
BLOCKCHAIN ARBITRATION IN CONFIDENTIALITY AND IMPARTIALITY PRINCIPLES: LEX DIGITALIS ARBITRI

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ABSTRACT

Kleros blockchain arbitration presents a promising solution for faster, morcost-effective, and secure arbitration in a digital environment. However, it comes with significant challenges: confidentiality and impartiality. Arbitration is often chosen due to its confidentiality principle. Examining Kleros' blockchain arbitration, it becomes apparent that the platform lacks confidentiality regime, raising numerous issues. Therefore, the purpose of this research is to evaluate the challenges of confidentiality and impartiality in Kleros' blockchain arbitration and identify potential issues that undermine trust and fairness in their blockchain arbitral process. A case in point is the strict anonymity of Kleros jurors, which makes it challenging to establish trust, legally bind jurors, monitor compliance, and address potential jurors' misconduct. Additionally, jurors' anonymity prohibits disclosure of pertinent information, which may give rise to justifiable doubts, thereby resulting in jurors' impartiality being called into question. Consequently, based on the findings, this article advocates for Kleros to reconsider their strict anonymity policy and to introduce confidentiality and impartiality provisions in order to align more with the established legal practices in digital arbitration environment (Lex Digitalis Arbitri).

Keywords: blockchain arbitration; confidentiality; impartiality.

INTRODUCTION

Owing to the advancements of information-technology and communication, the global economy system has continue to dynamically change. The global economy, in this day and age has undergone several evolutions spanning from the traditional approach to the contemporary approach, as exemplified by Bitcoin.¹ This alternative medium of exchange needed a mechanism to keep track of their currency ownership, i.e., to conduct the bookkeeping. In place of banking and financial institutions, this role was fulfilled by the blockchain technology.

¹*Building Value with Blockchain Technology: How to Evaluate Blockchain's Benefits.* (2019). World Economic Forum, pp. 10–11; Nakamoto, S. (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System.* www.bitcoin.org, p. 1. but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone." "title": "Bitcoin: A Peer-to-Peer Electronic Cash System", "URL": "www.bitcoin.org", "author": [{"family": "Nakamoto", "given": "Satoshi"}], "issued": {"date-parts": [{"2008"}]}, "locator": "1", "label": "page"}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}]

Eventually, other parties managed to find alternative uses out of the technology, including legal-tech practitioners.

Much like Bitcoin's original vision, which was to provide a reliable and efficient alternative monetary ecosystem, the legal-tech community envisioned a faster, more efficient, and economical arbitration system. To this end, they paired arbitration with the blockchain technology. The idea and goal were sound, as the rise of international trade has resulted in the need of a better arbitration mechanism. Indeed, arbitration stands amongst the most preferred dispute resolution methods for international trade disputes. There are many reasons to this, but chiefly is that arbitration affords confidentiality to disputing parties.² Therein lies the problem, despite blockchain arbitration's potential, it may not meet all the thresholds traditionally subjected on arbitration, in particular, the confidentiality aspect of arbitration. To complicate the matter, there is no common standard that blockchain arbitration could aim for as confidentiality, its interpretations, and practices varied by *lex arbitri* and arbitration rules. Additionally, because of its distinctive characteristics, blockchain arbitration presents some challenges to the established convention of impartiality and independence in arbitration.

In which lies the urgency of this research. Kleros blockchain arbitration continues to gain ground both in the law academic community and the practical users of arbitration. However, this far, discourses on this novel mechanism have only focused on the governance and enforceability aspect of blockchain arbitration, leaving other facets unaddressed.³ This gap should be rectified as confidentiality and impartiality not only significantly influence the arbitral proceeding itself but may also impact the final decision of the dispute. Therefore, this research must be conducted in order to explore the compatibility of blockchain arbitration with traditional standards of confidentiality and impartiality. Accordingly, this article will dissect the interpretation and practice of confidentiality in both conventional arbitration and blockchain arbitration to analyze whether the new invention is well-equipped to fulfill the confidentiality often expected in arbitration. This article is structured in 4 chapters. Introduction provides background on blockchain arbitration and arbitration principles discussed. Methodology outlines the approach and legal instruments used. Discussion chapter examines how confidentiality and impartiality are interpreted and applied in both conventional and blockchain arbitration. Conclusion summarizes the findings and offers the authors' recommendations.

