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PREDICTIVE ANALYTICS IN ARBITRATION: EFFICIENCY TOOL OR THREAT TO ARBITRAL INDEPENDENCE?

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I. ABSTRACT

The growing integration of predictive analytics into arbitration marks a significant technological development in contemporary dispute resolution. By deploying artificial intelligence and machine learning systems trained on arbitral awards, procedural orders, institutional statistics, and arbitrator-related data, predictive tools promise to forecast likely outcomes, estimate damages, evaluate procedural trends, and support strategic case management. This paper critically examines whether predictive analytics functions primarily as an efficiency-enhancing mechanism or whether it creates deeper risks to arbitral independence and procedural integrity. Its central objective is to assess the balance between technological innovation and foundational arbitral principles, including neutrality, party autonomy, confidentiality, equality of arms, and adjudicatory discretion. Methodologically, the paper adopts a doctrinal, analytical, and comparative approach to arbitral rules, institutional practices, emerging AI guidelines, and relevant regulatory developments. The findings indicate that predictive analytics can improve procedural efficiency by facilitating early case assessment, encouraging informed settlement negotiations, reducing uncertainty, assisting resource allocation, and supporting more structured case management. However, reliance on historical arbitral data may also embed structural biases, create information asymmetries, intensify strategic arbitrator profiling, and indirectly pressure arbitrators to align decisions with statistical expectations. Because arbitration derives legitimacy from flexibility and individualized justice, excessive reliance on predictive tools may encourage standardization of outcomes and weaken the human judgment central to arbitral decision-making. The paper concludes that predictive analytics should be used strictly as an assistive tool rather than a determinative influence. To safeguard arbitral independence, transparency standards,

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verification duties, confidentiality protections, equality-oriented safeguards, and ethical governance frameworks are necessary to ensure that technological tools complement, rather than compromise, the core values of arbitration.

II. KEYWORDS

Predictive Analytics; Arbitration; Arbitral Independence; Artificial Intelligence; Algorithmic Bias.

III. INTRODUCTION

The rapid evolution of artificial intelligence and data-driven technologies has ushered in a new era in dispute resolution, fundamentally reshaping traditional legal processes. Arbitration, long regarded as a flexible, confidential, and party-centric alternative to litigation, is not immune to this transformation. Among the most notable technological innovations influencing arbitral practice is predictive analytics as a subset of AI that employs machine learning algorithms and statistical techniques to analyze historical data and forecast future outcomes.²

In the context of arbitration, predictive analytics tools are increasingly being developed and deployed to process large volumes of data derived from arbitral awards, procedural orders, institutional reports, and even arbitrator profiles. These tools claim to offer a range of functionalities: predicting the likelihood of success in a dispute, estimating the quantum of damages, identifying procedural trends, and evaluating the decision-making patterns of arbitrators. For parties and counsel, such insights can significantly enhance strategic planning, risk assessment, and decision-making at various stages of the arbitral process.³

² Anisha Sharma, *The Legal and Regulatory Challenges Posed by the Integration of Predictive Analytics (PA) into International Arbitration*, 1(2) *L. Econ. & Soc'y* 68 (2025), <https://doi.org/10.30560/les.v1n2p68>.

³ T. Michael Guiffre, Lily C. Geyer, John Laird & Alicia Clausen, *Consideration of Artificial Intelligence in Arbitration Terms of Reference*, Crowell & Moring LLP (Jan. 8, 2026), <https://www.the-arbitrators.com/news-publication/consideration-of-artificial-intelligence-in-arbitration-terms-of-reference/>.

The growing reliance on predictive analytics reflects a broader shift towards data-driven dispute resolution, where efficiency, speed, and cost-effectiveness are prioritized. In complex commercial arbitrations, where uncertainty often leads to prolonged proceedings and increased costs, predictive tools can facilitate early case assessment and encourage settlement by providing probabilistic evaluations of outcomes.⁴ Moreover, arbitral institutions and practitioners are exploring the use of such technologies to streamline case management, reduce delays, and optimize resource allocation.

