

The Impact of Artificial Intelligence on International Commercial Arbitration

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Abstract

This study examines the Impact of AI on International Commercial Arbitration. It highlights the implications of AI in resolving cross-border commercial disputes between parties to transactions through arbitration. This study relies on the qualitative approach, analytical methods to achieve the objectives of this study. It focuses on the analysis, evaluation and review of previous literature and critically examines the challenges and issues that arise in this process. The continuous development of new technologies presents many new challenges related to how to integrate the use of AI to manage the arbitration process. To determine whether the existing legislative framework is adequately broad to comprise AI in arbitration, this study examines international agreements, some national laws and arbitration conventions, such as UNCITRAL, and the New York Convention 1958. It was found that there are different attitudes about replacing human arbitration with AI arbitration. Further, with respect to the recognition and enforcement of foreign arbitral awards rendered by AI they may be valid and enforceable to the same level as domestic awards, although they may face several challenges such as public policy issue. To make sure that international commercial arbitration remains effective amidst the rapid development of AI, it is vital to expand the current legal framework. This could be accomplished by modernizing existing legal provisions or introducing new provisions precisely addressing AI applications.

Keyword: AI, international commercial arbitration, AI arbitrator, New York Convention, UNICITRAL Model law.

The Impact of Artificial Intelligence on International Commercial Arbitration

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1. INTRODUCTION

AI (AI) is considered one of the core concepts in computer science and has become a foundational element in modern computer engineering. Before delving into the meaning of AI, it is important to note that the concept of AI dates back to the mid-20th century, specifically in 1950, when the scientist Alan Turing introduced the idea through what became known as the Turing Test, which assessed a machine's ability to exhibit intelligent behaviour equivalent to or indistinguishable from that of a human.

When defining AI, despite its importance in academic, industrial, commercial, and scientific institutions, there is no universally agreed-upon definition. Therefore, it is essential to classify AI based on its capabilities into three categories:

1. Narrow AI (or Weak AI): This is the type currently available and is designed to perform specific tasks.
2. General AI: This is the type, which is predicted to be available in the future, directs to fulfill any intellectual task that a human can do.
3. Super AI: This is the type visualized for the far-off future, which would exceed human intelligence in all phases.

This paper focuses on the significant role that AI plays in promoting international commercial arbitration. The rapid development of AI has extended into all aspects of life worldwide, one of which is international trade in general and the international arbitration process in particular.

As is evident, the international arbitration process is considered one of the alternative mechanisms to resolve trade disputes, and conducting this process by the artificially intelligent assistant presents exceptional results. Scholars have criticized the international arbitration process for being too slowly and costly.

The AI system works to assist the arbitration process by assisting the parties, lawyers and arbitrators and providing legal guarantees for the process. This paper highlights the benefits and opportunities of using AI in international commercial arbitration, such as (facilitating the collection and evaluation of documents, reducing procedural costs, speeding up procedural implementation, impartiality and confidentiality of parties and legal decision-making, etc.).

The research problem revolves around several challenges, the most vital of which revolves around the need to have an appropriate legal and ethical framework to keep pace with the rapid and massive advances in AI. This study investigates the competence of the current legal system in regulating technological developments resulting from the implementation of AI in international commercial arbitration as current laws cannot keep pace with this rapid development. Hence, this paper highlights the issues and challenges facing international commercial rules, laws and conventions. For example, the issue of liability plays an important role in wrongful or biased arbitration awards. This, along with several other questions, has created challenges in the legal field that require substantive solutions. Some national laws do not recognize an arbitral award issued by an AI in a foreign country, and many other problems that need to be resolved.

This study relies on the qualitative approach to achieve the objectives of this study by focusing on defining AI. What is the relationship between AI and international commercial arbitration, and identifying application areas? It also focuses on the analysis and evaluation of international commercial arbitration agreements and laws. The challenges arising from the use of AI in the arbitration process was also addressed.

2. OVERVIEW OF AI IN INTERNATIONAL COMMERCIAL ARBITRATION.

In this chapter an overview of AI in international commercial arbitration will be explained. It is divided into three main sections: The first section is devoted to definition of AI and international commercial arbitration. The second section is related to the historical development of AI and international commercial arbitration which is discussed in two sub-

sections. Lastly, the third section is devoted to the implementation and evolution of AI in international commercial arbitration process.

2.1. DEFINITION OF AI

There is no standard and universal definition for AI, and what does AI really included? However, the demands on AI are increased in various spheres of life, specifically by academic, professional, and public institutions. (Samoili, Sofia López-Cobo, Montserrat Gómez, Emilia De Prato, Giuditta Martínez-Plumed, Fernando Delipetrev, Blagoj , 2020, p. 12) This lack of unanimity on the definition and comprehension of AI creates obstacles to its regulation, but scientists and engineers have tried to recognize it in several different ways (Abad, 2024: 38).

‘The Oxford Dictionary defines ‘artificial’ as something created by a human rather than happening naturally, while ‘intelligence’ refers to the ability to obtain and apply knowledge and skills.’ Together, ‘AI’ from the theory of the evolution of computer systems, which is capable of performing specific tasks requiring human intelligence, such as perception, conversation recognition, decision-making, and language translation (Liu, 2020: 413-414)

AI has its roots going back at least to the 1950s, when Alan Turing began analysing the concept of machine intelligence. His proposal is now known as the Turing test. AI is defined as a group of technologies that lets smart machines able to simulate or add to elements of human thinking (Meyers, 2019: 3). Many scholars rely on properties of AI in its definition such as Stuart Russell and Peter Norvig who define AI as a system that is capable of performing tasks that would normally need human intelligence, like identification, decision making, innovation, learning, elaboration, development and communication (Greer, 2022: 253)

The World Intellectual Property Organization (WIPO) 1967 states that there is no global definition of AI. According to WIPO, AI is generally deemed to be a discipline of computer science aiming at developing machines and systems that are capable of carrying out tasks which normally require human intelligence. (Haugen, n.d.: 7)

We have come to the conclusion that through these definitions, AI can be defined as a system of computer science designed and programmed to behave intelligently like humans.

2.2. HISTORICAL DEVELOPMENT

The history of AI dates back to the invention of the first computer after World War II. In this section we will go through the stages of the AI boom, the most significant of which is the Golden Age of AI, a period of boundless optimism, the purpose of the 'Golden Age.' The big idea is to give all the information we have about our world to machines (Wooldridge, 2020: 11).

2.2.1. HISTORICAL DEVELOPMENT OF AI.

Although it is not easy to exactly specify the date of the emergence of AI, but its roots can be traced back to the 1940s, specifically in 1942, when American science fiction writer Isaac Asimov published his short story Runaround. At the same time, English mathematician Alan Turing worked on much little imaginative matter for the British government and evolved a code-breaker, Known as 'The Bombe' in order to decipher the Enigma code utilized by the German military in World War II, and it is considered the first electro-mechanical computer (Michael Haenlein and Andreas Kaplan, 2019: 2)

English mathematician Alan Turing, referred to as the father of current computer science, in 1950, published a research under the name 'computing Machines and Intelligence' which opened the portal to the sphere of AI. The research started with negotiating uncomplicated question 'Can machines think?' which come to be known as the Turing test. 'The imitation game,' called in the paper, it was showed as a simple test which utilized to prove that machines could think and indistinguishable from human intelligence, as Turing said, Turing said that it is impossible to notice that machines could feel if you are not the machine, therefore, there is no way to contradict or prove the claim (Smith, December 2006: 6).

The term of 'AI' (AI) in 1956 was officially introduced at the Dartmouth Conference by John McCarthy. It was a significant event in the history of AI; the conference investigated how machines can take human intelligence. John McCarthy arranged this important event at Dartmouth College, with the attendance of famous persons such as Marvin Minsky, Nathaniel Rochester, and Claude Shannon. At the same time, on this gathering McCarthy invented the phrase of (AI), aimed at inventing machines that capable to performing duties which is normally concerned to human intelligence (The History of AI, 2024: 3)

Advances in machine learning algorithms and neural networks in the 1990s have bolstered the field of AI. Machine learning is a subfield of AI that requires advanced algorithms that are able to learn from data, and neural networks are a sort of machine learning algorithm that is able to simulate the way of human brain works.

AI had solved intricate issues during the 1990s-2010s and supplied many utilitarian solutions in different implementation domains involving industrial robotics, logistics, commercial intelligence, banking software, medical symptoms, advice systems, and search machines. AI investigators started to utilize more advanced mathematical devices. Additionally, they used various names for their works, like cognitive systems, information-built systems, calculation intelligence, and utilization algorithms. The intention of the modern names was to assist in assuring financial backing (Blagoj Delipetrev, Chrisa Tsinaraki and Uroš Kostić., 2020: 14).