Key Concepts – Blockchain and Blockchain Arbitration

Blockchain is a digital ledger for cryptocurrency in that it validates and records its designated cryptocurrency transactions.⁴ Over time, the blockchain technology has seen ongoing developments and adoptions by parties of varying fields, including in the legal community for use in arbitration.⁵ Blockchain has several advantages that may prove beneficial for arbitration. The decentralized nature of blockchain means that blockchain arbitration is unlikely to be unavailable by disruption as there are multiple backups distributed amongst the network at any given time. In turn, this renders blockchain arbitration more transparent and difficult to

²Moses, M. L. (2008). *The Principles and Practice of International Commercial Arbitration* (First). Cambridge University Press, p. 1.

³Allen, D., Lane, A., & Poblet, M. (2019). The Governance of Blockchain Dispute Resolution. *Harvard Negotiation Law Review*, 25(1). <https://doi.org/10.2139/ssrn.3334674>; Aouidef, Ast, & Deffains, 2021; Buchwald, M. (2020). Smart Contract Dispute Resolution: The Inescapable Flaws of Blockchain-Based Arbitration. *University of Pennsylvania Law Review*, 168(5); Casino, Dasaklis, & Patsakis, 2019; Metzger, J. (2019). The Current Landscape of Blockchain-Based, Crowd-Sourced Arbitration. *Macquarie Law Journal*, 18(5).

⁴Narayan, A., Bonneau, J., Felten, E. W., Miller, A., Goldfeder, S., & Clark, J. (2016). The Long Road to Bitcoin. In *Bitcoin and Cryptocurrency Technology A Comprehensive Education*. Princeton University Press, pp. xxiii–xxvii.

⁵Casino, F., Dasaklis, T. K., & Patsakis, C. (2019). A systematic literature review of blockchain-based applications: Current status, classification and open issues. *Telematics and Informatics*, 36, 55–81. <https://doi.org/10.1016/J.TEL.2018.11.006>, pp. 60–68.

tamper. Simultaneously it reduces operational costs by eliminating the middle-man.⁶ Finally, in a very topical advantage, blockchain arbitration's inherent nature of being fully digital and decentralized may offer greater resilience to unforeseen challenges like COVID-19 as there are no adaptations needed.⁷ Unlike its conventional contemporary which had to adapt by shifting their proceeding online.⁸ It is understandable then as to why there are disputing parties enticed by this new mechanism.

There are several prominent blockchain arbitration services (“**providers**”), namely Kleros, Aragon, and Jur.io.⁹ There are slight differences in how they operate, but they share the same core principle and mechanism. All of these providers use blockchain and involve what is called as “**juror**” to act in a quasi-judicial role in determining the legal issues at hand, as opposed to having conventional arbitrators.¹⁰ In researching the issues, this article designates Kleros as the main subject due to it being operational and its feature completeness.

Kleros

Established in 2017 and operational a year later, Kleros is legally incorporated in France as a *Société Coopérative d'Intérêt Collectif*. Kleros won the “Blockchain for Social Good Prize” award from the European Union's Horizon 2020 grant program. Currently, over 700 jurors operate across the 20 sub-courts on the platform. Kleros mentions it has settled cases worth millions of dollars.¹¹ Although currently primarily used to arbitrate technological contract disputes, Kleros aims to open up its arbitration service to “every kind of dispute” ranging from “simple to highly complex”.¹² The arbitration service was envisioned to support e-commerce, finance, insurance, travel, international trade, consumer protection, intellectual property, and academic uses.¹³

Key Concept – Confidentiality

Confidentiality is closely associated with arbitration as proven by a significant number of disputing parties attributing their selection of arbitration to confidentiality.¹⁴ More than that, it is also a manifestation of party autonomy.¹⁵ However, confidentiality remains a contested issue and its application vary by arbitration laws or “*lex arbitri*” and arbitration rules. For instance, there are a number of views towards the inherent nature of confidentiality. Some jurisdictions hold that confidentiality is deeply inherent and inseparable from arbitration, that the parties need not to explicitly call for confidentiality, that an “implied obligation of confidentiality” unequivocally exists.¹⁶ Others hold that confidentiality must be called for expressly to

⁶*Building Value with Blockchain Technology: How to Evaluate Blockchain's Benefits*, 2019, pp. 10–11.