However, the integration of predictive analytics into arbitration also raises profound normative and practical concerns. Arbitration derives its legitimacy not merely from efficiency, but from its foundational principles like neutrality, independence of arbitrators, party autonomy, confidentiality, and procedural flexibility. The introduction of algorithmic tools into this domain risks unsettling this delicate balance.⁵

One of the central concerns is that predictive analytics may subtly influence arbitral decision-making, thereby undermining the independence of arbitrators. Even if such tools are not formally relied upon in adjudication, their use by parties, counsel, or institutions may create indirect pressures. For instance, the availability of data on arbitrator tendencies could encourage strategic appointments based on perceived predispositions, potentially compromising neutrality. Similarly, arbitrators exposed to predicted outcomes may experience cognitive anchoring, where statistical forecasts unconsciously shape their reasoning.⁶

Another significant issue relates to the standardization of arbitral outcomes. Arbitration is valued for its ability to deliver individualized justice tailored to the specific facts and circumstances of each case. Predictive analytics, by relying on patterns derived from past

⁴ Chartered Inst. of Arbitrators, *Guideline on the Use of AI in Arbitration* (Sept. 2025), https://www.ciarb.org/media/bpndtcgu/guideline-on-the-use-of-ai-in-arbitration_updated-sept-2025.pdf.

⁵ Aaeen Zehra, *Tech-ing Arbitration to the Next Level: The Transformative Role of Technology in International Dispute Resolution*, 7(3) *Int'l J. Legal Sci. & Innovation* 393 (2025), <https://ijlsi.com/wp-content/uploads/Tech-ing-Arbitration-to-the-Next-Level.pdf>

⁶ *ibid*

decisions, may encourage conformity and reduce the scope for nuanced adjudication. This could gradually transform arbitration into a more rigid and precedent-driven system, contrary to its original design.

Further, the use of predictive analytics raises concerns about data integrity, bias, and representativeness. Arbitral data is often limited, fragmented, and confidential, which may result in incomplete or skewed datasets. Algorithms trained on such data may reproduce or even amplify existing biases, leading to unreliable or inequitable predictions. The lack of transparency in many AI systems often described as the “black box” problem exacerbates these concerns, making it difficult to scrutinize or challenge the basis of predictions.⁷

Additionally, issues of access and fairness come to the forefront. Advanced predictive tools may be accessible primarily to well-resourced parties, creating information asymmetries that undermine the equality of arms a core principle of procedural fairness. This technological divide could disproportionately disadvantage smaller parties or those from developing jurisdictions.

The tension between innovation and principle thus lies at the heart of this discourse. While predictive analytics offers undeniable benefits in enhancing efficiency and reducing uncertainty, its unregulated or excessive use may compromise the very attributes that make arbitration an attractive mode of dispute resolution.

Against this backdrop, this paper seeks to critically examine whether predictive analytics operates as a facilitative tool that enhances arbitral efficiency or whether it poses a latent threat to arbitral independence and integrity. It interrogates the extent to which algorithmic decision-support systems can coexist with the human-centric nature of arbitration without eroding its foundational values. By situating the discussion within broader debates on technology, law, and governance, the paper aims to contribute to an

⁷ Sophie Nappert, *The Impact of Artificial Intelligence on the Duties, Qualifications, and Selection of International Arbitrators*, Oxford Law Pro (Dec. 18, 2025), <https://academic.oup.com/info-oxford-law-pro/pages/artificial-intelligence-arbitrators>

emerging body of scholarship that calls for a balanced and principled integration of AI into dispute resolution.⁸

Ultimately, the inquiry is not whether predictive analytics should be adopted in arbitration, but rather how it should be regulated, limited, and ethically deployed to ensure that it complements rather than compromises the autonomy, neutrality, and legitimacy of the arbitral process.

A. Research Objectives

The study seeks to achieve the following objectives:

1. To examine the efficiency-enhancing applications of predictive analytics in arbitration, including early case assessment, settlement facilitation, procedural streamlining, resource allocation, and reduction of uncertainty.
2. To critically assess the risks that predictive analytics may pose to arbitral independence, neutrality, adjudicatory discretion, confidentiality, equality of arms, and procedural fairness.
3. To examine emerging legal, regulatory, and soft-law responses to the use of artificial intelligence and predictive analytics in arbitration, including institutional guidelines and comparative regulatory approaches.
4. To propose safeguards that permit responsible technological innovation while preserving the human-centred legitimacy and foundational principles of arbitration.

B. Research Questions

The study addresses the following research questions:

1. To what extent can predictive analytics enhance efficiency, predictability, and strategic decision-making in arbitral proceedings?

⁸ *ibid*

2. Does reliance on predictive analytics compromise arbitral independence, neutrality, adjudicatory discretion, or procedural fairness?
3. What legal, regulatory, ethical, and institutional safeguards can reconcile the efficiency gains of predictive analytics with the legitimacy and independence of arbitration?

C. Research Methodology

This paper adopts a doctrinal, analytical, and comparative research methodology. The doctrinal component examines arbitral rules, relevant principles of international arbitration, judicial decisions, statutory and regulatory frameworks, institutional guidelines, and emerging soft-law instruments governing or informing the use of artificial intelligence and predictive analytics in arbitration. The analytical component evaluates the interaction between technological efficiency and foundational arbitral principles, with particular attention to independence, neutrality, confidentiality, transparency, procedural fairness, and adjudicatory discretion.

