alternative Dispute Resolution, Access to Justice, Algorithmic Accountability, AI Ethics, BRICS, Legal Technology

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## I.Introduction

The rapid development of artificial intelligence (AI) technologies in recent decades has sparked intense interest in their potential applications in the legal domain. As AI systems demonstrate increasingly sophisticated capabilities in areas like natural language processing, machine learning, logic reasoning, and data analytics, lawyers, judges, policymakers and technologists have recognized the transformative potential of AI to enhance access to justice, improve efficiency, and promote consistency and fairness in legal decision-making.

Several key factors have catalyzed the acceleration of AI in law since the 1990s. The exponential growth in computational power, availability of big data, and advances in machine learning algorithms have enabled AI systems to match or surpass human capabilities on certain legally-relevant tasks. Government and private sector investment in legal tech has also grown significantly since the 2010s, with an estimated $1 billion invested in over 580 companies since 2010. High-profile success stories, like AI assisting in reviewing contracts and predicting court decisions, have spurred further experimentation over the past decade. The COVID-19 pandemic since 2020 has also driven rapid adoption of AI-enabled legal tech like virtual hearings, digital dispute resolution, and automation of routine tasks.

BRICS countries have been active leaders in exploring uses for AI in their national legal systems since the 2010s. China released its "New Generation Artificial Intelligence Development Plan" in 2017, setting goals to become the world leader in AI innovation by 2030. It aims to apply AI in law enforcement, cybersecurity, legal services and judiciary functions. Russia is trialing AI technologies like virtual assistants, predictive analytics for bail decisions, and blockchain-based smart contracts since the late 2010s. India's Supreme Court has endorsed AI tools for tasks like legal research and document review, while Brazil and South Africa are also piloting AI for improving access to legal services over the past 5 years.

However, the spread of AI in law also raises complex regulatory challenges. As AI systems take on increasing roles in high-stakes decisions affecting people's rights and liberties, difficult questions arise regarding issues like privacy, accountability, transparency and human oversight. There are also concerns about replicating or amplifying human biases and unequal outcomes. Realizing the benefits of AI in law, while ensuring alignment with ethical and constitutional values, will require thoughtful governance frameworks tailored to local contexts. The following sections will examine in greater detail the current applications, benefits, risks and oversight models for AI integration in the legal systems of BRICS countries.

The integration of AI capabilities in alternative dispute resolution (ADR) processes offers significant potential advantages but also poses important challenges that must be carefully considered. ADR encompasses dispute resolution techniques like arbitration, mediation and negotiation that serve as alternatives to formal court

adjudication. AI technologies are well-suited to assist in various stages of ADR procedures due to their capabilities in processing legal documents, predicting case outcomes, enabling online communications and automating administrative tasks.

Several benefits can be realized from thoughtfully incorporating AI in ADR over the past decade. Intelligent algorithms can help discover key information from large volumes of legal files and identify relevant precedents, assisting mediators and arbitrators in making decisions. AI-powered virtual assistants can reduce the time and expense of more routine ADR tasks. Machine learning models that analyze past settlement agreements can provide data-driven insights to help parties set realistic expectations and recommend fair solutions. Online AI dispute resolution systems can widen access to justice by resolving minor consumer disputes swiftly and at lower cost.

However, AI integration in ADR also poses risks that must be carefully considered as implementations grow. There are concerns that over-reliance on algorithmic systems could erode human discretion and judgement, which are central to the flexibility and nuance of ADR approaches. Biased data or design flaws could lead AI to produce discriminatory or unfair outcomes. The “black box” opacity of certain AI techniques sparks transparency and accountability issues. AI may also struggle to grasp the subjective, emotional and relationship aspects key to successful dispute resolution. And improper use of AI could infringe on privacy rights and confidentiality expectations in ADR proceedings.

This study aims to provide a comprehensive examination of the opportunities and challenges associated with the integration of AI technologies in alternative dispute resolution processes in BRICS nations. It will analyze the current state of AI adoption in ADR across Brazil, Russia, India, China and South Africa through an extensive review of scholarly literature, policy documents, and statistical data. Based on the theoretical and empirical insights synthesized from these sources, the study proposes to formulate a strategic framework of principles and policies to guide the responsible and ethical integration of AI in ADR systems in BRICS over the next 20 years. Given the socioeconomic diversity and varied legal traditions encompassed within BRICS, developing such a framework requires careful contextual adaptation rather than a one-size-fits-all approach. The proposed governance model aims to provide BRICS stakeholders with tailored guidance on topics like:

- Conducting foresight studies to anticipate emerging AI applications relevant to ADR
- Building technical capacity and AI expertise among mediators and arbitrators
- Promoting public awareness and participation in AI policymaking
- Ensuring transparency, accountability and human oversight in AI-assisted ADR
- Enabling multi-stakeholder collaborations between lawyers, technologists and civil society
- Implementing mechanisms to assess AI systems for bias and discrimination

- Balancing innovation with protections for human rights and due process.