⁷Bergolla, L., Seif, K., & Eken, C. (2021). Kleros: A Socio-Legal Case Study of Decentralized Justice & Blockchain Arbitration. *Ohio State Journal on Dispute Resolution*, 37(1). <https://doi.org/10.2139/SSRN.3918485>, pp. 6–7.

⁸Scherer, M. (2020). Remote Hearings in International Arbitration: An Analytical Framework. *Journal of International Arbitration*, 37(4), 407–448. <https://doi.org/10.54648/JOIA2020020>, pp. 407–408. but the Coronavirus Disease-19 (COVID-19

⁹Bergolla, Seif, & Eken, 2021, pp. 10–13; Chevalier, M. (2021). From Smart Contract Litigation to Blockchain Arbitration, a New Decentralized Approach Leading Towards the Blockchain Arbitral Order. *Journal of International Dispute Settlement*, 12(4), 558–584. <https://doi.org/10.1093/JNLIDS/IDAB025>, pp. 567–568.

¹⁰*Arenson v. Casson Beckman Rutley & Co.*, [1977] 1 AC 405 (HL) (House of Lords 1977), para. 436.

¹¹Kleros. (2023b, May 22). Kleros FAQ. *Kleros*. <https://docs.kleros.io/kleros-faq>.

¹²Aouidef, Y., Ast, F., & Deffains, B. (2021). Decentralized Justice: A Comparative Analysis of Blockchain Online Dispute Resolution Projects. *Frontiers in Blockchain*, 4, 3. <https://doi.org/10.3389/FBLOC.2021.564551>, p. 3; Lesaege, C., Ast, F., & George, W. (2019). *Kleros Short Paper v1.0.7*. Kleros, p. 1; Lesaege, C., George, W., & Ast, F. (2021). *Kleros Long Paper v2.0.2*. Kleros, p. 1.

¹³Lesaege, George, & Ast, 2021, p. 54.

¹⁴Reyes, A. (2018). *The Practice of International Commercial Arbitration: A Handbook for Hong Kong Arbitrators* (First). Informa Law from Routledge, p. 8.

¹⁵Fouchard, P., Gaillard, E., & Goldman, B. (1999). *Fouchard, Gaillard, Goldman on International Commercial Arbitration* (E. Gaillard & J. Savage, Eds.). Kluwer Law International, pp. 1, 188–189, 612; Moses, 2008, p. 3; Tang, Z. S. (2014). *Jurisdiction and Arbitration Agreements in International Commercial Law*. Routledge, pp. 255–256.

¹⁶Merkin, R. M., & Hjalmarsson, J. (2016). *Singapore arbitration legislation: Annotated* (Second edition). Informa Law from Routledge, p. 97.

take effect.¹⁷ While some are silent on the matter.¹⁸ There is yet a consensus and uniform application between jurisdictions concerning the presumptive nature of confidentiality. The same inconsistency is also true of arbitration rules.

Like any new concept, blockchain arbitration brings its own set of questions, such as confidentiality, which is a contentious subject in the first place. It is imperative to address their relationship, especially if blockchain arbitration is to be the evolution of arbitration. Given the traditional association of confidentiality with arbitration, parties in dispute naturally might expect the same level of confidentiality from blockchain arbitration.

Key Concept – Impartiality and Independence

Since the first inception of arbitration, arbitrators have always been subjected to the requirement of independence and impartiality. First and foremost as mandated by the parties' arbitration agreements, and additionally by domestic legislations, international sources of law, and institutional arbitration rules. In principle, independence and impartiality are essential in exercising judicial power, and thus they are essential to arbitrator as well.¹⁹ The two exist to guarantee the integrity and equality of an arbitral proceeding, in turn preventing the end result from being overridden by a competent court, and thus fulfilling the very purpose of arbitration – to present the parties with binding decisions. Indeed, arbitrators lacking in impartiality and independence may entice a party to subsequently challenge their appointment or even be the cause of an annulment or denial of recognition of an arbitral award. In the subsequent chapter, this article will discuss how the principle is interpreted and applied conventionally and against Kleros blockchain arbitration. Lastly, how the principle might change the convergence between the “real” world and the “digital” world.