The comparative dimension considers the approaches adopted by arbitral institutions and selected legal and regulatory frameworks, including the Chartered Institute of Arbitrators (CI Arb) Guideline on the Use of AI in Arbitration, the Silicon Valley Arbitration & Mediation Center (SVAMC) Guidelines on the Use of Artificial Intelligence in Arbitration, and the European Union's Artificial Intelligence Act. The study also considers recent judicial developments concerning AI-assisted arbitral decision-making. Secondary scholarship in arbitration, data governance, and algorithmic accountability is used to contextualise the legal analysis.

The study is subject to the limitations inherent in doctrinal research on arbitration and emerging technology. Arbitral confidentiality means that a substantial body of awards and procedural material is not publicly accessible, limiting the representativeness of available datasets and case law. In addition, regulatory and technological developments in artificial intelligence are rapidly evolving; consequently, the analysis focuses on materials available and identifiable at the time of revision.

IV. CONCEPTUAL FRAMEWORK: PREDICTIVE ANALYTICS IN ARBITRATION

Predictive analytics, as a branch of data-driven decision-making, involves the application of machine learning algorithms, statistical modeling, and data mining techniques to analyze historical information and generate probabilistic forecasts about future events. In the legal domain, and particularly in arbitration, predictive analytics represents a shift from intuition-based strategy to evidence-based and data-informed decision-making.

At its core, predictive analytics operates by identifying patterns, correlations, and trends within large datasets. These datasets may include past arbitral awards, procedural orders, institutional statistics, and, in some cases, metadata relating to arbitrators and case timelines. By training algorithms on such data, predictive systems attempt to simulate how similar disputes have been resolved in the past and project likely outcomes in future cases.⁹

In arbitration, predictive analytics includes:

1. **Outcome Prediction:** One of the most prominent uses of predictive analytics is the estimation of the likelihood of success of claims or defenses. By analyzing prior awards involving similar legal issues, industries, or factual matrices, these tools generate probabilistic assessments of case outcomes. Such predictions assist parties and counsel in evaluating the merits of their positions, thereby informing litigation strategy, settlement decisions, and risk management.
2. **Damages Assessment:** Predictive tools are also employed to forecast the potential quantum of damages. By examining patterns in compensation awarded in comparable disputes taking into account variables such as jurisdiction, sector, contractual terms, and tribunal composition these systems provide an approximate valuation of claims. This function is particularly valuable in high-

⁹ Supra note 4

stakes commercial arbitration, where damages calculations can be complex and uncertain.

3. **Arbitrator Analytics:** Another significant application is the profiling of arbitrators based on their past decisions, procedural preferences, and interpretative tendencies. Predictive analytics platforms may generate insights into how specific arbitrators have ruled on certain issues, their average timeframes for rendering awards, or their inclination toward particular procedural approaches. While such information can enhance transparency and inform arbitrator selection, it also raises concerns regarding strategic behavior and potential challenges to arbitral neutrality. The profiling dimension can be illustrated by contemporary arbitration research platforms such as the GAR Arbitrator Research Tool (ART) and Jus Connect. GAR's ART provides information concerning arbitrators' experience, approaches, procedural preferences, professional connections, and access to awards, while Jus Connect offers data-backed arbitrator profiles and analytics drawn from publicly available arbitration information. Such platforms can improve transparency and assist parties in informed selection, but they also demonstrate how historical data can be converted into behavioural profiles. If treated as predictive indicators rather than contextual information, these profiles may encourage tactical appointments, forum shopping, or expectations that an arbitrator will decide in accordance with an identified statistical tendency.¹⁰
4. **Procedural Optimization:** Predictive analytics can further contribute to procedural efficiency by forecasting timelines, identifying potential delays, and recommending optimal case management strategies. By analyzing historical data on case duration and procedural steps, these tools enable institutions and tribunals to streamline proceedings, allocate resources effectively, and reduce unnecessary delays.

¹⁰ Global Arbitration Review, "Arbitrator Research Tool," available at <https://globalarbitrationreview.com/tools/arbitrator-research-tool>; Jus Connect, "Arbitrator Profiles," available at <https://jusconnect.com/en/arbitrator-profiles>.