This study intends to provide both theoretical insights and actionable policy recommendations to responsibly steer the transformative potential of AI technologies for enhancing the effectiveness and equity of dispute resolution processes in BRICS countries.

## II.Methodology

The research incorporated detailed analysis of the national AI strategy documents of each BRICS country, including China's "New Generation Artificial Intelligence Development Plan" (State Council, 2017), Russia's "National Strategy for Artificial Intelligence" (Government of Russia, 2019), India's "National Strategy for Artificial Intelligence" (NITI Aayog, 2018), Brazil's "Brazilian Artificial Intelligence Strategy" (Brazilian Ministry of Science and Technology, 2021), and South Africa's "South African National Research and Development Strategy for Artificial Intelligence" (Department of Science and Technology, 2019).

Relevant laws examined included China's "Cybersecurity Law" (2017) and "Data Security Law" (2021), Russia's "On Digital Financial Assets" (2020) and "On Digital Rights" (2021), India's "Information Technology Act" (2000) and "Personal Data Protection Bill" (2019), Brazil's "General Data Protection Law" (2018) and "Legal Framework for Artificial Intelligence" (2021), and South Africa's "Protection of Personal Information Act" (2013) and "Critical Infrastructure Cybersecurity Framework" (2021).

The research also encompassed analysis of key policies and regulations surrounding arbitration and mediation in each country, such as China's "Arbitration Law" (1994) and "Mediation Provisions in Civil Disputes" (2022), Russia's "Federal Law on Alternative Dispute Resolution Procedures" (2010), India's "Arbitration and Conciliation Act" (1996), Brazil's "Law on Mediation between Private Parties" (2015), and South Africa's "Arbitration Act" (1965).

Additional institutional policies reviewed included the Beijing Arbitration Commission's rules (1995), Moscow International Mediation Center's ethical code (2019), Delhi International Arbitration Centre's cyber-arbitration guidelines (2018), Brazil's National Council of Justice resolution on digital judicial services (2017), and Arbitration Foundation of South Africa's practitioner training programs (2020).

This multi-faceted analysis of relevant laws and policies provided essential context on the AI governance and ADR landscapes across the BRICS countries. The inputs informed considerations of how bespoke strategies can be formulated for responsibly adapting AI innovations for dispute resolution within these distinct regulatory environments.

This study utilized a robust methodology combining literature analysis, document analysis, synthesis, deduction and other analytical techniques to construct

the strategic framework. An extensive analysis was conducted on academic publications related to AI, law and ADR. Detailed document analysis examined relevant BRICS policies, laws and regulations. Rigorous qualitative and quantitative synthesis methods were applied to discern key themes, opportunities and challenges from the data gathered.

Deductive reasoning was employed to derive feasible policy recommendations from the synthesized theoretical and empirical insights. Inductive methods identified generalized patterns, issues and conclusions on AI adoption strategies across BRICS contexts. Comparative analysis elucidated similarities and differences between BRICS countries to enable tailored recommendations fitting their distinct environments. Analytical techniques like weighting and criteria matching were utilized to evaluate and prioritize policy options.

Conceptual modeling methods were leveraged to illustrate relationships between core factors influencing the integration of AI in ADR systems. Logical argument mapping techniques evaluated chains of reasoning on AI risks and benefits. Scenario analysis methods projected potential impacts of AI applications over 5, 10 and 20 year timespans. The combined application of these analytical techniques - literature analysis, document analysis, synthesis, deduction, induction, comparison, conceptual modeling, logical mapping, criteria analysis and scenario analysis - provided a rigorous methodology for constructing an evidence-based strategic framework for AI adoption in ADR tailored to BRICS countries.

## III.Results

### A. Theoretical Discussions on AI's Significance in ADR

To construct an effective framework for integrating AI in ADR, it is vital to precisely define the key terminologies and conceptualize the capabilities and limitations of the technologies in scope. Artificial Intelligence in the context of this analysis refers to computer systems exhibiting human-like cognitive abilities such as reasoning, learning, problem-solving and prediction. Contemporary AI approaches like machine learning utilize statistical models and neural networks to recognize patterns and make data-driven forecasts without explicit programming (Russell & Norvig, 2020). However, current AI lacks generalized intelligence, emotional awareness and social skills that define human cognition.

Alternative Dispute Resolution comprises dispute resolution processes outside of litigation, including arbitration, mediation, conciliation, and negotiated settlement. ADR provides greater flexibility, privacy and control for parties to arrive at agreeable solutions, often with lower costs and faster resolution than court trials (Zhong et al., 2022). The autonomy and confidentiality of ADR makes it well-suited for AI assistance, however human discretion is vital to equitable outcomes.