METHOD

To the background and the issues, this article will utilize descriptive-analytical research using a juridical normative approach. These were selected for its compatibility with library research primarily reliant on secondary data. In legal contexts, secondary data includes primary legal material, secondary legal material, and tertiary legal material. This article will explore the following primary legal materials (1) the UNCITRAL Model Law on International Commercial Arbitration, (2) the Singapore International Arbitration Act 1994, (3) the French Code of Civil Procedure, (4) Arbitration Rules of the Singapore International Arbitration Centre, and (5) the ICC Arbitration Rules.

ANALYSIS AND DISCUSSION

The Problems Faced – Interpreting Confidentiality

Margaret Moses submitted that the regulatory framework of international commercial arbitration resembles an inverted pyramid.²⁰

¹⁷Merkin & Hjalmarsson, 2016, p. 97.

¹⁸Onyema, E. (2010). *International Commercial Arbitration and the Arbitrator's Contract* (First). Routledge, pp. 141–142.

¹⁹Ury v. Galeries Lafayette, (French Cour de Cassation Civ. 2 1975).

²⁰Moses, M. L. (2012). The Principles and Practice of International Commercial Arbitration. In *The Principles and Practice of International Commercial Arbitration* (Second). Cambridge University Press. <https://doi.org/10.1017/CBO9780511920073>, pp. 5–7. pp. 5–7.



Figure 1. Regulatory Framework of International Commercial Arbitration.

Source: Margaret Moses, *The Principles and Practice of International Commercial Arbitration*.

Given that there are no international treaties that exclusively govern confidentiality in international commercial arbitration and because of the absence of consistent practice of confidentiality in international arbitration, this article will emphasize the third and fourth level of legal instruments, namely the national arbitration law or *lex arbitri* and the arbitration rules. The *lex arbitri* chosen are the UNCITRAL Model Law, the Singapore International Arbitration Act 1994, and the French Code of Civil Procedure. The arbitration rules are represented by the ICC Arbitration Rules and the SIAC Arbitration Rules. These legal instruments are chosen simply because they are the most commonly chosen arbitration laws and rules respectively.

Confidentiality in the UNCITRAL Model Law and the Singapore International Arbitration Act and its Practice

The UNCITRAL Model Law, having been adopted by 110 jurisdictions, is at present one of the most influential legal instruments concerning international commercial arbitration.²¹ The Model Law by design omits confidentiality provisions. The drafters deliberated on regulating confidentiality but ultimately opted to leave the decision to the parties' discretion.²² The same approach remains unchanged in the 2006 Revisions of the Model Law.²³ Not all adopters kept the Model Law as is; Australia, New Zealand, Hong Kong, Peru, Romania, and Spain explicitly mandate confidentiality in arbitral proceedings unless otherwise agreed.²⁴

Singapore adopted the 1985 UNCITRAL Model through the International Arbitration Act 1994 ("IAA").²⁵ The IAA contains limited confidentiality provisions, mainly found in Sections 22 and 23, which are subject to exhaustive exceptions.²⁶ It does not expressly mandate confidentiality on the disputing parties in an arbitral proceeding, nor does it to arbitrators, but it does oblige Singaporean Courts to safeguard parties' confidential interest in litigation after arbitral proceedings, unless overridden by the parties' agreement or public interest consideration, all the while preserving the parties' legal interest.²⁷

²¹Born, G. B. (2021). *International Commercial Arbitration* (3rd Edition). Kluwer Law International B.V., Chapter 1.04.

²²Mahajan, R. (n.d.). The Dilemma of Confidentiality in Arbitration Proceedings: A Legal Quagmire. *Indian Journal of Integrated Research in Law, II*(II), para. 18; Mangan, M., Choong, J., & Lingard, N. (2018). *A guide to the SIAC arbitration rules* (Second edition). Oxford University Press, p. 24.

²³Born, 2021, Chapter 20.03; UN Secretary General. (1981). *Report of the Secretary-General: Possible features of a model law on international commercial arbitration* (A/CN.9/207; p. 31). United Nations, para. 101.

²⁴Born, 2021, Chapter 20.03.

²⁵The Republic of India v Deutsche Telekom AG, [2023] SGCA(I) 4 (Singapore Court of Appeal 2023), para. 18; Yeo, A., & Lee, L. W. (2018). *IBA Arbitration Guide: Singapore* (Country Guides). International Bar Association, p. 5.