5. **Data Dependency and Structural Limitations:** Despite its promising applications, predictive analytics in arbitration is fundamentally dependent on the availability, quality, and representativeness of data. Unlike litigation systems, where judgments are often publicly accessible, arbitration is characterized by a high degree of confidentiality. As a result, the datasets used for predictive modeling are frequently incomplete, anonymized, or selectively disclosed. This creates several structural limitations:

- **Data Scarcity:** A limited pool of publicly available awards restricts the robustness of predictive models.
- **Selection Bias:** Published awards may not be representative of the broader universe of arbitral decisions, leading to skewed predictions.
- **Contextual Variability:** Arbitration cases are highly fact-specific, and subtle differences in contractual terms or evidentiary contexts may not be adequately captured by algorithms.
- **Dynamic Legal Standards:** Changes in legal principles, industry practices, or regulatory frameworks may render historical data less reliable as a predictor of future outcomes.

Moreover, the reliance on historical data raises concerns about path dependency, where past patterns disproportionately influence future predictions, potentially reinforcing existing trends and limiting the scope for doctrinal evolution.

6. **Conceptual Tension: Data-Driven Logic vs. Arbitral Flexibility:** The integration of predictive analytics into arbitration highlights a deeper conceptual tension between data-driven standardization and adjudicatory discretion. Arbitration has traditionally been valued for its flexibility, allowing tribunals to tailor procedures and outcomes to the specific circumstances of each dispute. Predictive analytics, by contrast, operates on the logic of generalization and pattern recognition.

V. EFFICIENCY GAINS THROUGH PREDICTIVE ANALYTICS

The integration of predictive analytics into arbitration has been widely justified on the ground of enhanced efficiency, addressing long-standing concerns regarding cost, delay, and uncertainty in arbitral proceedings. By leveraging data-driven insights, predictive tools enable parties, counsel, and arbitral institutions to make more informed and strategic decisions at various stages of the dispute resolution process. These efficiency gains are particularly significant in complex commercial arbitrations, where unpredictability often results in prolonged proceedings and escalating costs.

A. Early Case Assessment

One of the most valuable contributions of predictive analytics lies in its ability to facilitate early case assessment. Traditionally, parties rely on legal expertise and subjective judgment to evaluate the merits of their claims or defenses. Predictive tools, however, introduce an additional layer of objectivity by analyzing patterns from past arbitral decisions involving similar legal and factual issues.

This allows parties to:

1. Assess the probability of success with greater precision
2. Identify strengths and vulnerabilities in their arguments
3. Make informed choices regarding whether to initiate, defend, or withdraw claims

Such early-stage clarity can significantly reduce unnecessary litigation and promote strategic efficiency. It also enhances client counseling, enabling lawyers to provide more realistic expectations regarding potential outcomes.

B. Promotion of Settlement

Predictive analytics plays a crucial role in encouraging settlement negotiations by reducing informational asymmetry and uncertainty. Arbitration often involves high levels of unpredictability, which may discourage parties from engaging in early

settlement discussions. By providing probabilistic forecasts of outcomes and damages, predictive tools help parties better understand the likely trajectory of the dispute.

This has several implications:

1. Parties are more likely to engage in good-faith negotiations
2. Unrealistic claims or defenses may be moderated
3. Settlement discussions can occur at earlier stages of the dispute

As a result, predictive analytics contributes to reducing the time and financial burden associated with full arbitral proceedings, aligning with the broader objective of efficient dispute resolution.

C. Procedural Streamlining

Another significant efficiency gain is observed in procedural optimization. Arbitration proceedings are often criticized for procedural delays and lack of uniformity in timelines. Predictive analytics can address these concerns by analyzing historical data on case duration, procedural steps, and institutional practices.

AI-driven insights can:

1. Forecast likely timelines for different stages of arbitration
2. Identify procedural bottlenecks and potential delays
3. Suggest optimized scheduling and case management strategies

Arbitral institutions and tribunals can use these insights to design more structured and time-bound proceedings, thereby enhancing overall efficiency without compromising procedural fairness.

D. Resource Allocation

Predictive analytics also enables more effective allocation of resources for both legal practitioners and arbitral institutions. By predicting case complexity, duration, and potential outcomes, stakeholders can plan their financial, human, and technological resources more efficiently.

For instance:

1. Law firms can allocate appropriate legal teams based on case demands
2. Clients can budget litigation costs more accurately
3. Arbitral institutions can manage caseloads and administrative resources effectively

This targeted allocation reduces waste, enhances productivity, and ensures that resources are deployed where they are most needed.

E. Reduction of Uncertainty and Enhancement of Predictability

A broader efficiency benefit lies in the reduction of uncertainty, which has historically been a defining feature of arbitration. While flexibility is a strength, excessive unpredictability can undermine confidence in the process. Predictive analytics introduces a degree of structured foresight, enabling parties to anticipate possible outcomes and plan accordingly.