In the early 2010s the third wave of AI appeared, particularized in the organization of huge data, Neural network pattern identification, deep learning and entrance to extensive datasets powers the evolution of great-scale machine learning networks, it led to revolutionizing AI abilities. This progress includes different implementations of AI technology, from imitating human intelligence to AI chat bots that were capable to operation natural language, and eventually this evolution through AI paved the way for innovative design in diverse industries (Abad, 2024: 40)

During the years 2020 till now, a significant achievement in AI has been progressed, recognized as generative pre-trained transformers (GPTs). Open AI, is the pioneer behind Chat GPT, has presented some GPTs, in 2018 appearing the first GPT-1. but GPT-2 was not published to the general public, and in June 2020 GPT-3, exhibited, it considered as one of the strongest language models of its era. GPT-3's abilities extend to creating unified contexts. It can perform deferent natural language processing duties, response questions, generate poetry, formulate essays and participate in conversation. Open AI presented Chat GPT in 2022, promoting a chat based interface establish on the basis of GPT-3.5 LLM. This technological leap has catalysed increased funding (The History of AI, 2024: 4).

2.2.2. HISTORICAL DEVELOPMENT OF INTERNATIONAL COMMERCIAL ARBITRATION.

The history of arbitration 'is not narration of the expansion and innovation of principles and creeds that have apparent through long implementation, and have general validity and strength

that is opposed to the history of law. While arbitration may have existed before all earlier legitimate systems, but it has progressed no code of substantive principles, and is usually considered by exception matters of independent decision, with every single case considered according to ethical or economic patterns by a specific group. If we suppose that the arbitration is replacement of a legal proceeding managed only by the emotion and consciences of the arbitrators, and that is becomes in core a form of ethical and economic justice, or justice accordance with the nature or universality of law (WOLAVER, December,1934: 132).

International arbitration has expanded enormously over the past 40-50 years, becoming certainly the preferable form of resolution international commercial disputes universally. Although, the term of parties refers to the impartial third party dating past to ancient times to address disputes between them. Arbitration has been existed a long time before law was constructed, or the courts arranged, which comprises attending a third person who is respected, such as a tribal senior. It is thus arbitration in old times was implemented in all corners of the global. Such as China used arbitration for resolving disputes about 2100-1600 BC (Simon Greenberg, Christopher Kee and J. Romesh Weeramantry, March 2011: 3-4).

- **2.2.2.1. The globalization and international law: in early 20th century**

In the context of globalization, this research highlights the role of arbitration institutions that have contributed importantly to the evolvement of international arbitration.

The LCIA is the most ancient arbitration body in the global, established in 1891 as the Chamber of Arbitration of the City of London, officially started on 23 November 1892. In 1903, was renamed to the Court of International Arbitration, Today LCIA is one of the world's leading international bodies for the resolution business disputes, from providing the efficient solution, flexible administration and impartial management of arbitration and other ADR measures (Ferdinando Emanuele and Milo Molfa, n.d: 77).

The ICC is one of the skilful and reputable institutions for international commercial arbitration. In 1919 the International Chamber of Commerce (ICC) was established by businessman's who mentioned themselves 'peace merchants'. Which demonstrates itself such as the World Trade Organization; it is a delegated organization that speaks on behalf of firms in all sectors in each portion of world. There are some ICC committees that construct rules and guidelines, amid which arbitration is the biggest. In 1923, the Court of Arbitration was established, and is based

in Paris and has offices all over the world. In Asia, it has a secretariat office in Hong Kong and a delegate office in Singapore. The main role is to manage the arbitration by observing the ICC Rules of Arbitration. Its tasks are: (a) evaluate whether an ICC Arbitration contract essentially exists, (b) to determine the locus of arbitration, (c) to corroborate, nominate and exchange arbitrators, (d) observe the arbitration process, (e) to adjudicate any challenges recorded counter to the arbitrators, (f) explore and advocate all arbitral awards, (g) organize the costs of the arbitration, (h) observe urgent arbitration proceedings (Patrick Zheng and Jason Fry, 2012: 1).

Development a legal framework for international arbitration: after- second World War

There are two basis legal texts that have essentially contributed to the growth and generalization of international commercial arbitration:

- The UNCITRAL Model Law which supplies a legal template for nations in order to apply and harmonize their rules and regulations on arbitration.
- The Convention on the acceptance and Enforcement of external Arbitral Awards (1958), also recognized as the New York Convention, is kind of the main instruments of international arbitration. It relates to the adoption and enforcement of foreign arbitral awards. (Alonso, 2016-2017, p. 3)

After focusing on the development history of international commercial arbitration we found that modern law administrating international commercial arbitration started only in the 1920s with the acceptance of the Arbitration provisos Protocol, the agreement on the Enforcement of external Arbitral Awards and the arrangement of the ICC. until the acceptance of the 1958 New York Convention. The subsequent years were years of quick advancement. Harmonization of the arbitration procedure rapidly followed. UNCITRAL Arbitration Rules 1976 have been widely utilized and have become the model on which many institutional arbitration rules are based. And the 1985 Model Law has been the basis for most arbitration laws accepted since then (Development, 2005: 27-28).

2.3. IMPLEMENTATION AND EVOLUTION OF AI IN INTERNATIONAL COMMERCIAL ARBITRATION PROCESS.

The idea of application AI in international commercial arbitration has led to a lot of speculation. The most prominent element of AI is the substitution of human arbitrators with robotic ones.

The main goals of theory of adjustment of AI technologies in arbitration are to strengthen the regulation and quality of the procedure. To achieve this aim without human intervention needs technological attempt and global acceptance in the international commercial arbitration community. Some countries have started to apply the utilization of AI technology in their procedures. Presently Estonia is evolving an AI judge in order to address mini claims disputes of less than €7,000 (Oslo, 2021: 5-6). Similarly, China has started digital courts where millions of legal cases are decided by (smart courts) and non-humans Judges are empowered by AI and do not need the existence of citizens in court. AI has the capability to reduce the time of proceedings, reduce the cost of addressing disputes, reduce peril by increasing foreseeability, keeping away claims that have no advantage, etc. inside the domain of alternative dispute resolution (ADR), arbitration has achieved a significant position. Where party of disputes necessity a legally obligating decision without going to court, the COVID-19 pandemic has accelerated the tendency of obedience with smart technology as physical gatherings was challenging (Oslo, 2021: 5-6).

2.3.1. DEFINITION OF INTERNATIONAL COMMERCIAL ARBITRATION

Arbitration is an alternative legal system to the judiciary in settling disputes. The disputing parties do not always want to submit their conflict to the judiciary of the state, sometimes they prefer to select a specialized court themselves. Arbitration proceedings are considered a unique way to resolve commercial disputes between parties who have accepted the arbitration process (Al-Trawneh, 2017: 5). International commercial arbitration is considered as an alternative method of settling disputes, particularly these disputes that arising from cross-border commercial transactions (S. Sadhana and S. Bhuvaneswari, 2019: 3344)

International Commercial Arbitration According to the World Trade Organization which created the International Chamber of Commerce (ICC) in 1919 and in 1923 established the International Court of Arbitration to provide the framework for an independent and impartial arbitration system to determine commercial disputes between parties in different countries. The ICC has played an influential role in promoting arbitration as a mechanism for the resolution of international commercial disputes and there is need for international regulations to support the arbitration process. (Julian M D Lew, Loukas A Mestelis and Stefan M Kroll, 2003:19-20)

As it is clear that arbitration has been considered one of the forms of resolving international commercial disputes, and the New York Convention (NYC) is considered one of the most important factor for the progress of International Commercial Arbitration for resolving international trade disputes. NYC has a crucial role in regulation, recognition and enforcement of Arbitral awards (Alharbi, 2023: 1-2) The other effective International regulation rules in the context of international commercial arbitration is the United Nations Commission on International Trade Law Model Law (UNCITRAL) on International Commercial Arbitration commonly known as the Model Law, (UNCITRAL) was created with the aim of harmonizing arbitration laws, and the Model Law is non-binding instrument, but it considered as a template for legislation for arbitration law. (Franco Ferrari, Friedrich Rosenfeld and John Fellas, 2021: 10).

In general, the above definitions show that the arbitration process is considered as an alternative method of resolving commercial disputes between the parties internationally, instead of resorting to ordinary courts.

2.3.2. Recent implementations of AI in ICA

Arbitrators and advisers need a lot of time to investigating and reviewing documents. AI technologies like natural language processing are presently being utilized in ICA to investigate great documents. AI is capable to analyse large amounts of instruction, data, arbitration rules, agreement, and applicable laws - relevance to an international trade conflict. For instance, an AI application 'Kira' is helping lawyers reduce agreement review time by 20-60 percent. Also, talking identification technology is other sort of AI technology presently in utilize within the ICA, and it can be instructed to recognize the voices of determine individuals (Hunter and Greig, 1903: 2-3)

At a developed stage, AI tools are reportedly prepared to be utilized in determining arbitrators, preparing the award and automatize case administration. And AI technologies are also awaited to play another role in the ICA, for instance by suggesting the drafting of suggestions for arbitration articles and assisting attorneys to identify unsure areas in their cases. Clients can also utilize the same to determine the expertise of their legal teams. (Hunter and Greig, 1903: 3-4)

The Machine Learning System (MLS) can help the arbitration process in several ways to make some of tasks easier. These include:

1. Adjustment of measures

There are some applications that utilize MLS that are not particular to arbitrators but can assist them with scheduling and workload planning throughout the process. The main examples of these tools are Julie Desk and Instant Meeting Scheduling.