²⁶Mangan, Choong, & Lingard, 2018, para. 16.161 16.18; *The Republic of India v Deutsche Telekom AG*, 2023, para. 17.

²⁷Mahajan, n.d., p. 5.

In case law Singapore has followed precedents set by the English and Welsh Court of Appeal in *Ali Shipping*. Subsequently, the Singaporean Courts have time and again, acknowledged the implied duty of confidentiality.²⁸ In *Myanma Yaung Chi Oo Co. Ltd. v. Win Win Nu* (henceforth called **Myanma**), the Singapore High Court stated that parties who chose arbitration are likely aware of and influenced by the fact that arbitration is private, and thus it is in keeping with their expectation that arbitration and aspects of its proceeding are inherently confidential rather than the opposite.²⁹ This is further affirmed in *AAZ and others v. AAZ* (henceforth called **AAZ**), in which confidentiality is held to be “a general principle or doctrine of arbitration law developed through common law”.³⁰ The Singaporean Courts have generally been accommodative of confidentiality, though still with limits. Recently, the Singaporean Court of Appeal in *the Republic of India v. Deutsche Telekom AG* (henceforth called **India-DT**) noted that it will protect and accept applications concerning confidentiality only in so far as the parties themselves have acted in measures appropriate in keeping confidentiality. While affirming that by default Singaporean Courts under the IAA will hold the litigation subsequent to arbitral proceedings in private to protect the parties’ confidentiality, this time, India’s request for confidentiality measures was not accepted on account that the confidentiality had been substantially lost in attribution to India’s conduct.³¹ In summary, The IAA is limited in addressing confidentiality. However, Singaporean Courts via case law have consistently expanded the thresholds and elaborated the minutiae of confidentiality, favoring a stronger and more defined regime.

Confidentiality in the French Code of Civil Procedure and its Practice

In France, the French Code of Civil Procedure (henceforth called **FCCP**) governs both domestic and international arbitration. Article 1504 to 1527 address international arbitration. Article 1506 incorporates domestic arbitration provisions for use in international arbitration. Article 1479, as incorporated by Article 1506 mandates confidentiality for arbitral tribunal deliberations. This article is the sole confidentiality provision in international commercial arbitration under the FCCP.³² The lack of confidentiality regulations in the FCCP could be deliberate. Article 1506 references Article 1464, which includes confidentiality obligation in its fourth paragraph. However, Article 1506 limits its reference to the third paragraph only, which mandates parties and arbitrators to act in good faith. As such, it might be that the FCCP restricts the duty of confidentiality to domestic arbitration only.³³ This absence is likely a deliberate

²⁸Born, 2021, Chapter 20.03, 20.08; Foden, T., & Repousis, O. G. (2019). Giving away home field advantage: The misguided attack on confidentiality in international commercial arbitration. *Arbitration International*, 35(4), 401–418. <https://doi.org/10.1093/arbint/aiz020>, p. 7; Mahajan, n.d., p. 6; Merkin & Hjalmarsson, 2016, p. 97.

²⁹*Myanma Yaung Chi Oo Co. Ltd v. Win Win Nu*, [2003] SGHC 124 (Singapore High Court 2003), para. 14,17; Merkin & Hjalmarsson, 2016, p. 97.

³⁰*AAZ and Others v. AAZ*, [2009] SGHC 142 (Singapore High Court 2009), para. 54.

³¹*The Republic of India v Deutsche Telekom AG*, 2023, paras. 28–29.