This enhanced predictability:

1. Improves decision-making at all stages of arbitration
2. Reduces strategic guesswork
3. Contributes to a more stable and reliable dispute resolution framework

F. Overall Impact on Arbitral Efficiency

Taken together, these advantages demonstrate that predictive analytics has the potential to transform arbitration into a more cost-effective, time-efficient, and strategically informed process. It aligns with the increasing global demand for expedited dispute resolution, particularly in commercial contexts where delays can have significant economic consequences.

However, while these efficiency gains are substantial, they must be evaluated alongside the potential risks to arbitral independence and fairness. The challenge lies not in

rejecting predictive analytics, but in ensuring that its pursuit of efficiency does not come at the expense of the core principles that underpin arbitration.

VI. RISKS TO ARBITRAL INDEPENDENCE

The increasing reliance on predictive analytics in arbitration raises significant concerns regarding the preservation of arbitral independence and neutrality. A primary issue lies in algorithmic bias and data limitations, as predictive models are inherently dependent on the quality and scope of the datasets on which they are trained. Given the confidential and fragmented nature of arbitral data, such datasets are often incomplete or unrepresentative, leading to potentially skewed or biased predictions. These limitations may distort legal assessment and reinforce existing patterns rather than reflect the full diversity of arbitral practice.

Furthermore, the growing use of predictive tools risks promoting the standardization of outcomes, which stands in tension with arbitration's core strength—its flexibility and capacity to deliver individualized justice based on the specific facts of each case. By encouraging reliance on historical patterns, predictive analytics may subtly constrain adjudicatory discretion and reduce the scope for nuanced decision-making.

In addition, the emergence of arbitrator analytics raises concerns about strategic behavior and the erosion of neutrality. Profiling arbitrators based on past decisions may lead parties to engage in “forum shopping” or tactical appointments, thereby undermining the impartiality of the arbitral process. Equally concerning is the potential for a cognitive anchoring effect, wherein arbitrators exposed to predicted outcomes may consciously or unconsciously align their reasoning with algorithmic forecasts rather than exercising independent judgment.

This influence, though indirect, poses a serious challenge to the integrity of adjudication. Moreover, disparities in access to advanced predictive tools create information asymmetries between parties, particularly disadvantaging those with fewer resources. Such inequality threatens the principle of procedural fairness and equality of arms, which

are essential to the legitimacy of arbitration. Collectively, these risks underscore the need for cautious and regulated integration of predictive analytics to ensure that efficiency gains do not come at the cost of arbitral independence.

A recent judicial development illustrates that the risks associated with AI-assisted arbitral reasoning are no longer purely theoretical. In *Association des ressources intermédiaires d'hébergement du Québec (ARIHQ) c. Santé Québec – Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal*, 2026 QCCS 1360 (22 April 2026), the Superior Court of Québec annulled an arbitral award after finding that the doctrinal and jurisprudential authorities relied upon by the arbitrator were non-existent or hallucinated. The Court concluded that the arbitrator had effectively abdicated his role of reviewing the result and that the defect undermined the integrity and reliability of the arbitral process.

The judgment is particularly relevant to the cognitive-anchoring concern identified above: where an arbitrator accepts AI-generated outputs or authorities without independent verification, the technology may cease to be merely assistive and may influence the substantive reasoning process. The case therefore demonstrates the potential for AI misuse to generate not only ethical concerns but also concrete risks of annulment and challenges to the validity of arbitral awards. At the same time, the Court expressly recognised that not every use of AI or every erroneous citation would necessarily justify annulment; the seriousness of the procedural defect and its impact on the award remain material considerations.

VII. LEGAL AND ETHICAL CHALLENGES

The integration of predictive analytics into arbitration gives rise to complex legal concerns, particularly in relation to transparency and accountability. Many AI systems function as “black boxes,” where the internal logic and reasoning behind predictions remain opaque even to their developers.

This lack of explainability makes it difficult for parties, counsel, and arbitrators to scrutinize or challenge the basis of algorithmic outputs, thereby raising serious questions about accountability and procedural fairness. In a system where reasoned decision-making is central to legitimacy, reliance on opaque technological tools risks undermining trust in the arbitral process. Closely linked to this is the issue of confidentiality, a cornerstone of arbitration. The use of arbitral data often derived from confidential proceedings for training predictive models may conflict with privacy obligations and institutional rules, especially where data is anonymized but still potentially traceable or sensitive in nature.

In addition to these legal concerns, the rise of predictive analytics exposes significant regulatory and ethical gaps within existing arbitration frameworks. Most arbitral rules and national laws have yet to meaningfully address the role of AI in dispute resolution, resulting in uncertainty and the absence of standardized safeguards. This regulatory vacuum creates risks of inconsistent practices and unchecked reliance on technology.