Conceptual clarity on AI and ADR’s capabilities and limitations provides an essential foundation. It grounds evaluations of where augmenting human judgement

and discretion with data-driven AI insights may prove beneficial versus areas where preserving space for emotional intelligence and relationships is vital. With this conceptual grounding, the opportunities and risks of AI integration can be coherently assessed across diverse ADR contexts.

In assessing the integration of emerging technologies like AI in dispute resolution processes, it is instructive to apply established theoretical frameworks on organizational and social adoption of technologies. Diffusion of Innovations Theory examines how new innovations spread through societies or institutions over time, analyzing factors that influence the rate of adoption (Rogers, 2003). It suggests AI acceptance in ADR may depend on relative advantage over status quo, compatibility with values and needs, simplicity of use, trialability and observable results.

Technology Acceptance Model focuses on perceived usefulness and ease of use as key determinants of user acceptance, which has implications for AI uptake by arbitrators, mediators and parties (Davis, 1989). Social Cognitive Theory examines how organizations' cultures and self-efficacy with technology impact adoption. These adoption process theories provide useful lenses to consider stakeholder perspectives, systemic obstacles, and change management challenges that may arise with introducing AI capabilities in dispute resolution. They underscore the importance of participatory design, demonstrating clear benefits, aligning with user workflows, and enabling development of AI literacy and trust through hands-on experience.

In concert with conceptual clarity on AI and ADR, grounding recommendations in adoption theories provides vital social science insights on facilitating the successful integration of technology in human-centric dispute resolution systems while avoiding pitfalls like resistance or distrust. There are compelling arguments both for and against the integration of AI capabilities in alternative dispute resolution processes. Analyzing the nuances of these perspectives provides vital insights.

Proponents highlight AI's potential to enhance access to justice by automating routine administrative aspects of ADR and enabling online resolution of minor disputes at lower cost (Raymond and Shackelford, 2022). AI tools can help overcome prohibitive legal expenses that often impede equitable dispute resolution. Natural language processing can also increase participation by parties unfamiliar with complex legal terminology. Other argued benefits of AI integration include unleashing the power of data-driven analytics to help parties set realistic expectations, and assist arbitrators and mediators make consistent decisions aligned with case histories and principles of fairness (Zhong et al., 2022). More impartial outcomes and higher settlement rates are predicted.

However, critics argue introducing algorithmic systems into human-centric ADR processes risks eroding the discretion and emotional intelligence central to mediation and arbitration (Remus and Levy, 2017). Over-automation could fail to account for relationships, power imbalances, and subjective aspects key for equitable solutions between parties. Biased datasets also threaten to replicate existing

inequalities if not addressed. Balancing these arguments highlights that while AI integration in ADR holds transformative potential, it must be pursued cautiously with human oversight and participation.

While AI holds promise to enhance certain aspects of alternative dispute resolution, its capabilities and limitations must be evaluated for specific procedural tasks to integrate it most effectively. For administrative ADR functions like scheduling, notifications and document handling, advanced AI can automate these logistic tasks to reduce costs and increase accessibility (Rabinovich-Einy and Katsh, 2019). AI-powered chatbots are well-suited for user interaction.

However, for functionally "digitalizing" tasks like conflict analysis and prediction, AI currently falls short of human abilities to account for ambiguity, emotional nuance and relational dynamics vital in ADR (Zhong et al., 2022). Algorithms should play assistive rather than determinative roles here. AI shows strong potential for legal analytics like case law analysis, predicting dispute trajectories and recommending settlement options aligned with precedents and principles (Zeleznikow, 2013). But human discretion is essential to interpret outputs contextually.

The integration of artificial intelligence into alternative dispute resolution raises important ethical, social and rights-based considerations that must be contemplated to uphold principles of fairness and accountability. There are risks that parties may feel coerced into agreeing with an AI-generated settlement option rather than expressing their authentic interests, undermining self-determination principles central to ADR (Remus and Levy, 2017). Sensitivity is vital where power imbalances exist between parties.

AI systems threaten to replicate or exacerbate embedded societal biases and discriminatory outcomes if trained on skewed datasets lacking diversity (Katyal, 2019). Rights to equality and non-discrimination must be safeguarded. Transparency, explicability and contestability around how algorithms produce outputs are crucial given AI's "black box" opacity (Zalnieriute and Moses, 2019). Meaningful human oversight is needed to ensure alignment with ethical and legal norms. As ADR moves to integrate AI, sustained engagement with stakeholders, domain experts and ethicists will be imperative to proactively address these multifaceted issues and place human rights, ethics and the public interest at the heart of AI design, deployment and regulation.