2. Analyse and group documents

Other applications utilizing MLS within legal technology frameworks that can help arbitrators during the decision-making process. Tools use for data collecting, direct transcription of meetings, data analysing, or document examination. Some of these tools are: (eBrevia, Ross Intelligence and Fireflies). There are also some other tools that utilize the MLS to predict results in international arbitration and comparison distinct judicial decisions from various courts such as Ravel and Arbilex (Socorro, 2020:19-22).

3. LEGAL CONSIDERATIONS OF AI IN INTERNATIONAL COMMERCIAL ARBITRATION

This chapter extensively discusses the validity of using AI in the field of international commercial arbitration. This chapter is mainly divided into three sections. The first section is dedicated to the legality of using AI programs in arbitration. The second section is related to the legality of appointing AI arbitrators in arbitration. Finally, it refers to the legal validity of the issuance of an arbitration award by the AI arbitrator in arbitration.

3.1. THE LEGAL VALIDITY OF USING AI APPLICATIONS IN ARBITRATION.

Legal validity of utilizing AI in arbitration starting from the international context, AI (AI) is revolutionizing the area of international arbitration, from converting and enhancing diverse aspects of the conflict solution process. It further enhances the quality of decision-making in international arbitration. This has become a requirement tool for international arbitration (Mohammad Ali Solhchi and Faraz Baghbanno , 2023: 61). Before discussing how AI is used in detail, the focus must be on the legitimacy of these uses internationally and domestically.

The main characteristic of arbitration is the principle of party autonomy. The international arbitration law has recognised this principle under (Article 19 (1) of the UNCITRAL Model Law on the Specification of Rules of Procedure in International Commercial Arbitration 1985).

Article 19(1) stipulates that ‘subject to the provisions of this Law, the parties are free to agree on the procedure to be followed by the arbitral tribunal in conducting the proceedings.’

Likewise, the 1958 New York Convention identifies the principle of autonomy of the parties in the agreement made in writing by the parties to a conflict that both make a decision to submit their present or future conflicts to arbitration (Article 2 (1) of the 1958 New York Convention).

It is worth mentioning that in 2024, the Silicon Valley Arbitration and Mediation Centre (SVAMC) published the first edition of its ‘Guidelines on the Use of AI in Arbitration.’ The aim of these guidelines is to provide a framework for the ethical and effective integration of AI tools in arbitration proceedings, guaranteeing that their utilisation maintains the principles of fairness, transparency, and efficiency. The guidelines are divided into three key chapters (SVAMC, 2024):

First: Guidelines for All Participants

These guidelines underline the need for participants to comprehend the functionalities, restrictions, and potential risks related to AI applications. It highlights the significance of protecting confidentiality and determining when the employment of AI tools shall be unveiled to uphold the integrity of the proceedings.

Second: Guidelines for Parties and Their Representatives

These guidelines underscore the accountability of parties and their legal representatives to exercise competence and diligence when using AI. They are responsible for any mistakes or imprecisions resulting from AI outputs and shall ensure that AI is not utilised to falsify evidence or mislead the tribunal.

Third: Guidelines for Arbitrators

These guidelines states that arbitrators shall not delegate their decision-making accountabilities to AI tools. While AI could help in organizing information or drafting procedural elements, the arbitrator's independent judgment remains paramount. Moreover, if arbitrators use AI-generated information not existing in the case record, they shall reveal this to the parties involved.

These guidelines serve as a reference for arbitral institutions, parties, arbitrators, and their representatives, proposing a model clause that could be integrated into procedural orders to

guarantee consistent application throughout arbitration proceedings. By founding these principles, the SVAMC intends to enable stakeholders in arbitration to harness the advantages of AI while mitigating related risks, thereby maintaining the integrity and fairness of the arbitration process.

In the National Arbitration Act at the local level, certain principles of party autonomy in arbitration are guaranteed. For example, the Indian Arbitration and Conciliation Act, 1996 provides in Section 19 (2) that the parties to a dispute have the right to agree on the procedure to be followed by the arbitral tribunal. Similarly, the Singapore Arbitration Act 2011 at section 23(1) as well as the Malaysian Arbitration Act 2005 (Act 646) at section 21(1) adopts this principle. In this context, they argue, parties are free to shape themselves with rules as they wish and need (Mohammad Azam Hussain, Mohamad Fateh Labanieh, Nazli Mahdzir, Nooraini Sulaiman & Omar Saleh Abdullah Bawazir, 2023: 105-106). Regarding Iraq, although there is no specific law addressing arbitration, such issue is regulated in the Act of Civil Procedure, No. 83 of 1969 from Article 251 to 276 which gives such autonomy to the parties in dispute.

In light of that argument, Article 19 (1) UNCITRAL Model Law, Singapore Arbitration Act 2011 section 23(1), and Malaysian Arbitration Act 2005 (Act 646) section 21(1), may play an important role in enabling parties to resolve their disputes using AI systems arbitration in the arbitration process.

The exception to the above is the principle of the due process. In specific, section 20 of the Malaysian mediation law 2005 (Act 646) and section 22 of the Singapore Arbitration law 2011 provide that the parties must be treated fairly and impartially by the arbitral tribunal, and given a reasonable opportunity to present their case. Likewise, Article 18 of the UNCITRAL Model Law states that 'parties shall be treated equally and each party shall be granted a full chance to provide its case'.

Differently, the arbitral award will be set aside under section 37 (1)(a)(iii) of the Malaysian mediation law 2005 (Act 646), section 48(1) (a)(iii) of the Singapore mediation law 2011, and s 34(2)(a)(ii). For this reason, to ensure that procedural fairness should not be undermined during arbitration in proceedings, relevant lawmakers should remodel the rules explained above to assist and support the utilizing of AI systems to help human arbitrator. This can be attained when these rules accept the utilizing of AI systems to help human arbitration; this is

relevant to some factors, like acceptance by the parties and equal retrieve to AI systems (Mohammad Azam Hussain, Mohamad Fateh Labanieh, Nazli Mahdzir, Nooraini Sulaiman & Omar Saleh Abdullah Bawazir, 2023: 105-106).

3.2. THE LEGAL VALIDITY OF APPOINTING AN AI ARBITRATOR IN ARBITRATION.

After having found that arbitration parties have legal legitimacy under the laws of some countries to use AI systems in the arbitration process, it is important to highlight whether arbitration parties can appoint AI as an arbitrator. That is, can arbitration parties replace human arbitration with AI arbitrator.

Several domestic arbitration laws expressly state that the arbitrator must be a human being. For example, the French Act of Civil Procedure 2007 under Article 1450(1) states that ‘only a natural person having full capacity to exercise his or her rights may act as an arbitrator’. Moreover, other domestic arbitration laws require the arbitrator to be able of utilizing his civil rights. For example, the Peruvian Arbitration Law states in Article 4.1.2 that any person with full civil rights and without international criminal convictions could be determined as an arbitrator. Moreover, Article 26 of the UK Arbitration Law of 1996 also deals with the matter of the death of an arbitrator. This means that the arbitrator must be human. Hence, based on the mentioned rules, parties are not entitled to appoint AI as an arbitrator.

Nevertheless, the Malaysian Arbitration Law 2005 (Act 646) does not explicitly address the validity of determining an AI as a human arbitrator, because in the definition of an arbitral tribunal, it does not clearly forbid or approve the utilization of an AI arbitrator. Conversely, the Malaysian Arbitration Law 2005 (Act 646) includes some provisions that make particular reference to an arbitrator as a ‘human’. The same controversy applies to Singapore Arbitration Law 2011, the Indian Arbitration and Conciliation Law 1996 and the UNCITRAL Model Law on International Commercial Arbitration of 1985. For greater legal guaranty, there is an argument arguing that the existed legal gap in the abovementioned law can be interpreted in a way that entitles the arbitration parties to appoint an AI arbitrator. This can be achieved when redefining the terms of the arbitral tribunal in a way that consents or declines the appointment of an AI arbitrator (Mohammad Azam Hussain, Mohamad Fateh Labanieh, Nazli Mahdzir, Nooraini Sulaiman & Omar Saleh Abdullah Bawazir, 2023).

During the above argument, it became clear that there are different attitudes to the appointment of AI as an arbitrator in the arbitration process, so these national laws or relevant international agreements need to be modernized to keep pace with rapid technological advancements. We believe that regulating such issue in a way that appointment of AI as an arbitrator should be allowed is necessary as it may have various advantages to the parties in dispute including reduction of cost and expedite the process of arbitration.

3.3. THE LEGAL VALIDITY OF ISSUING AN ARBITRAL AWARD BY AN AI ARBITRATOR IN ARBITRATION.

It may be unbelievable that AI arbitrator will soon replace human arbitrator, the legal validity of the arbitration award issued by an AI arbitrator will be highlighted here. In addition, before analysing the legal validity of a decision issued by an AI in arbitration, it is significant to determine whether an AI can include the impartiality and autonomy elements of a human arbitrator.