From an ethical standpoint, predictive analytics raises critical questions regarding fairness, bias, and the preservation of adjudicatory discretion. Algorithms trained on incomplete or biased datasets may perpetuate systemic inequalities, while excessive reliance on predictive outputs may erode the independent judgment of arbitrators. These challenges highlight the urgent need for the development of clear guidelines, ethical standards, and governance mechanisms to ensure that technological innovation in arbitration remains aligned with its foundational principles of justice and fairness.

A further regulatory development is the European Union Artificial Intelligence Act, Regulation (EU) 2024/1689. Article 6(2), read with Annex III, classifies specified AI systems used in the administration of justice as high-risk. Annex III, point 8(a), expressly covers AI systems intended to be used by a judicial authority or on its behalf to assist in researching and interpreting facts and the law and applying the law to concrete facts, and extends the category to similar uses in alternative dispute resolution where the outcome produces legal effects for the parties.

The Regulation also emphasises that AI may support judicial decision-making but should not replace human decision-making. For arbitration connected with the EU regulatory environment, this framework is significant because it reinforces the principle that AI-assisted analysis must remain subject to meaningful human oversight, transparency, risk management, and accountability. However, the regulatory timeline must be read in light of Regulation (EU) 2026/1744, the Digital Omnibus on AI, which entered into force on 27 July 2026 and deferred the application of the high-risk obligations for standalone Annex III systems from 2 August 2026 to 2 December 2027.

This deferral affects the timing of compliance, not the underlying high-risk classification of AI systems used in qualifying ADR contexts. Nor does it displace the AI Act's transparency obligations under Article 50, which remain applicable on their own timetable. Accordingly, predictive analytics used in arbitration may continue to fall within the high-risk framework where it satisfies Annex III, point 8(a), but the principal Annex III high-risk compliance duties will bind such standalone systems from 2 December 2027.

The consequences of inappropriate reliance on predictive analytics may also extend to the validity and enforceability of arbitral awards. Article 34(2)(a)(iv) of the UNCITRAL Model Law permits a court to set aside an award where the composition of the arbitral tribunal or the arbitral procedure was not in accordance with the parties' agreement or, failing such agreement, with the law of the seat. At the enforcement stage, Article V(1)(d) of the New York Convention similarly permits refusal of recognition and enforcement where the composition of the tribunal or the arbitral procedure was not in accordance with the parties' agreement or the law of the country where the arbitration took place.

These provisions do not mean that any use of AI automatically invalidates an award. Rather, they become relevant where AI-assisted practices result in a material procedural irregularity, departure from agreed procedure, impairment of the tribunal's independent

decision-making, or another defect capable of affecting the integrity of the arbitral process.¹¹

Among the most significant developments in this soft-law landscape are the SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration, first published on 30 April 2024. The Guidelines provide a principle-based framework applicable to participants in domestic and international arbitration and are organised around provisions of general application, provisions concerning parties and counsel, and provisions concerning arbitrators.

Their approach is particularly relevant to the present study because it treats AI as a tool to be used within a human-controlled arbitral process and addresses issues including disclosure, confidentiality, verification, and the responsible use of AI by arbitrators and other participants. The SVAMC framework therefore complements the CIArb Guideline and supports the broader proposition that AI should remain assistive rather than determinative.¹²

VIII. COMPARATIVE PERSPECTIVES

A comparative assessment reveals that responses to AI and predictive analytics in arbitration are developing along different regulatory models. The European Union represents the most formal and binding approach. Under Regulation (EU) 2024/1689, AI systems used by or on behalf of judicial authorities to assist in researching and interpreting facts and law, and similar uses in alternative dispute resolution where outcomes produce legal effects for parties, fall within the high-risk category under Article 6(2) read with Annex III, point 8(a). This model subjects qualifying systems to structured

¹¹ UNCITRAL, Model Law on International Commercial Arbitration (1985), with amendments adopted in 2006, art. 34(2)(a)(iv), https://uncitral.un.org/en/texts/arbitration/modellaw/commercial_arbitration; Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, 1958), art. V(1)(d), UNCITRAL, https://uncitral.un.org/en/texts/arbitration/conventions/foreign_arbitral_awards.

¹² Silicon Valley Arbitration & Mediation Center (SVAMC), Guidelines on the Use of Artificial Intelligence in Arbitration (1st ed., 30 Apr. 2024), <https://svamc.org/wp-content/uploads/SVAMC-AI-Guidelines-First-Edition.pdf>.

obligations concerning risk management, transparency, data governance, human oversight, and accountability, although Regulation (EU) 2026/1744 has deferred the principal compliance date for standalone Annex III high-risk systems to 2 December 2027.