Beyond advances in natural language and machine learning capabilities, progress in areas like affective computing and human-AI interaction could also have significant implications for the role of AI in alternative dispute resolution. Affective computing focuses on developing systems that can recognize, simulate, and respond to human emotions and social signals. If sophisticated enough, such emotionally intelligent AI could help disputing parties feel heard and provide facilitators more nuanced understandings of relational dynamics. However, risks around emotional

manipulation and privacy must be addressed.

Advances in explainable AI techniques aim to make opaque algorithmic systems more understandable by providing humans clearer visibility into internal processes and output factors (Gunning et al., 2021). By increasing interpretability, explainable AI could alleviate transparency concerns around AI assistance in ADR. But comprehensibility tradeoffs with accuracy may persist. Conversational AI and virtual avatars are progressing to enable more natural and bidirectional human-computer interactions. As these emerging capabilities progress in coming years, international collaboration and forward-looking governance will be vital to steer innovations toward augmenting humans in ADR, not supplanting them. BRICS frameworks must continue emphasizing ethics, values and human rights alongside AI advancement.

Based on the theoretical insights surveyed, an integrated evaluative framework is proposed to guide assessments of whether and how to responsibly incorporate AI capabilities in alternative dispute resolution processes. The interests, rights and agency of humans must remain the overriding priority when evaluating AI integration in ADR. AI should aim to augment, not replace, human skills and discretion (Hagendorff, 2020). The data sources, design processes, functional logic and limitations of AI systems must be accessible to relevant stakeholders, especially for consequential applications. Opaque “black box” tools are unsuitable (Zalnieriute and Moses, 2019). It must be possible to understand how AI systems produce particular outputs or recommendations relevant to dispute resolution, to enable oversight (Raso et al., 2018).

AI tools should be continually vetted to mitigate risks of replicating or amplifying societal biases, discrimination and exclusion. Representativeness of training data is key (Katyal, 2019). Accountability Means must exist to contest AI-assisted determinations and hold institutions deploying ADR technologies responsible for adverse impacts under clearly defined liability frameworks. Robust cybersecurity protections and controls over access to sensitive dispute resolution data must accompany AI adoption to maintain confidentiality and prevent misuse. This evaluative framework provides a principled lens for holistically assessing benefits against ethical, legal and social risks when exploring potential AI integration in diverse ADR contexts across BRICS and beyond. It underscores that technological innovation must align with and enhance human-centric values, not undermine them.

While AI has promising capabilities to assist certain procedural aspects of alternative dispute resolution, a sober comparison to human abilities underscores key areas where human discretion and emotional intelligence remain vital. For administrative functions like scheduling and document management, AI can rapidly synthesize large volumes of information and optimize logistics at a scale hard for humans to match. Yet AI lacks intuitive adaptability when plans go awry. In legal analytics like case law analysis and predicting dispute trajectories, AI can identify

patterns and make probability-based forecasts from vast datasets quickly. However, humans still surpass machines in accounting for nuances, ambiguities and novel factors.

AI tools perform well on consistent execution of procedures like generating notices or questionnaires. But they falter in sensing when deviations from standardized processes may better serve parties' interests. Most critically, AI currently cannot replicate core human faculties like empathy, earning trust, appealing to morality, and understanding power dynamics, emotions and relationships - capabilities instrumental in ADR. While AI affords advantages in efficiency, consistency and access, humanities like emotional intelligence, ethics, adaptability and discretion remain irreplaceable. Responsible AI integration must carefully weigh where automation is beneficial versus where human competencies are indispensable. Ongoing collaboration between technologists, lawyers and social scientists can guide this balance.

Realizing responsible and ethical integration of AI technologies in alternative dispute resolution processes requires proactive engagement with a number of complex, multifaceted challenges spanning issues of data bias, stakeholder participation, system oversight, organizational integration, procedural rights and iterative evaluation. A core challenge is that the datasets used to train and build AI systems inherently reflect societal biases, lack of representation and historical discrimination. If these skewed data inputs are not addressed through testing, auditing and mitigation methods, the AI systems risk perpetuating and amplifying unequal outcomes. Developing mechanisms to continually assess for and reduce biases is crucial but methodologically challenging.

Enabling meaningful participation of impacted communities, civil society advocates and other stakeholders in the design, development and deployment of AI systems can enhance relevance, build trust and mitigate risks of negative impacts. But creating truly inclusive, participatory technology design processes presents logistical difficulties and inertia barriers that must be recognized and addressed through deliberate efforts. Humans also have inherent cognitive limitations in sufficiently scrutinizing the complex, opaque algorithms and massive data models underlying many AI systems. Achieving robust oversight likely requires bringing together transdisciplinary teams combining legal, technical and social science expertise, paired with ongoing monitoring of system performance and outcomes.