³²Carducci, G. (2012). The Arbitration Reform in France: Domestic and International Arbitration Law. *Arbitration International*, 28(1), 125–158. <https://doi.org/10.1093/arbitration/28.1.125>, p. 150; Castellane, B. (2011). The New French Law on International Arbitration. *Journal of International Arbitration*, 28(Issue 4), 371–380. <https://doi.org/10.54648/JOIA2011030>, p. 377; De Ly, F., Friedman, M., & Di Brozolo, L. R. (2012). International Law Association International Commercial Arbitration Committee’s Report and Recommendations on “Confidentiality in International Commercial Arbitration.” *Arbitration International*, 28(3), 355–396. <https://doi.org/10.1093/arbitration/28.3.355>, p. 360; Fábán, K. (2011). *Confidentiality in International Commercial Arbitration: To Whom Does the Duty of Confidentiality Extend in Arbitration?* Central European University, pp. 18, 32; Henry, M. (2022). An Arbitrator’s Perspective: Confidentiality – Privacy – Security in the Eye of the Arbitrators or the Story of the Arbitrator who Became a Bee. In D. Moura Vicente, E. Dias Oliveira, & J. Gomes De Almeida (Eds.), *Online Dispute Resolution* (pp. 181–204). Nomos Verlagsgesellschaft mbH & Co. KG. <https://doi.org/10.5771/9783748931508-181>, p. 186; Lembo, S., & Guignet, V. (2015). *Confidentiality in Arbitration: From Myth to Reality*. 2015 Fall Meeting of the American Bar Association, International Section, Montreal, p. 5; Mourre, A. (2011). *IBA Arbitration Guide: France* (Country Guides). International Bar Association, pp. 11–12. E. Dias Oliveira, & J. Gomes De Almeida (Eds).

³³French Code of Civil Procedure, Decree No. 2011-48 (2011), art. 1506(3), 1464.

choice to align with the trend of transparency in investment arbitration. However, this may come at the expense of removing the implied duty of confidentiality in commercial arbitration.³⁴

Unlike Singapore, French case law has been less definitive, with past precedents taking contrasting directions. In *Aïta v. Ojeh* (henceforth called **Ojeh**), the Paris Court of Appeal acknowledged the presence of an implied obligation of confidentiality, considering it inherent to arbitral proceedings. In this case, a party sought to annul a London-rendered arbitral award. However, the Court ultimately deemed itself lacking jurisdiction over the award, and saw the annulment attempt as an endeavor to prompt disclosure of confidential information, therefore breaching confidentiality.³⁵ *Ojeh* established two points. First, at the time of the decision, the French Court was of the opinion that confidentiality is intrinsic to international arbitration.³⁶ Second, it affirmed that merely seeking legal recourse can constitute evidence of breaching confidentiality if pursued before a court clearly lacking jurisdiction.³⁷ The perspective favoring confidentiality was reinforced in *Société True North et Société FCB Internationale v. Bleustein et al* (henceforth called True North), in which the Paris Commercial Court emphasized the duty of confidentiality and cited it can only be breached legal obligation.³⁸

However, the precedence has shifted recently. The Paris Court of Appeal through *Nafimco v. Foster Wheeler Trading Company* (henceforth called Nafimco) held that before seeking restitution for a breach of confidentiality, a party must first establish that the other party owes them confidentiality obligation and that the obligation has neither been waived nor rejected, without which the party must demonstrate that their circumstances warrant confidentiality under French law.³⁹ The decision in Nafimco suggests a departure from the presumptuous nature of confidentiality, presumably to align with the FCCP which contains no confidentiality provisions for international arbitration.⁴⁰ The other possibility is that the shift is an attempt to satiate the trend of transparency in investment arbitration.⁴¹

³⁴Castellane, 2011, p. 378; Kirby, J. (2011). The 2011 French Law on Arbitration. *International Legal Materials*, 50(2), 258–283. <https://doi.org/10.5305/intelegamate.50.2.0258>, p. 259. 2011. The new provisions come into force after May 1, 2011. This is the first comprehensive reform of French international arbitration law since the adoption of the pre-existing legal framework of 1981. French case law, which provided a well-structured basis for this decree, proposed numerous pragmatic solutions to problems encountered in international arbitration. This new decree codifies previous significant French case law while also providing novelties, innovations such as the possibility for the parties to waive by express agreement the annulment of the award any time they choose; the one-month time period after notification of the award to request annulment; the enforceability of the award notwithstanding an action to set aside or an appeal against an enforcement order.”,”container-title”:”Journal of International Arbitration”,”DOI”:”10.54648/JOIA2011030”,”ISSN”:”0255-8106”,”issue”:”Issue 4”,”journalAbbreviation”:”JOIA”,”language”:”en”,”page”:”371-380”,”source”:”DOI.org (Crossref

³⁵Aïta v. Ojeh, (Paris Court of Appeal February 18, 1986); Brown, A. C. (2001). Presumption Meets Reality: An Exploration of the Confidentiality Obligation in International Commercial Arbitration. *American University International Law Review*, 16(4). <http://digitalcommons.wcl.american.edu/auilr>, pp. 975–976; Noussia, K. (2010). *Confidentiality in international commercial arbitration: A comparative analysis of the position under English, US, German and French law*. Springer, pp. 120–121.