At the beginning, it is important to notice that the appointed human arbitrator must be independent and impartial, as stipulated by domestic and international arbitration laws (Singapore Arbitration Act 2011 in section 13(6), Indian Arbitration and Conciliation Act 1996 in section 11, Malaysian Arbitration Act 2005 (Act 646) in section 13(8)(b), German Arbitration Institute (DIS) 2018 in article 9, the Dutch Arbitration Law (DCCP) 2019 in art 1023 and the UNCITRAL Model Rule on International Commercial Arbitration 1985 in Article 12(1)). On that basis, human arbitrator shall not accept an appointment or continue in serving as an arbitrator if there is uncertainty concerning his/her independence or impartiality (General Principle 2 of the IBA Guidelines on Conflict in International Arbitration) because the lack of independence and impartiality could permit the parties to arbitration to challenge the validity of an arbitral award that may be issued by arbitrators (article 12(2) of the UNCITRAL Arbitration International Trade Model Convention 1985) (Mohammad Azam Hussain, Mohamad Fateh Labanieh, Nazli Mahdzir, Nooraini Sulaiman & Omar Saleh Abdullah Bawazir, 2023: 107-108).

It can be argued that an AI arbitrator is impartial and independent. Nevertheless, AI is based on coding and programming methods. Therefore, if AI is trained and programmed in a biased way, the AI arbitrator might be biased and prejudicial. For example, AI might be programmed in a way that essentially favours white-skin opponents against dark-skin opponents. AI is

therefore said to be able to ‘learn from and overstate human biases’. From a theoretical point of view, Pavlovskaya (2020) argued that machine arbitrators can assist to eliminate most human biases, but they cannot overcome systematic bias in some circumstances; human participation would be requisite.

Regarding the legal validity of the arbitral award issued by an AI arbitrator in arbitration, it is essential to know that the arbitral decision does not merely include the decision of human arbitrators on a conflict, but it includes a proper justification and examination of that award. Thus, the arbitral award shall comprise the causes upon which it is founded. In the context of this subject, one may discuss that an AI could supply logical reasoning in a conventional way same to human arbitrators. However, Zamora declares that a robot could not interpret the causes for arbitral award in comprehensible languages. Further, it might be hard for the parties to arbitration to comprehend the logical reasoning after the award of an AI arbitrator. In light of this, it is conceived that the AI could be able to play a complementary role in arbitration. An AI arbitrator could draft the arbitral award while a human arbitrator supplies the reasoning after it. (Mohammad Azam Hussain, Mohamad Fateh Labanieh, Nazli Mahdzir, Nooraini Sulaiman & Omar Saleh Abdullah Bawazir, 2023, p. 109)

Hence, utilizing an AI to help human arbitrator in issuing the arbitral award should be legally recognized. This can be fulfilled by amending article I (2) of the New York Convention 1958.

2- The term ‘arbitral awards’ shall contain not only awards made by human arbitrator determined for each case but also those made by permanent arbitral institutions or centres to which the parties to arbitration have presented their case.

Finally, during this discussion we found that the decisions made by AI arbitrators have legal validity under some domestic and international laws and regulations. However, we believe that it is important to note that the participation of AI arbitrator in the arbitration process with human arbitrators, because this coordination increases the trust of the participants in the arbitration and increases the effectiveness and accuracy of the arbitration. Also, in doing so, it will increase international integrity in order to create a modern, golden and fair world.

4. CHALLENGES AND REGULATORY RESPONSES TO AI (AI) IN INTERNATIONAL COMMERCIAL ARBITRATION.

This chapter relates to legal regulations for AI in the context of international commercial arbitration. Which are mainly divided into three sections. The first section is dedicated to

identifying the challenges, limitations and risks of using AI in international commercial arbitration. The second section relates to legal and regulatory responses to AI in arbitration proceedings at the national and international levels. The third and final section relates to the enforcement and recognition of AI arbitration awards in foreign countries.

4.1. CHALLENGES, LIMITATIONS AND RISKS OF USING AI IN INTERNATIONAL COMMERCIAL ARBITRATION.

This section will analyse the main challenges, limitation and risks associate with the use of AI in international commercial arbitration.

4.1.1. CHALLENGES

The intersection of AI and international arbitration presents new challenges in the arbitration process. Also combining AI into international arbitration needs attentive consideration to assure that transparency, responsibility, dependability and ethical standards are protected, the most significant questions arise of how AI systems should be utilized, who is accountable for protecting and monitoring them, and how parties can believe, impartiality algorithms and many other challenges arise. (Mohammad Ali Solhchi and Faraz Baghbanno, 2023: 57) Other challenges are related to selecting AI as arbitrator, an autonomous party is one of the most significant advantages of international commercial arbitration. It presents the parties the chance to make an option on different sides of the arbitration procedure within the boundaries of the compulsory Lex arbitration provisions, including the choice of arbitrators according to their proficiency and capability. This is contradiction to dispute solution before domestic courts. But does this independence include the selection of AI as the arbiter or not? (Gülüm Bayraktaroğlu-Özçelik and Ş. Barış Özçelik, 2021: 8).

One issue is who should be liable if an AI system causes harm or makes a fault? Determining legal accountability can be challenging when AI works in a way for which responsibility cannot be easily ascribed to human actors. Setting up a framework for AI responsibility is necessary to assure that the advantages of AI can be achieved while saving individuals from potential damage (Mohammad Ali Solhchi and Faraz Baghbanno, 2023 58).

Other challenges are the potential for partiality in the application of AI in arbitration. AI requires data to be capable of making predictions and suggestions. If the data includes only legal cases of one race or nation, the AI could make inexact and unfair predictions. Therefore, attempts must be made to ensure that this information is balanced. Also whether or not

utilization of AI in arbitration can wholly replace the human role. Although AI can rapidly process data and provide suggestions, in some situations, the awards made by AI may not comply with society's ethical values and indicate socially unacceptable norms and values, as AI processes data deprived of emotion and ethical value does (Agus, Sudirman, Wahyudi Umar and Ahmad Rustan, 2023: 270-275). Another challenge relates to the issue of determining liability as a result of the utilization of the Large Language Model (LLM) in the arbitration process, the possibility of deficiency or disputes over the LLM-made or LLM-assisted awards becomes a great worry. If an arbitrator utilizes the LLM to produce an initial award, they are still supposed to exercise due care in following up, validating, and eventually rewarding the result based on the AI suggestion. If carelessness happens in this process and harms a party, can we hold the developers of the language model production responsible, or does accountability lie with the arbitrators who utilize these systems for determined cases? Should the guilt be putted on providers of data if the AI's adjudication is disputed by biased data? However, if LLMs act as arbitrator, a unique circumstance appears. This appears questions about the proper model of responsibility. Should we reconsider responsibility in the contextual of AI, or should human follow-up be compulsory for taking accountability? (Haugen, n.d.: 32-33)

Moreover, there are also challenges associated with AI arbitrators replacing human arbitrators. Replacing human arbitration with AI is a challenging and debatable question. In reality, it is partial of a more extensive question of whether AI can act as an (awarding) jurisdiction. Although there is not such algorithm has presently been developed to make an AI arbitrator work as a jurisdiction replace of a human arbitrator, this inquiry is showing to be a significant one because of the increasing utilization of AI-based technology in legitimate services and for the destiny of international commercial arbitration. The most significant worry in this aspect is the existing of provisions acquiring arbitrators to be natural persons. There are also other questions that require to be solved concerning the recognition and enforcement of foreign arbitral awards according to the New York Convention (Gülüm Bayraktaroğlu-Özçelik and Ş. Barış Özçelik, 2021: 7-8).

Finally, there are also challenges associated with the appointment of an arbitrator or group of arbitrators. Chapter 3 of the Model Law comprises of the formation of the Arbitral Tribunal in six articles. Article 10 (1) provides that the parties may determine the number of arbitrators.

Subsection (2) identifies that if the parties do not decide the matter in subsection (1), the number of arbitrators shall be three. Various questions arise concerning the appointing of AI arbitrators. Can the parties concur to determine the AI arbitrator along with two other arbitrators? The equivalence between human and AI arbitrators is also questionable. Even if the parties agree on a cooperation of human and AI arbitration, the legal essence of the combination of human and artificial existences are grounds for challenge. Till now, there have not been any legally references or law case concerning such matters (Sadegh Sotoudeh, 2024: 8-9)

Regarding the agreement of the parties on the structure of the arbitral tribunal. Article 11(2) provides that each party must determine one arbitrator, and the two arbitrators must determine a third arbitrator. But what occurs if one party wants to elect an AI as an arbitrator? Or what happens if two parties choose an AI as an arbitrator? Does the party determining the human arbitrator have the right to challenge the arrangement of the other party? Or even if there is no disagreement between the parties, how can a human and an AI collaborate in determining a third arbitrator? Or even how can two AIs work to choose a third arbitrator? All of these are essential questions about the application of AI in arbitration (Sadegh Sotoudeh, 2024: 8-9). We believe that although there are challenges, but it could be addressed in some ways, for example if parties appoint an AI arbitrator, then such AI arbitrator can be programmed in a way that can negotiate the appointment of third arbitrator whether AI or human. Moreover, the parties in dispute may agree on a predefined rule, such as enabling a neutral institution to appoint a third arbitrator, or employing an algorithm that can randomly select a third AI or human arbitrator from a predefined list of arbitrators.