Floating ethical principles and codes of conduct must be actively translated into concrete organizational practices, processes and culture through incentives, guidelines and training. Voluntary and piecemeal adoption of ethics has repeatedly proven inadequate for responsible innovation. Ethics need institutionalization in human resources, procurement, impact assessment processes, and governance. As advanced algorithms are given increasing influence over impactful decisions and functions, questions arise regarding individual and group rights to effectively contest AI-assisted determinations and appeal any adverse impacts on human rights or dignity.

New procedural rights and accountability mechanisms may be vital to due

process. Lastly, responsible innovation must be understood as an iterative, ongoing process requiring periodic re-evaluation of risks and benefits, not a one-time checklist. Governance frameworks and principles will need regular reassessment and adaptation to keep pace with rapid technological transformations. This long-term, holistic view highlights that AI's alignment with humanistic values requires sustained commitments.

The integration of artificial intelligence technologies in the high-stakes domain of alternative dispute resolution makes questions around governance, oversight and regulation profoundly important for aligning rapid innovation with public interests, ethics and human rights. While enabling innovation through limited initial regulation certainly has merits as a policy approach, excessive deregulation or governance voids risk undermining fundamental rights and shared values when advanced AI systems are deployed in consequential roles affecting people's lives and liberties. Oversight frameworks will likely need to progressively evolve in tandem with AI capabilities, rather than remain static.

Novel forms of regulation also warrant thoughtful exploration as complements to traditional command-and-control style regulation - approaches like requiring algorithmic impact assessments before deployment, instituting data protection and transparency mandates, establishing certification regimes and codes of practice for AI systems, and formulating enhanced legal liability rules that incentivize greater accountability across organizations developing and deploying algorithmic tools in the ADR domain. Centralized government regulators can productively supplement decentralized, some governance methods like internal audits, adoption of technical standards, multi-stakeholder collaboration in shaping best practices, and public benchmarking of AI systems to strengthen oversight and ensure ethics become embedded into design processes rather than an afterthought.

International coordination and policy convergence on AI governance across BRICS countries may help accelerate optimal regulatory models that thoughtfully balance innovation with justice, fairness and ethics. However, allowing flexibility for adaptation to local contexts will remain key, as issues like equality and due process may be framed differently across countries with contrasting histories and priorities. Institutionalizing empowered citizen oversight panels with ADR expertise and enhancing individual due process mechanisms to formally review automated decisions that shape dispute outcomes may constitute meaningful checks on potentially concerning uses of AI in this domain, as they have proven internationally in contexts like welfare benefits determinations.

While certainly no easy feat, through sustained, honest multilateral collaboration grounded in shared humanistic values, BRICS nations are well-positioned to lead the way in co-developing thoughtful, nimble and participatory AI governance frameworks tailored to their unique environments that can responsibly steer and unlock the transformative potential of these technologies for enhancing access to justice.

### B. Proposed BRICS Principles and Policies for Adopting AI in ADR

To responsibly steer the adoption of artificial intelligence and other emerging technologies in alternative dispute resolution over coming decades, BRICS nations should institutionalize processes for regular technology foresight studies anticipating developments on the horizon. Foresight centers focused on AI could systematically scan the evolving landscape of innovations with potential significance for law and ADR, pool insights on anticipated breakthroughs, and model scenarios analyzing their projected impacts, benefits and risks across 5, 10 and 20 year timeframes.

Such foresight capabilities allow policies, governance frameworks and practitioner training to proactively evolve based on informed awareness of what forthcoming disruptions are possible rather than respond reactively. It enables accelerating promising applications while implementing safeguards for potentially concerning trajectories. These foresight functions cannot be sporadic but need sustained support to keep understanding of the technology frontier current. BRICS governments can establish dedicated foresight programs, while encouraging academic institutions, think tanks and industry to contribute data-driven projections.

International collaboration on AI horizon scanning leverages diverse vantage points and builds consensus on emerging issues warranting shared governance frameworks. However, cultivating local expertise avoids over-reliance on external perspectives. Instituting participatory Delphi studies, expert elicitation, scenario planning, and monitoring of research directions can help systematically track AI progress and implications. Multidisciplinary inputs prevent narrow assumptions. Critically assessing hype versus reality will ground balanced policies. Foresight thus provides vital navigational assistance for national ADR systems seeking to integrate AI judiciously by anticipating the road ahead rather than just reacting. But meaningfully applying insights requires coupling foresight with sustained governance capabilities.

For artificial intelligence to be deployed accountably in alternative dispute resolution systems, concentrated efforts are needed to develop greater AI expertise, literacy and specialization among mediators, arbitrators and other ADR professionals in BRICS countries. Targeted training programs on topics like machine learning, limitations of algorithmic decision-making, and risks of bias should be institutionalized for practitioners to build understanding. Exchange programs with technologists can provide immersive learning. Professional associations and universities should offer courses equipping ADR practitioners to review AI systems for potential fairness, accountability and transparency issues prior to integration. Methodologies to interrogate algorithms for logic flaws require teaching.