By contrast, the leading international arbitration community has largely proceeded through soft-law and institution-led guidance. The SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration adopt a principle-based framework addressing AI use by parties, counsel, arbitrators, and arbitral institutions, with particular emphasis on disclosure, confidentiality, verification, and the non-delegation of arbitrators' decision-making functions. Similarly, the CIArb Guideline on the Use of AI in Arbitration is directed at enabling beneficial use of AI while mitigating risks to procedural rights, arbitral integrity, and enforceability. These instruments are not binding legislation, but they are significant because they translate general AI-governance principles into arbitration-specific duties of competence, scrutiny, and human responsibility.

Institutional practice in Asia reflects a more procedural and efficiency-oriented approach. Singapore, through SIAC, has not adopted a comprehensive AI-specific regulatory code comparable to the EU model. Instead, the SIAC Rules 2025 emphasize procedural innovation, including the Streamlined Procedure, Preliminary Determination, Coordinated Proceedings, Emergency Arbitrator enhancements, and SIAC Gateway as an online case-management system. This approach demonstrates a preference for technology-enabled efficiency and institutional administration rather than direct regulation of predictive analytics as a high-risk tool.

Hong Kong presents a similar but distinct model. The HKIAC Administered Arbitration Rules 2024 expressly require tribunals to adopt suitable procedures having regard to, among other matters, the effective use of technology, information security, and environmental impact, while preserving equal treatment and the parties' reasonable opportunity to present their case. Hong Kong's framework therefore integrates technology through case-management discretion and procedural safeguards, rather than by creating AI-specific obligations for predictive systems.

The United States provides another contrast through JAMS, which has adopted dedicated Artificial Intelligence Disputes Clause and Rules for disputes involving AI systems. These rules are narrower than the EU AI Act because they are contractual and institutional rather than public-law regulation; however, they are more AI-specific than the general procedural reforms adopted by institutions such as SIAC and HKIAC. JAMS therefore illustrates a sector-specific arbitral response, focused on managing AI-related disputes through party agreement and institutional procedure.

These comparisons show the absence of a uniform global framework governing predictive analytics in arbitration. The EU prioritizes binding ex ante risk regulation; SVAMC and CIArb emphasize soft-law governance and ethical duties; SIAC and HKIAC focus on procedural efficiency, technology use, and information security; and JAMS offers AI-specific institutional rules for AI-related disputes. For arbitration, the most workable future model is likely to combine these approaches: binding safeguards where AI affects legal rights, soft-law duties of disclosure and verification, and institution-level procedural controls to preserve confidentiality, equality of arms, and arbitral independence.

IX. SUGGESTIONS AND RECOMMENDATIONS

The following safeguards are proposed to reconcile the efficiency benefits of predictive analytics with the independence, neutrality, confidentiality, party autonomy, and procedural fairness that underpin arbitration:

1. Adopt a human-in-the-loop principle: predictive analytics should remain strictly assistive, and the arbitrator must retain full and independent decisional authority. No arbitral award should be determined by an algorithmic prediction.
2. Require appropriate disclosure and transparency: where predictive or generative AI materially informs submissions, procedural strategy, or arbitral reasoning, parties and tribunals should consider proportionate disclosure sufficient to permit meaningful scrutiny without compromising legitimate confidentiality.

3. Strengthen verification duties: arbitrators, counsel, and parties should independently verify AI-generated authorities, factual assertions, statistical outputs, and other material content before relying upon them. The ARIHQ decision demonstrates the consequences of failing to perform such verification.
4. Protect confidentiality and data governance: confidential arbitral records should not be uploaded to AI systems or used for model training without an appropriate legal basis, contractual authority, security safeguards, and compliance with applicable institutional and data-protection requirements.
5. Address algorithmic bias and dataset limitations: users should evaluate the provenance, representativeness, completeness, and temporal relevance of datasets before treating predictive outputs as reliable indicators. Historical patterns should not be treated as neutral or inevitable predictors of future decisions.
6. Safeguard equality of arms and access: arbitral institutions should consider measures that prevent technologically sophisticated parties from obtaining an unfair informational advantage, including procedural directions concerning the use and disclosure of AI-assisted tools.
7. Develop institutional and professional governance: arbitral institutions, regulators, and professional bodies should adopt clear guidance on permissible AI uses, record-keeping, confidentiality, verification, disclosure, human oversight, and consequences for misuse. The CIArb and SVAMC frameworks provide useful foundations for such governance.
8. Align AI use with challenge and enforcement standards: procedural rules and institutional guidance should recognise that material AI-related irregularities may have consequences under applicable set-aside and enforcement regimes, including Article 34(2)(a)(iv) of the UNCITRAL Model Law and Article V(1)(d) of the New York Convention.