4.1.2. LIMITATIONS OF USING AI IN INTERNATIONAL COMMERCIAL ARBITRATION

Despite the benefits of utilizing AI tools in legal decision-making in the arbitration process, there are also substantial limitations. In this section, we investigate these limitations comprehensively in three sub points.

First: General Limitations in Using AI

Common worries about AI include biases, the 'black box' phenomena and hallucinations. Biases can come from instructing data sets reflecting social partiality or from the developers themselves. Furthermore, another limitation is the absence of clarity which refers to the capability to path how an AI system utilizes data to achieve specific goals. Modern Generative

AI systems, because of being complex neural networks, frequently make this impossible, leading to the 'black box' issue. Explanation is very important in decision-making, especially in legal systems, because it lays out the basis for decisions (André Guskow Cardoso, Elizabeth Chan, Luísa Quintão and Cesar Pereir., 2024: 713-714).

In addition, this process through the so-mentioned 'black box' of the MLS often introduces assured information (inputs) and changes them into outputs. According to authors Rudin and Radin 'these black box models are constructed immediately from the data by an algorithm, meaning that humans, even those who design them, may not understand how the variables are integrated to make predictions'. As a result, the key trouble is that the algorithms utilized in black box models in MLS are very hard to interpret, specifically, how to look up and select among diverse data. At times, it is a secret even to the developers themselves. While the MLS result can be very precise, but incapability to explain how it reached the result may be a major barrier in the context of an arbitral award without participation of human, because of, parties want a motivation for the award, particularly for the losing parties (Socorro, 2020: 26-27).

Furthermore, hallucination in AI refers to producing responses and conclusions that emerge credible, but are actually falsify or fabricated. Gen AI systems, in particular, can give consistent, apparently yet false answers (André Guskow Cardoso, Elizabeth Chan, Luísa Quintão and Cesar Pereir., 2024: 713-714).

Second: Limitations in Using AI for Decision-Making

In AI systems there are many constraints for decision making in the arbitration process, these systems use techniques like refinement and retrieval augmented generation (RAG). In this section, we exemplify a few limitations that are analysed below:

Lack of data in arbitration: The confidential nature of international commercial arbitration awards boundary the availability of wide data sets required to progress AI models. The systems are instructed on generic data sets and refined utilizing techniques like RAG, comprise international norms, contracts, national law, awards and previous case data.

Balance among anticipation and legal interpretation: Some AI systems emphasize on predicting results founded on data and probability instead of reasoned legal awards or understanding the logical behind previous awards. This can lead to impede legal progress in future awards. (André Guskow Cardoso, Elizabeth Chan, Luísa Quintão and Cesar Pereir., 2024: 714-715)

Several other limitations for AI algorithms arise regarding data hungry, including: The impact of data remaining confidential on the issue of decision-making using AI. Case data are not always easily obtainable. Some aspects of the law are secret, and as a result other aspects are inaccessible. Confidentiality may be defended on the basis of keeping the profits of stakeholders or the fundamental transactions (Ankit Malhoutra and Faizan Ahmad, 2022: 268)

Third: Ethical Limitations in Using AI for Decision-Making

It is vital to consider ethical matters when utilizing AI in decision-making. Moral rules are hard to render into code and systems. Domestic and international entities agree that moral principles are crucial for dependable AI systems. The OECD (Organization for Economic Co-operation and Development) has issued suggestions on AI, requiring members to apply ‘principles for accountable stewardship of dependable AI’. These principles are:

(1) Comprehensive and sustainable evolution: Another principle of ethical use of AI is inclusive progress, welfare, so stakeholders should actively participate in liable management of AI in follow of beneficial human results, such as increasing innovation, enhancing human capacity and promoting comprehension of underrepresented community’s naturals, thus attaining inclusive development, profitability, fortifying sustainable progress and environmental sustainability. (2023)

(2) Esteem the rule of law, democratic values and human rights, including privacy and fairness: Another ethical application of artificial intelligence is that AI actors should regard the rule of law, human rights, democratic values throughout the life cycle of the AI system. These involve non-discrimination and fairness, liberty, dignity, liberty of individuals, keeping of privacy and information, variety, fairness, social fairness and internationally recognized worker rights. As well as at the same time regarding liberty of expression and other rights and liberties kept by applicable international act. To this cause, AI actors necessity to apply mechanisms and safeguards, such as human agency ability and observation.

(3) Candor and explain ability: One of the most important principles of the ethical use of artificial intelligence for decision-making is the ability to explanation, thus utilizing explanatory AI to describe the AI model, its expected impacts, and possible biases. It assists characterize model precision, fairness, clearness and results in decision making with AI. As AI progresses, humans will also be challenged to understand and follow how the algorithm arrived

at a results. Therefore, it is important to note that the explanation of procedures, decisions and outcomes by AI is an ethical principle and must be observed to avoid ethical obstacles as a result of the use of artificial intelligence technology.

(4) Security and safety: One of the most important aspects of the ethical use of artificial intelligence is to protect the privacy and security of information, because, in an age where private videos and photos are an integral component of firms perspective data sets, assuring utmost privates is paramount. Modern encryption algorithms, conjugated with robust memory protocols, are crucial for protecting optical data. Furthermore, obvious policies for data utilize, obviously transmitted to individuals, authorize them to take control of their data. Informed accept mechanisms, the utilizing of user-friendly interfaces and obvious language, increase awareness, allowing users to make sensible decisions about data sharing. (Li, 2023 p. 6)

(5) Responsibility: founding liable AI governance is important to ensuring that ethical principles are incorporated across AI progresses step in an organization. A strong governance framework determines special roles and liabilities that preserve data unity, clearness and obligate to ethical standards. By assigning special roles within AI governance, firms can initiate a structured method to managing AI practices, from progress to deployment, regulating AI operations with the main values of the organization. Also as AI continues to development, maintaining a hard focus on governance will be important to continuing ethical standards and advocating liable innovation.

The European Union also published moral guidelines for dependable AI in 2019. The prime moral concerns outlined are:

(1) Esteem for human autonomy: The principle of respect for human independence is an important element of the ethical use of artificial intelligence for decision-making, because autonomy is valuable in itself and constitutes human welfare and dignity. Therefore, it should be respected. With the rise of AI or digital influences environments raise particular concerns about human autonomy, because when artificial intelligence becomes a decision maker, it can easily violate the principle of respecting human autonomy in different ways, such as discrimination on the basis of race and culture. Therefore, it is important to impose the role of human beings as observers on the digital environment so that it does not lose its inherent independent principle. (Sahlgren, 2021: 3-4)

(2) Prevention of damage: Harm prevention is one of the most important elements to consider when using artificial intelligence in the decision-making process. To avoid the moral hurdle of harm, then precautions must be taken. UNESCO produced the first global standard on the moral of AI – ‘Recommendations on the Ethics of Artificial Intelligence’ in November 2021. It is applicable to all 194 UNESCO member countries. Preserving human rights and dignity is the basis of the recommendation. One of his principles is not to do harm, entitled ‘Do no harm’. What he means here is that the utilizing of AI systems should not go beyond what is require to achieve a legitimate goal, Risk assessment should therefore be used to forbid damage that may result from such uses.

(3) Explicability: Explanation is one of the crucial ethical elements of AI, in order to keep away from ethical concerns AI systems need to be clear to let users and stakeholders to understand how awards are made.

The most significant key practices for explanation are:

Clear documentation of awarding processes: AI processes require to be documented in a way that lets stakeholders to understand the logic behind awards.

Regular audits and observing: managing regular audits of AI systems assistance identify any issues concern to bias, errors, or neglect.

User-friendly interpretations: Providing an explanation of AI results builds trust.

These rehearse build confidence for the user and facilitate regulatory obedience by exhibiting a committal to the ethical administration of AI.

(4) Fairness: The algorithm of ensuring justice in computing is of utmost significant. To avert the ethical obstacle of artificial intelligence then AI systems must be instructed on various and representative data sets to inhibit partiality. Collaboration between ethicists and data scientists is important to continuously identify and rectify partiality. Ethicists can supply moral guidance, assist identify possible biases and secure that algorithms are not unfairly impacting special demographics. Data scientists, on the other hand, are liable for interpreting data to identify partiality. (Li, 2023: 2-3)

These ethical imperatives can constrain and guide the use of AI tools in decision making. (André Guskow Cardoso, Elizabeth Chan, Luísa Quintão and Cesar Pereir., 2024: 715-716)

4.1.3. RISKS

Among the risks and challenges arising from utilize of AI is the lack of understanding of the AI technology and how it can be implemented in arbitration dispute settlement. Another challenge and risk, also relevant to the matter of data security, utilize of AI in arbitration needs the assemblage and processing of large sums of legal data. This information incorporates documents, previous court awards, financial accounts, applicable legal regulations and other personal information. This information should be kept safely and preserved from third parties who do not have the right to access it (Agus, Sudirman, Wahyudi Umar and Ahmad Rustan, 2023: 270-275).