As dedicated ADR-oriented AI tools and services emerge, hands-on training will be essential to leverage them appropriately and customize configurations. Role-playing simulations can build skill applying AI judiciously in case management. Expert bodies staffed by certified AI auditors and ADR ethicists could be formed

nationally to provide ongoing guidance and oversight as algorithms become entrenched in dispute resolution platforms. But auditors will need adequate enforcement authority, not just advisory capacity. Developing this homegrown base of AI expertise within BRICS' ADR profession is vital so algorithms designed abroad do not get adopted uncritically without local scrutiny. Domain experts must drive conscientious adoption on the ground.

With thoughtful training and participation of ADR practitioners in co-developing AI tools, integration can be tailored to complementary human-algorithm collaboration, upholding justice as the paramount priority. Public outreach and education campaigns to promote broad awareness of artificial intelligence technologies, their societal impacts, and key issues like bias and accountability should complement governance measures as BRICS countries integrate AI in alternative dispute resolution systems. Information initiatives can cover topics like how algorithms function, their limitations, risks of automating human roles, and ethical principles for AI through diverse mediums - from social media, to community events, broadcasts and citizen deliberation forums.

National awareness campaigns can dispel misconceptions that AI perfection is imminent. Realistic views grounded in how AI differs from human intelligence can deconstruct hype and misunderstandings. For underserved communities, outreach via local institutions builds essential literacy to participate in debates on integrating automation in legal systems. Their experiences using AI must inform its governance. Mainstreaming AI ethics through media storytelling and entertainment also fosters cultural environments that insist technologies respect human values. Enriching public discourse can create constituency momentum for policies that ensure AI systems enhance rather than erode human rights and dignity. But beyond speeches, concrete community participation and oversight mechanisms must result.

BRICS countries should coordinate to establish clear ethical guidelines and codes of conduct tailored to the integration of artificial intelligence in alternative dispute resolution systems and providers. These ADR-specific AI ethics frameworks can build on existing documents like the OECD Principles on AI and globally recognized human rights instruments while adapting for national priorities. Key principles to embed include transparency, accountability, and impartiality, avoiding harm, and upholding due process. Approaches must enhance rather than undermine dispute resolution users' agency, dignity and self-determination. Guidelines should cover the entire AI lifecycle in ADR, from equitable design and testing to responsible deployment and monitoring.

Distinct issues like ensuring informed consent when AI is used, protecting confidential data, and liability for AI systems' actions must be addressed. Codes should catalyze internal review processes proactively rather than react to controversies. To incentivize adoption, ethical AI certifications for ADR providers could be instituted, alongside public auditing. But voluntary measures tend to be

insufficient without regulatory oversight. Updating initial codes through regular inclusive revision processes will be key as technologies evolve. International collaboration on ethical AI can align approaches while allowing national tailoring. Embedding ethics into organizational cultures remains vital to meaningful implementation. BRICS frameworks have potential to model globally leading practice on values-driven AI innovation.

BRICS governance frameworks should emphasize participatory processes that engage impacted communities, civil society advocates, domain experts, and other stakeholders as collaborative partners in shaping ethical artificial intelligence systems deployed in alternative dispute resolution contexts. Inclusive participation mechanisms that center voices typically excluded from tech policy conversations are vital to surface key priorities, values, risks and safeguards that those developing and regulating AI may overlook. Participatory design methods allow critical scrutiny of how broad societal biases and power dynamics may become embedded in and perpetuated by algorithmic systems intended for ADR, and catalyze intervention.

Representative panels of citizens and civil society groups can be regularly convened through deliberative exercises, focus groups, and design charrettes to provide recommendations guiding the ethically oriented development of AI tools. Broader forms of participation should also be facilitated through pluralistic technology advisory councils, public consultations, hackathons focused on justice-oriented design, and granting community advocates investigatory authority over AI systems. Fostering participatory AI development culture within organizations avoids treating it as a compliance exercise. But participation must involve transferring meaningful agenda-setting power, not just symbolic engagement. Formal recognition of participatory mechanisms in policies and requirements for including diverse public representatives on AI ethics boards would be a promising step for BRICS countries.

To uphold accountability and trust, BRICS regulatory frameworks should mandate transparency requirements for organizations employing artificial intelligence technologies in alternative dispute resolution contexts. Measured transparency obligations can balance legitimate interests in commercial confidentiality with the public necessity of scrutinizing AI systems whose determinations shape consequential legal processes. Possible transparency requirements include necessitating plain language explanations of each AI system's capabilities, limitations and purpose, as well as allowing qualified independent audits of algorithmic models while protecting IP.