³⁶Blackaby, N., QC, C. P., Redfern, A., & Hunter, M. (2015). *Redfern and Hunter on International Arbitration* (Sixth). Oxford University Press, para. 2.182; Garimella, S. R. (2016). Revisiting Arbitration’s Confidentiality Feature. *CLJP Hors Serie*, XX(5), p. 97.

³⁷Kaushal, A. (2014). The Issue of Confidentiality in International Commercial Arbitration. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2379975>, p. 8.

³⁸Bleustein et autres v. Société True North et Société FCB International, (Tribunal de Commerce de Paris (Ord. réf.) February 22, 1999); Noussia, 2010, p. 101.

³⁹Blackaby, QC, Redfern, & Hunter, 2015, p. 130; Castellane, 2011, p. 378; Finizio, S., & Miles, W. (2009). *The International Comparative Legal Guide to: International Arbitration 2009* (The International Comparative Legal Guide). Global Legal Group, p. 149; Noussia, 2010, p. 76; Poorooye, A., & Feehily, R. (2017). Confidentiality and Transparency in International Commercial Arbitration: Finding the Right Balance. *Harvard Negotiation Law Review*, 22(2), pp. 291–292. QC, Redfern, & Hunter, 2015, p. 130; Castellane, 2011, p. 378; Finizio, S., & Miles, W. (2009)

⁴⁰Poorooye & Feehily, 2017, pp. 291–292.

⁴¹Carducci, 2012, p. 150.

Confidentiality in the SIAC Rules and the ICC Arbitration Rules

Arbitration rules are not created equal in their treatment of confidentiality. Some are silent, while others expressly regulate it.⁴² The SIAC Rules are among those that address this issue. Article 39 of the SIAC Rules imposes a comprehensive duty of confidentiality on all participants of an arbitral proceeding, including arbitrations, covering “all matters” related to the proceeding and the award itself – conditional upon the pre-determined exceptions⁴³ – and throughout all stages of the arbitral proceeding.⁴⁴ Furthermore, the SIAC Rules broadly define “matters relating to the proceedings” to include the existence of the proceedings and numerous types of documents. However, the obligation is not extended to witnesses and party-appointed experts. Disputing parties may argue the rule with additional confidential agreements if they wish to expand their confidentiality further.⁴⁵ Additionally, arbitrators appointed under the SIAC Rules must first accept the conditions outlined in the arbitrator’s terms of appointment (henceforth called **SIAC’s Terms**), which includes a stipulation for arbitrators to keep confidential information gained during a proceeding and refrain from using it for personal or others’ advantage.⁴⁶ In practice, the SIAC Rules’ supportive construction of confidentiality has been cited by the Singapore Court of Appeal in *PT First Media TBK v. Astro Nusantara International BV and Others* (henceforth called **First Media**). The court deemed confidentiality as “central” to arbitral proceedings under the SIAC Rules, even to the extent of finding that the arbitral tribunal has impinged parties’ confidentiality by forcing a joinder.⁴⁷ To sum up, the SIAC Rules are protective and supportive of parties’ confidentiality needs with exceptions clearly delineated.

Initially silent, the ICC introduced a confidentiality provision in its 1998 version of the ICC Rules.⁴⁸ Unlike the SIAC Rules, confidentiality under the ICC Rules is far less stringent. The single and only confidentiality provision in the ICC Rules grants arbitrators the power to address confidentiality upon a party’s request, without imposing confidentiality on the participants; no additional confidentiality provisions exist.⁴⁹ While confidentiality is referenced in the appendices, these provisions are aimed at guiding Court members in their administrative functions for the ICC Court, rather than addressing participants in arbitrations conducted under the ICC Rules.⁵⁰ This indicates that the existence of an ICC arbitral proceeding and its materials are not mandatorily to be treated confidentially by anyone other than members of the Court.⁵¹ One case, *the United States v. Panhandle Eastern Corp.* (“**Panhandle**”), highlighted the limitation of the ICC Rules’ confidentiality provisions. The US District Court of Delaware denied a motion for a protective order to prevent the production of confidential documents

⁴²Mangan, Choong, & Lingard, 2018, para. 16.20.