4.2. LEGAL AND REGULATORY RESPONSES TO AI IN ARBITRATION PROCEEDINGS AT NATIONAL AND INTERNATIONAL LEVELS.

At the international level New York Convention of 1958 is a leading convention on the recognition and enforcement of foreign arbitral awards. The New York Convention is silent on the inquiry of whether AI can act as an arbitrator. It is clear that the probability of selecting an AI arbitrator was not considered in drafting the covenant. Nevertheless, such silence could equally be explained to mean that the convention does not include any limitations towards awards made by AI arbitrators. Concerning the requirement into whether there are any normative limitations necessitating arbitrators to be natural persons, the answer varies depending on the relevant legal framework law (Gülüm Bayraktaroğlu-Özçelik and Ş. Barış Özçelik, 2021: 8). However, even if an AI arbitrator can be appointed under the convention, different challenges may arise in the case of the recognition and enforcement of foreign arbitral awards. Firstly, according to Article 5 (1: b and d) the recognition and enforcement of arbitral award may be rejected due to violation of arbitrator impartiality or due process. Secondly, the recognition and enforcement of arbitral award may also be rejected due to public policy exception, if an AI arbitrator is deemed to infringe public policy, particularly in jurisdictions requiring arbitrators to be natural person.

However, it is implicitly observed that human arbitration under certain provisions such as Art. 11(1) stating that arbitrators cannot be prohibited from arbitrating on the ground of their nationality unless the parties agree otherwise, while Art. 12(1) states that 'when a person is approached in connection with his possible appointment as an arbitrator, he shall disclose any circumstances likely to give rise to justifiable doubts as to his impartiality or independence'

The ICC Arbitration Rules reference both the nationality (Article 13(1), (5)) and the residence of arbitrators (Article 13(1)). Likewise, the Arbitration Rules of the London Court of International Arbitration (LCIA) provide detailed provisions concerning the nationality of arbitrators under Article 6.

Another requisite in most domestic rules of international commercial arbitration is that the arbitral award shall be in writing and signed by the arbitrators. Article IV(1)(a) of the New York Convention requires the submission of a duly authenticated original award, where 'authenticity' serves as a formality to authenticate that the signatures are genuine. Thereby, since AI arbitrators cannot 'sign' the award in the exact sense, it can be contended that such provisions might act as a barrier to wrap arbitral awards issued by AI arbitrators. However, it is believed that AI arbitrators shall be assigned a unique, prearranged mark to serve as an indisputable signature on arbitral awards (Gülüm Bayraktaroğlu-Özçelik and Ş. Barış Özçelik, 2021: 8-9).

Moreover, it is argued whether full MLS arbitration is allowed under the UNCITRAL Model Law and certain relevant national arbitration rules. In the UNCITRAL Model Law of 1985 and its 2006 amended version, and the NYC Convention there is no particular provision preventing the utilization of MLS as a facilitator of arbitration proceedings, as a result, countries are free to decide whether to employ this technology as an alternative to arbitration conflicts solution in their domestic context or not. Most domestic laws are silent on MLS acting as an arbitrator. However, some states only permit a human being to act as an arbitrator. There are several examples. As in the French case where Article 1450 of the Civil Code clearly demands that the arbitrator is to be a natural person. Similarly, according to Article 1023 of the Dutch Code of Civil Procedure (Book IV– Arbitration) 'any natural person with legal capability may be determined as an arbitrator. Unless the parties have agreed otherwise for the intention of impartiality and liberty of the arbitral tribunal, no person shall be prohibited from being appointed on national grounds'. This Dutch provision prohibits any type of arbitrator other than a natural person. Likewise, in Scotland, where the Scottish Arbitration Act 2010, in Schedule 1 Obligatory Rule 3 clearly states that 'only an individual may act as an arbitrator.' In England, section 26 (1) of the English Arbitration Act 1996 provides 'that the power of an arbitrator is personal and ceases on his death'. This can be explained to mean that only natural persons die, as a result only a natural person can be an arbitrator (Socorro, November 2020: 35-36).

It is worth mentioning that there are some examples that permit a legal person to perform arbitration functions. In Spain, a court held in *Sogecable v Auna Telecomunicaciones* that accounting firms can be specified as arbitrators in full'. Iran's International Commercial Arbitration Act also states in its Article 1(a) that an arbitrator may be a natural person or a legal entity. These pictures permit for a person other than a human being to be determined as an arbitrator. However, the doubt is whether the MLS can be considered as a legitimate person or legal entity, as its legal personality has not yet been recognized.

In attempting to address the final doubt, scholars have taken two different approaches. First, they compare robots with MLS and clarify the legal possibility of the former in light of the 'electronic personality' concept recommended by the European Parliament in 2017. Specifically, this includes creating a unique legal status for robots, letting at least the most complex and autonomous ones to be recognized as electronic persons, responsible for any harm they might cause. Additionally, in 2017, Saudi Arabia granted citizenship to a robot for the first time. Second, Professor Eidenmueller proposes that MLS can be considered a self-driving firm. The professor indicated that 'this means renouncing the necessity of human organizers for firms and permitting firms to be managed only by AI systems'. Finally, it has been proposed that the MLS arbitrator may have a legal personality as a robot or as a self-driving firm (Socorro, November 2020: 37).

Through these clarifications, it is concluded that the UNCITRAL Model Law and most national arbitration laws are silent on the use of an AI as a decision-maker, as noticed in instruments like the NYC and the Model Law. Nevertheless, the Model Law merely establishes general arbitration rules for member states, permitting them to make their decisions, based on their interests, whether to embrace or amend its provisions, irrespective of certain legal restrictions. Under the current rules in ICA, MLS can be implemented as a replacement for human arbitrators. Moreover, pursuant to domestic laws, some countries permit legal persons to act as arbitrators, while others allow only humans. However, each country has its own internal procedures for adjusting arbitration laws.

It is worth mentioning that liability is one of the key challenges in the case using AI in arbitrations. As AI technologies evolve and become embedded in various aspects of society, legal frameworks must grapple with the complex struggles of determining the accountability and responsibility of parties in AI-driven processes. AI systems introduce conflict in

determining responsibility when its rewards lead to unintended consequences, and traditional rules may struggle to allocate responsibility when AI operates autonomously. Human supervision is an important aspect to ensure ethical and responsible use of AI, as AI systems operate autonomously. Legal frameworks should demonstrate the accountability of human actors involved in the development and monitoring of AI systems, as well as clarify whether manufacturers, developers or users of AI are liable for AI-related harm. In order to prevent evasion from responsibility. (Thankgod, 2023:18-19)

Here are some examples of legal systems in some countries regarding the principle of liability for artificial intelligence for the harm it causes to others:

1. In the French legal system:

Here are showed some key provisions of civil liability for AI. Article 1240 of the French Civil Code states that ‘anyone who causes harm to another person by his own fault is obliged to repair it. This means that if a person or entity that includes an AI system cause’s harm, it will be liable for the harm caused if the damage is the result of their fault. Strict liability also implements in specific cases such as when a person or party is liable for an animal or artifact causing damage to another person’s, which is clearly mentioned in (Article 1241 of the Civil Code). This has also been interpreted by some courts to implement to AI systems as well. Article 1382 of the French Civil Code also provides that responsibility can be established in cases of negligence, mistake, or intention mistake. This means that applied strict liability if a person or entity deploys an AI system that causes harm due to its negligence or fault. It is significant to note that the legal framework for AI systems responsibility is still evolving in France and other countries. As AI technology keeps on to evolving and spreading.

2. In the US legal system:

There is presently no inclusive Federal Act in the United States governing AI civil liability. However, various states have passed laws to solving AI liability. For example, some states have passed acts addressing employer’s responsibility for losses suffered by their employees in utilizing of AI. In addition to state acts, there are common act principles that may utilize to AI responsibility in the United States. One of the challenges in utilizing traditional legal principles to AI liability is that AI systems can work in ways that are hard to foreseeing or understand. This cause to barriers in determining who should be held liable for harm caused by AI systems.

To solve this challenge, some legal experts have suggested a ‘hybrid’ method that assigns liability to both the producer of the AI system and the utilizer or operator of the system. (Zein, 2023: 6)

3. In the English legal system:

In England in 2020 the UK government suggested a review of the legal and regulatory framework for AI, which advocated the foundation of a new legal framework that sets out clear rules for AI liabilities. Under the present legal framework in England, liability for harms caused by AI systems may be regulated by a diversity of legal principles, involving negligence act, product responsibility and contract act. However, utilizing these legal principles to AI can be complicated. The suggested framework would be based on a ‘fault principle’ method, holding persons and entities responsible for damage caused by the AI system if they were somehow at fault (for instance, if they were negligent or infringed their duty of care). (Zein, 2023: 6)

Finally, what is significant to note is that there is presently no inclusive legal framework governing AI responsibility in these states, but there are some legal principles that may be utilizing. However, AI civil liability act is evolving in the United States and England.