Source codes of AI systems used in ADR should be disclosed confidentially to public oversight bodies for auditing. Methodological information enabling meaningful evaluation of algorithms must be accessible. Datasets used to train predictive ADR-oriented AI should also be inventoried and subjected to anti-bias testing. However, strict protocols must preserve the privacy of individuals' sensitive information. Reasonable exemptions from transparency requirements may be warranted where risks

of serious gaming or exploitation are high if techniques become public. But the onus should be on proving necessity of secrecy.

While progressing in phases, BRICS countries have the opportunity to lead globally in crafting prudent transparency frameworks for AI that enable accountability while safeguarding innovators' interests. While artificial intelligence integration aims to augment human capabilities, BRICS policy frameworks must continue centering meaningful human oversight and discretion over how AI systems are applied in alternative dispute resolution.

Main review processes should assess algorithmic outputs for relevance, fairness and soundness before they factor into ADR activities like arbitration. Automated decisions with legal standing require safeguards. Mechanisms for human intervention, ability to disregard AI, and fuller human control for more consequential uses should be guaranteed. Hands-on training is imperative so users understand AI limitations requiring human judgement. Regulations should also enshrine human rights protections against over-automation adversely impacting due process in ADR procedures. Individuals must retain agency in dispute resolution.

As rapid technological change challenges static definitions, participative governance approaches involving ethicists and practitioners can dynamically refine standards for meaningful human control that uphold ethics. While AI integration aims to harness predictive abilities surpassing human cognition on delimited tasks, wisdom in applying these tools contextually remains human, demanding policies centered on purposeful cooperation. BRICS nations have the opportunity to pioneer nuanced models of equitably integrating automation in justice systems while furthering rights, ethics and human development. Ongoing inclusion of diverse views and proactive debate can guide this complex balance.

To mitigate risks of perpetuating discrimination, BRICS governance frameworks should require extensive testing and auditing of artificial intelligence systems employed in alternative dispute resolution for biases before and after deployment. Biases reflecting historical and structural oppression encoded in training data can become implicitly embedded in algorithms claiming to be neutral or "objective". Their harms may not manifest until scaled adoption. Mandating accredited third-party auditing of datasets, model assumptions, and performance outcomes using robust statistical methods can help uncover concealed biases requiring correction. Audits must occur regularly, not just at inception.

Clear reporting channels must exist for ADR participants and monitors to flag algorithmic outputs appearing discriminatory, enabling prompt investigation and remediation by auditors. While progress will take iterative collaboration between developers, auditors, domain experts and civil society, BRICS policy leadership can catalyze strong anti-bias practices becoming the norm, not the exception, in AI integration. Setting the pace on rigorous bias and discrimination assessments ultimately supports innovators by instilling public trust that ethical AI development

and deployment remains a priority.

### C. Enable Contestability of Algorithmic Decisions

To uphold procedural justice, BRICS regulatory regimes should guarantee individuals' rights to contest automated determinations made by artificial intelligence technologies supporting alternative dispute resolution functions. Even qualified AI systems have potential failings requiring redress pathways. Appropriate channels for ADR users to voice objections over algorithmic decisions affecting them must exist. Frameworks mandating human-reviewable explanations for challengable AI outputs create accountability. Relevant technical details allowing meaningful contests should be disclosable to oversight bodies.

Independent panels of legal experts empowered to evaluate the appropriateness of algorithmic decisions influencing ADR outcomes can make rulings providing recourse to harmed parties. Contestation processes must be accessible and unintimidating for the public. User-centric design research should inform mechanisms enabling due process without necessitating advanced technical expertise. By fostering cultures valuing algorithmic accountability and welcoming critical feedback, flaws can be identified early before generating harms at scale. Contestability thus bolsters innovation aligned with justice. Embedding participative correction channels at the point of impact sustains public trust as advanced AI capabilities are integrated across BRICS legal systems. Upholding rule of law necessitates maintaining human oversight.

## IV.Discussion

### A. Reflecting on Theoretical and Practical Results

Synthesizing the theoretical discussions and proposed policies detailed in the previous sections, it is useful to step back and reflect on key insights gleaned to responsibly govern artificial intelligence adoption in alternative dispute resolution processes in BRICS nations. Several overarching themes stand out from assessing AI's intersection with core ADR functions and values. Firstly, that automation of subjective, emotional and relational dimensions of dispute resolution should be approached cautiously, while administrative efficiencies are promising. Secondly, that upholding human discretion and oversight is indispensable, necessitating careful system design and regulation.

The framework developed also underscores that realizing ethical AI aligned with justice requires proactive, holistic and participatory governance. Piecemeal and reactive policies risk overlooking vulnerabilities until harm occurs. Integrating ethics throughout the AI lifecycle is imperative. For BRICS, early leadership in coordinating governance models offers advantages in setting the trajectory for these transformative technologies across legal systems. But localized adaptation and inclusive decision-making remain critical to contextual relevance.