X. CONCLUSION

Predictive analytics undoubtedly represents a transformative shift in the landscape of arbitration, introducing a data-driven dimension to what has traditionally been a flexible and party-centric mode of dispute resolution. Its capacity to enhance efficiency, predictability, and strategic decision-making through early case assessment, streamlined procedures, and optimized resource allocation makes it an attractive tool for parties, counsel, and arbitral institutions alike. In an era where commercial actors increasingly demand speed and cost-effectiveness, predictive analytics aligns well with the evolving expectations of modern dispute resolution systems.

However, these advantages must be weighed against the systemic risks that such technologies pose to the foundational principles of arbitration. The potential for algorithmic bias, standardization of outcomes, strategic manipulation through arbitrator profiling, and cognitive influence on decision-makers raises serious concerns about arbitral independence, neutrality, and fairness. If left unregulated, predictive analytics could gradually transform arbitration from a process grounded in individualized justice and adjudicatory discretion into one influenced by statistical probabilities and data-driven conformity. Such a shift would undermine the very attributes that distinguish arbitration from traditional litigation.

Accordingly, this study emphasizes that predictive analytics should be confined to a strictly assistive role, supporting but never supplanting human judgment. The preservation of arbitral legitimacy requires the establishment of robust regulatory frameworks, the enforcement of transparency and disclosure standards, and the development of comprehensive ethical guidelines governing AI usage. Additionally, ensuring equitable access to technological tools is essential to maintaining procedural fairness and the equality of arms between parties.

Ultimately, the future of arbitration lies not in resisting technological innovation, but in responsibly integrating it. The challenge is to strike a principled balance one that harnesses the efficiency and analytical power of predictive systems while safeguarding

the core values of independence, neutrality, confidentiality, and party autonomy. Only through such a balanced approach can arbitration continue to evolve as a credible, fair, and effective mechanism for resolving disputes in the digital age.

XI. BIBLIOGRAPHY

A. Cases

1. *Association des ressources intermédiaires d'hébergement du Québec (ARIHQ) c. Santé Québec – Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal*, 2026 QCCS 1360, Superior Court of Québec, 22 April 2026.

B. Legislation, Regulations and Treaties

1. Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, Article 6(2) and Annex III, point 8(a).
2. Regulation (EU) 2026/1744 of the European Parliament and of the Council of 8 July 2026, amending Regulation (EU) 2024/1689 as regards simplification of the implementation of harmonised rules on artificial intelligence.
3. UNCITRAL, *Model Law on International Commercial Arbitration* (1985), with amendments adopted in 2006, Article 34(2)(a)(iv).
4. Convention on the Recognition and Enforcement of Foreign Arbitral Awards, New York, 1958, Article V(1)(d).

C. Institutional Guidelines, Rules and Arbitration Resources

1. Chartered Institute of Arbitrators, *Guideline on the Use of AI in Arbitration*, updated September 2025.
2. Silicon Valley Arbitration & Mediation Center, *Guidelines on the Use of Artificial Intelligence in Arbitration*, 1st ed., 30 April 2024.
3. Global Arbitration Review, *Arbitrator Research Tool*.
4. Jus Connect, *Arbitrator Profiles*.

5. Singapore International Arbitration Centre, *SIAC Rules 2025* and SIAC Gateway materials.
6. Hong Kong International Arbitration Centre, *HKIAC Administered Arbitration Rules 2024*.
7. JAMS, *Artificial Intelligence Disputes Clause and Rules*.

D. Secondary Sources

1. Anisha Sharma, "The Legal and Regulatory Challenges Posed by the Integration of Predictive Analytics (PA) into International Arbitration," *Law, Economy and Society*, Vol. 1, Issue 2, 2025.
2. T. Michael Guiffre, Lily C. Geyer, John Laird and Alicia Clausen, "Consideration of Artificial Intelligence in Arbitration Terms of Reference," Crowell & Moring LLP, 8 January 2026.
3. Aaeen Zehra, "Tech-ing Arbitration to the Next Level: The Transformative Role of Technology in International Dispute Resolution," *International Journal of Legal Science and Innovation*, Vol. 7, Issue 3, 2025.
4. Sophie Nappert, "The Impact of Artificial Intelligence on the Duties, Qualifications, and Selection of International Arbitrators," *Oxford Law Pro*, 18 December 2025.