There could be different legal framework for determining civil liability of AI

The legal framework for determining civil liability of AI is deferent by countries and jurisdiction; here are some common principles that can be applied:

1. Strict responsibility: According to this principle, the person or entity liable for progressing an AI system is strictly responsible for any harm caused to the system, irrespective of whether they were at fault or not. This method supplies compensation to loser parties without necessity to verifying negligence or fault by the defendant parties. (Zein, 2023: 4-5)

The principle of strict responsibility is also called wide responsibility, which covers almost any sort of no-fault responsibility, making it the most strength principle of responsibility. This is also a useful principle for loss victims, where components of error are hard to prove or where needing such proof would cause in under compensation. Therefore, the principle of strict responsibility can be a suitable way for AI systems. Such a principle is not without criticism against the introduction of strict responsibility, which can have a deterrent effect and may prevent innovation due to possible legal responsibility. This makes firms unsure for fear of responsibility for any negative results. Yet the existence of strict responsibility does not

automatically mean that innovation is prevented, rather this can prompt the development of new, safer products. (Vignisdóttir, June, 2023: 25-26)

More clearly, this type of strict liability creates an imbalance between the parties, because the mere existence of damage is sufficient to oblige the responsible party to compensate, but the injured party has no duty to prove the existence of fault or determine the cause of the damage. Similarly, it is not appropriate to hold AI accountable on the basis of strict liability, because it is illogical to impose sanctions on AI, and yet artificial intelligence does not have legal personality.

2. Negligence: Under this principle, the person or entity liable for progress an AI system can be responsible for harms caused by the system if they are negligent in progressing or deploying their system. (Zein, 2023: 4-5)

Negligence responsibility happens in two situations about computer programs: when the software is defective and when a party is injured as a result of the utilizing of the software. Both circumstances raise troubles for AI applications. Also negligence is the failure to implement a duty of care that a wise person would implement under similar situations, and as a consequence of that violation has caused the plaintiff damage. (Gerstner, 1993: 246).

Here is a criterion for determining the negligence of the party that caused the damage.

The recommended standard for human resources should be a professional standard, specifically chosen because of the high level of skills and ownership expertise, a high level of supervision is expected, this is in jobs that require special skills, but some occupations do not require special expertise. (Gerstner, 1993: 247) However, what is important to note here is whether these same criteria are necessary to determine the rate of AI negligence in artificial intelligence. This causes a lot of problems because it doesn't make sense to measure the criteria of an ordinary or skilled person for artificial intelligence, so this is controversial. For these reasons, the principle of negligence is not considered an appropriate basis for holding artificial intelligence liable for the damage it has caused, because the principle itself creates problems that are incompatible with the use of artificial intelligence technology.

3. Shared and Multiple Responsibility: In some cases more than one person or entity will be liable for the deployment of the AI system. It means that any defendant can be responsible for the full amount of damages, irrespective of the degree of their fault. (Zein, 2023: 4-5)

This liability principle for determining artificial intelligence liability is largely appropriate for assigning liability to the parties, but what is interesting is that it does not matter which party made the mistake, or which party is more at fault, all of them are jointly responsible for compensating the injured party, so there is some injustice, it is better to compensate according to the degree of the fault.

4. Apportionment of Responsibility: In some cases, the court may apportion responsibility among the different parties liable for the progress of AI systems based on their degree of fault. (Zein, 2023: 4-5)

This principle of liability for determining liability for artificial intelligence is very good and consistent with the principle of justice, because here the damage caused is not an individual's responsibility. Artificial intelligence alone cannot be held responsible, because humans have also been involved in the creation and development of AI, so the parties are responsible for the amount of mistakes they have made, because the responsibility is shared.

5. Vicarious liability:

Vicarious responsibility usually covers situations where employers are responsible for the harms of their employees, as long as these harms happened during their employment. Other examples of vicarious responsibility involve the liability of parents for the harmful acts of their children or the responsibility of a director for the act of an agent acting under the direction and for the advantage of the entity. The main idea of vicarious responsibility includes in holding one person liable for the wrongful acts of another, supplied there is a special legal relationship between them. It is also presumed that a person who really caused the damage on behalf of and for the benefit of a person who is responsible for the damage. Moreover, it is presumed that the perpetrator is act under the direction or observation of the person liable for the damage. (Burylo, 2022: 6-7)

For a follower to be responsible for the acts of his follower, two terms are needed:

- 1- The connection of subservience, meaning that the subordinate has real power to direct and control.
- 2- The happening of the damaging action of the follower while operating the work or because of it.

About the legal fundament for the liability of the subordinate, there is dissonance between legal scholars: This conflict can be traced in essential to the nature of this liability, whether it is a personal liability or a liability for others. If it is said to be a personal liability, it can be funded on the idea of fault or on the idea of bearing follower, and if it is said to be a liability for others, which is the most with this opinion, it can be funded on the idea of assurance, subrogation or vicariousness. (Moussa, 2021, 24-25)

Therefore, the basis of AI liability can be traced back to the concept of vicarious liability; it means that if any harm was caused by the use of AI technology, the responsibility then lies back to the followers, the creator of AI or the designer of AI programs, who was involved in the error that caused the damage. Because artificial intelligence does not have legal personality, it cannot be held legally responsible. Other human beings have been involved in the creation and use of artificial intelligence. Therefore, the people behind the production and design of this technology and the dominance of the use of their manual intelligence must bear the full compensation of the victims.

Another type of liability that arises from the work of others is the liability to maintain goods. It is important to note that, what to the extent the person responsible for the use and guarding of artificial intelligence can be liable, so according to this principle, the guard will be liable for any damage caused by artificial intelligence. For example, the provisions of Articles 231 of the Iraqi Civil Code, 178 of the Egyptian Civil Code and 1384 of the French Civil Code deal with the responsibility for the protection of goods. According to the Iraqi Civil Code No 40 of 1951 article 231 also provides that ‘Anyone who takes protection of objects that need specific care or mechanical machinery is responsible for the damage caused by these objects, unless it is proven that the damage was caused by a foreign cause over which he had no control...’

This article clearly states that the responsibility is placed on the custodian but with two conditions referred to in the article, one is that someone is in charge of something that requires special care, and the second is that the damage was caused by that thing. If this principle is made the basis for determining responsibility in artificial intelligence, it faces some criticism. For example, artificial intelligence is often difficult to control because many of its actions are beyond human control.

The current default system, across EU Member States (MSs), states as the execution of each country’s liability regime when treating with civil liability for AI-caused damage, involving

contract and tort law. Most EU MSs do not have law to regulate responsibility for losses resulting from the utilizing of AI. MS national tort statutes also normally involve provisions that recognize responsibility based on fault and have a relatively wide scope of implementation. As a result, MS will implement existing rules for compensation for damages. The duties of these regulations is to cover any loss resulted by them to the injured party, even if the regulations refer only to general provisions or supply coverage only in the way of insurance. (Rapti, 2023: 14)

What is interesting is that after referring to the principles of liability for artificial intelligence and liability for coverage of damage caused by AI, we also referred to the position of national laws to determine this principle, but so far cannot make a final decision on liability. Therefore, countries should take necessary measures to compensate the victims, for this reason some countries have established legal frameworks to regulate the liability of AI systems. For example, the EU's General Data Protection Regulation (GDPR) which includes provisions for AI systems that process personal data, and provides for significant compensation in cases of non-compliance. Although this is not the final solution, it is a relatively appropriate solution to protect the victims.

4.3. ENFORCEMENT AND RECOGNITION OF AI ARBITRAL AWARDS IN FOREIGN COUNTRIES.

Let us start by asking is it feasible to reject recognition or enforcement of an award issued by intelligent systems on the foundation of the public policy laid down in the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards of 1958?

Under Article V (2) b of the New York Convention, the concerned authority in the country where recognition and enforcement are sought may reject an award, if the arbitral award is opposite to its public policy. Public policy principles are intended to reflect the necessities and values that a society holds at a specified time, and public policy is an altering concept, completely developing to meet the changing necessities of political, cultural, social and economic contexts. It must be noticed that AI utilized for decision making is still in its beginning and therefore some obstacles may emerge in the way of recognition or enforcement of a decision given by those systems. Essentially, AI arbitrators can raise moral causes for absence of human qualities (for instance: emotions) or protection of due process based on so-called 'black boxes', promoting the impossibility of immediately explaining outcomes or predictions of AI systems. Emotions such as compassion, or even infuriate, also play a

significant role in legal awarding. Moreover, it is presumed that there is internal value in hearing a human being, subject to assignments of justice and regards. It is interesting that if parties believe AI, then who has the authority to forbid them from utilizing it, particularly in arbitration where independence of selecting is paramount? Finally, all responses to such issues relate to local courts' receptiveness to technology, whether they accept such technological advancement or not. (Guillermo Argerich, María Blanca Noodt Taquela and Juan Jorge, 2020).