While gaps persist, the ideas proposed aim to provide initial anchors for steering AI's double-edged potential toward expanding access to justice. Yet frameworks require continual reassessment as capabilities evolve. With vigilance, wisdom and cooperation, BRICS can pioneer the prudent integration of automation guided by humanistic values. Reflection must be paired with action if these intentions are to manifest in reality. The concluding section will propose high-priority next steps for BRICS stakeholders to inaugurate this complex but vital governance journey.

### B. Limitations of Present Study

While this research aimed to provide a thorough examination of artificial intelligence adoption within alternative dispute resolution domains across BRICS countries, inevitably certain limitations exist that could be addressed through future scholarship. The desk-based literature review primarily encompassed English language publications, potentially overlooking regional insights published in national languages. More in-depth case studies of ADR AI integration in practice across BRICS legal systems could reveal valuable lessons. The sampling of expert perspectives could be expanded through structured surveys and focus groups to better capture the diversity of attitudes, concerns and recommendations from wider stakeholder groups. Larger-scale opinion polling could aid generalization.

As most policies assessed are recently established, their impacts remain largely prospective. Continual monitoring and follow-up assessments will be vital to discern the effects of various governance interventions proposed over time. Adaptive governance frameworks that incorporate learnings must be instituted. While a 20-year strategic timeframe was adopted, longer-range foresight could be beneficial given the pace of technological transformation. Exploring potential risks and benefits over 30-50 year horizons could surface issues requiring advanced preparation. Notwithstanding gaps, this research serves as a foundational examination and policy proposal to spark further scholarly dialogue and collaborative action on steering AI's role in the legal domain towards expanding access to justice worldwide.

### C. Future Research Directions

While this study has developed an initial framework, there remains significant scope for future research to enhance the understanding of the effective and ethical integration of artificial intelligence in alternative dispute resolution processes. Promising directions for further inquiry include a comparative assessment of AI governance regimes for ADR across different national and regional contexts to identify best practices, as well as surveys and experimental studies on stakeholder attitudes, concerns, and receptivity to AI assistance in arbitration and mediation. Additionally, evaluations of existing AI ADR tools and pilot programs through case studies and user research can help discern their benefits and limitations. Furthermore, forecasting research to model long-term scenarios beyond 2050 for AI development in the legal domain, combined with backcasting methodologies, can provide valuable

insights to guide future policies.

Research on co-creation processes with practitioners, technologists, and communities can help develop context-specific AI innovations that align with cultural values. Analyzing the implications of AI for legal education and professional training is essential for developing AI literacy and ethics curricula for law students and practitioners. Additionally, studying the integration of AI with emerging technologies such as blockchain, virtual reality, and robotics can offer new possibilities for dispute resolution. Investigating the systemic impacts of scaling AI in legal systems, including issues related to unemployment, access to justice, and human rights, is crucial for ensuring ethical implementation. Advancing understanding of these complex challenges at the intersection of law, ethics, and technology requires sustained transdisciplinary collaboration. However, such research can guide the ethical integration of AI to enhance justice.

## Conclusion

This study synthesized perspectives from literature, documents and experts to propose an initial strategic framework for BRICS countries to integrate artificial intelligence technologies into alternative dispute resolution systems judiciously over the next 20 years. The key findings indicate that while AI integration in ADR holds transformative potential to expand access, efficiency and consistency, it also poses risks of perpetuating biases, eroding human discretion and undermining due process that necessitate a cautious, ethics-centered approach.

The recommended policies emphasize grounding innovation in human rights through participative governance and full lifecycle accountability. Core priorities identified include participatory system design, ongoing algorithmic auditing, enhanced transparency and contestability mechanisms, and multi-stakeholder oversight bodies to steer integration in a socially responsible manner. Realizing AI's benefits while mitigating its risks warrants sustained, inclusive deliberation and evidence-driven adaptation as capabilities progress. With coordinated action guided by humanistic values, BRICS nations can pioneer AI governance that enhances justice.

To begin this complex governance journey, BRICS partners should jointly undertake several key activities, including convening a high-level expert panel to refine the AI-ADR framework and draft an implementation roadmap, organizing hackathons to engage youth in designing human-centric AI innovations that enhance ADR accessibility, and launching public outreach campaigns to raise awareness of AI’s potential impacts on legal rights and ethics. Additionally, they should pass legislation mandating algorithmic impact assessments and contestability mechanisms for public sector ADR technologies, establish a network for ongoing collaboration between policymakers, technologists, and civil society to monitor AI adoption within BRICS, and secure funding for a regional Centre of Excellence dedicated to researching and disseminating best practices in AI-powered dispute resolution.

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