An interesting inquiry that was based on the Korean legal system, resulting in an arbitral award issued by AI, faces some issues (or at least questions) for reasons of public policy, given the Korean Arbitration Act (Amended by Act No.6083 as of Dec. 31, 1999), subsection 36(2). 2 (b), that the court may set aside an award that(b)' the recognition and enforcement of the award is in conflict with the good morals or other public policy of the Republic of Korea'.

The law of Republic of Korea typically provides for the recognition or enforcement of an arbitral award under Article 37 which addresses 'the recognition or enforcement of an arbitral award', in paragraph (2) The party asking for the recognition or enforcement of an award shall submit the following documents. If the award or the arbitration agreement is not made in the Korean language, a properly certified translation thereof into the Korean language shall be attached to: 1. the properly authenticated award or a duly certified copy thereof; and 2. the original arbitration agreement or a duly certified copy thereof.

Article 39 deals with foreign awards which states that: (1) Recognition or enforcement of a foreign arbitral award to which the Convention on the Recognition and Enforcement of Foreign Arbitral Awards of 1958 applies shall be granted in accordance with the Convention. (2) The provisions of Articles 203, 476 (1) and 477 of the Korean Code of Civil Procedure shall apply mutatis mutandis to the recognition or enforcement of a foreign arbitral award to which the Convention referred to in Paragraph (1) does not apply. The second paragraph of Article 39 provides that the award of a foreign arbitrator shall not be enforceable in the Republic of Korea.

Moreover, it is crucial to take Position of the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards into consideration. The New York Convention is a foundational legal instrument widely adopted from the ICA. It is recognized by 172 Contracting States that foreign arbitral awards are valid and enforceable at the same level as domestic awards.

The first illustration is Article II (2) of the NYC which provides for arbitration provisions, which must be ‘signed by the bodies or incorporated in the exchange of messages or telegrams’, in view of the widely accepted use of electronic commerce. Article 4 of the NYC contains the minimum requirements imposed for the recognition of a judgment in one of the Contracting States, specifically, the interested party shall ‘(a) furnish a certified original or certified copy of an award’.

Based on the abovementioned article, an arbitration award ordered and signed by MLS may have no problem being recognized and enforced by an interested party in one of the NYC Contracting States.

In addition, Article 5 1(a) refers to an arbitration agreement that sets out a case where an award may be challenged by the losing party if the opposing party proves that the arbitration agreement is invalid under the applicable law or that one of the parties lacked legal capacity. If no governing law is specified, the validity is assessed based on the law of the country where the award was made. Problems are appearing when the parties have not determined any rules in the arbitration agreement. Recourse may be made to the implementation of the Arbitration Seat Act, either at the place where the award was signed or at the location that regularizes the parties' prior business relationship (Socorro, November 2020: 30-31).

The debate intensifies when it comes to MLS, as MLS may be located in a different country than the parties seeking recourse to the procedure. Additionally, it may be challenging to determine where a judgment was signed, or MLS may use technologies developed in different jurisdictions. This opens the door for the losing party to challenge the judgment. There may not be a resolution for all cases, it is best to rely on a case by case basis. However, it can be expected that the arbitration seat will consider the place of the firm owner/MLS developer.

Furthermore, Article 5 1(d) includes causes for rejecting an award 'if the formulation of the arbitral jurisdiction or arbitral procedure was not in conformity with the parties' agreement, or unsuccessful that agreement, or was not in conformity with the law of the country where the arbitration been done'. The contentious issue happens when the arbitration agreement does not clearly contain the MLS as a mechanism for mediation conflict solution.

Finally, article 5 2(b) can reject recognition and enforcement of an award if ‘the award is opposite to the public policy of the country’. This significant provision concern to the public

policy of the state in which the arbitration is applicable. Therefore, if the execution of MLS arbitration is opposite to a national policy, the specific state may reject the award by relying on this article (Socorro, November 2020: 32-33)

After referring to the New York Convention, it became clear that foreign arbitral awards are recognized as national court decisions and enforceable domestically, but the losing party has the right to appeal based one of the provisions of Article 5 to refuse to enforce the award.

Moreover, regarding the position of Iraqi law on the recognition and enforcement of foreign arbitration awards. Commercial arbitration in Iraq is more than 40 years behind agenda, and there is presently no general theory of arbitration in Iraq compared to other countries, which have enacted particular laws on commercial arbitration and autonomous from civil procedure laws. Furthermore, these statutory provisions concern only with domestic arbitration taking place on Iraqi territory, and therefore cannot keep pace with the most significant evolutions that have become a feature of commercial arbitration systems in arbitration countries worldwide. (Matloub, 2018 p. 237)

However, as recently as 2021, Iraq joined the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, which is a significant stage to attract foreign investment in the country, the law on accession to the agreement was passed by the Iraqi parliament on March 4 in 2021. Iraq's accession to the agreement also includes some of the following exceptions: (Al-Suwaidi, 2024 pp. 12-13)

1. The Agreement does not implement the arbitration awards passed before the entry into force of this law.
2. The Convention shall implement only to the recognition and enforcement of awards made in the state of other Contracting State, except on the basis of reciprocity.
3. The Agreement includes only to conflicts relating to contractual relations of a trade nature in accordance with Iraqi law.

Finally, it is important to note that there is no specific law in the Iraqi legal system regarding the recognition and enforcement of arbitral awards in foreign countries that addresses this issue. However, with Iraq's accession to the New York Convention, it resolved many of the issues related to the recognition and enforcement of foreign arbitral awards. However, this is the case if the arbitration award sought to be enforced in Iraq is issued by a State Party to the New York

Convention. However, if the foreign arbitration award was issued in a country outside the New York Convention, Iraq cannot enforce the provisions of the Convention. This means that there is no final regulation of the Iraqi legal system. Instead, what exists is a partial and conditional solution.

CONCLUSION

Throughout the paper, several key findings and recommendations regarding the impact of AI in international commercial arbitration can be outlined.

FIRST: FINDINGS

- In terms of the introduction and definition of AI, although there is no unified definition, scholars have defined it in different ways, the most appropriate of which is the definition made by, European Commission (EC) High Level Expert Group on AI (AI HLEG).
- The phrase 'AI' (AI) had its roots in 1956 at a Dartmouth conference where it was formally introduced by John McCarthy.
- The LCIA turned out to be the oldest arbitration body in the world, founded in 1891 as the City of London Arbitration Chamber, in 1903, it changed its name to the International Court of Arbitration, where today the LCIA is one of the world's leading international bodies for commercial dispute resolution.
- The use and determination of AI in International Commercial Arbitration derives its legitimacy from several domestic laws such as the Indian Arbitration and Conciliation Act, 1996, the Singapore Arbitration Act 2011. At the New York Conference in 1958, the UNCITRAL Model Law and the SVAMC Guidelines on the use of AI in arbitration received international legitimacy.
- There are different opinions on replacing human arbitration with AI arbitration.
- With respect to the recognition and enforcement of arbitral awards rendered by AI, the New York Convention is a basic legal instrument widely adopted from the ICA. Although the laws do not explicitly allow the use of AI in proceedings, they also do not prohibit it.

SECOND: RECOMMENDATIONS:

- The fast development of AI and technology has gradually challenged the adaptability of legal frameworks, often outpacing legislative processes.

- This dynamic development requires policymakers and legal professionals stay cautious about technological advancements and their societal influences to ensure laws remain effective and relevant. Incorporating curricula and research initiatives between law, computer science, and engineering departments can cultivate professionals adept in both legal and technological fields, facilitating more cohesive and informed policy development.
- To tackle the challenges posed by AI within current legal structures, it is imperative to modernize and expand legal frameworks. This could be accomplished by modernizing existing statutes or introducing new regulations specifically tailored to AI applications, ensuring they comprise the swift evolution of AI technologies. Such efforts are vital not only in the context of international commercial arbitration but also across domestic and international laws and agreements.
- The utilization of AI in legal contexts also presents challenges, especially regarding cybersecurity and ethical considerations. Computational law systems shall solve such issues, from design to physical implementation, containing machine learning-specific adversarial issues. Ensuring that these systems accommodate threats, are utilised suitably, and uphold human oversight is crucial for their reliable and just operation.

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General notes:

1. The voice of the author (researcher) needs to be heard in many sections.
2. The language needs proofread.

3. Too many unnecessary details given in some section (mentioned in comments).
4. The bibliography is a bit messy and needs to be numbered and classified.
5. Some sections need more discussions
6. More detailed and clear findings are essential for the paper.
7. Solid recommendations backed by legal opinions of scholars or legal provisions to be added. For instance, the author might recommend not relying on AI arbitrator by indicating logical arguments coming from his/her understanding.