⁴³Mangan, Choong, & Lingard, 2018, p. 61; SIAC Rules, (2016), art. 39.1, 39.2.

⁴⁴Born, 2021, Chapter 13.06.

⁴⁵Mangan, Choong, & Lingard, 2018, para. 16.23.

⁴⁶Mangan, Choong, & Lingard, 2018, para. 8.18; Singapore International Arbitration Centre—Code of Ethics for an Arbitrator, (2015), art. 7.1.

⁴⁷PT First Media TBK (formerly known as PT Broadband Multimedia TBK) v. Astro Nusantara International BV and others and another appeal, [2013] SGCA 57 (Singapore Court of Appeal 2013), para. 186.

⁴⁸ICC Arbitration Rules (1998), (1998), art. 20(7).

⁴⁹Vouga, R. T. (2022). A Judge’s Perspective: Privacy and Confidentiality in Voluntary Commercial Arbitration. In D. Moura Vicente, E. Dias Oliveira, & J. Gomes De Almeida (Eds.), *Online Dispute Resolution* (pp. 159–180). Nomos Verlagsgesellschaft mbH & Co. KG. <https://doi.org/10.5771/9783748931508-159>, p. 169; Webster, T. H., & Bühler, M. (2021). *Handbook of ICC arbitration: Commentary and materials* (5th edition). Sweet & Maxwell/Thomson Reuters, para. 4.12, 11.44.

⁵⁰Fabián, 2011, p. 51; Fouchard, Gaillard, & Goldman, 1999, para. 1132; Fry, J., Greenberg, S., & Mazza, F. (2012). *The Secretariat’s Guide to ICC Arbitration*. ICC Publication, paras. 3–806; Henry, 2022, p. 186; ICC Arbitration Rules (2021), (2021), app. I.8, II.1, II.3(2); Mahajan, n.d., p. 7; Webster & Bühler, 2021, para. 1.40-1.50.

⁵¹Webster & Bühler, 2021, para. 22.50.

related to a prior ICC arbitral proceeding due to the absence of confidentiality obligation in the ICC Rules and the arbitration agreement.⁵²

The non-existence of a general obligation of confidentiality in the ICC Rules reflects a deliberate decision by its drafters. Recognizing the significant differences in *lex arbitri* and the practical challenges involved, the drafters opted to delegate the specifics of confidentiality to the disputing parties. Allowing them with their arbitrators to tailor-make confidentiality measures within the ICC Rules framework to best suit their needs and encouraging the parties to select the appropriate *lex arbitri*.⁵³ The ICC Rules by itself do not prescribe more than the barest of confidentiality provision. Hence, confidentiality in an ICC arbitration is largely dependent on the arbitration agreement, the *lex arbitri*, and the stipulations set in the terms of reference.⁵⁴

In conclusion, it's evident that confidentiality provisions within current *lex arbitri* are generally vague and inconsistent, there's variability in what materials are covered and who is bound by the obligation, if at all.⁵⁵ *Lex arbitri* requiring explicit consent for confidentiality offers clearer guidance than those remaining silent on the matter. Meanwhile, institutional arbitration rules are generally more precise, but exceptions exist, as seen in the ICC Rules. When confidentiality provisions are explicit, as in the SIAC Rules, parties can find assurance in detailed confidentiality measures. However, no *lex arbitri* nor arbitration rules comprehensively cover all aspects of arbitral confidentiality.

Kleros Blockchain Arbitration Mechanism and Its Practice on Confidentiality

Kleros offers a range of interconnected services, notably the Kleros Court, i.e., the arbitration service, where users “arbitrate disputes in every kind of contract, from very simple to highly complex ones.”⁵⁶ This court is complemented by Kleros' escrow service. Structurally, Kleros Court is divided into a number of specialized sub-courts, with the “General Court” serving as the appellate authority. In addition, Kleros fundamentally operates as a cryptocurrency enterprise. Kleros sells the Pinakion token (henceforth called **PNK**), named after the Ancient Athenian's token to signify jury membership.⁵⁷ PNK tokens are freely traded on a number of online cryptocurrency exchanges, with prices fluctuating based on market demand, highlighting the speculative aspect of the venture.⁵⁸ The PNK token serves as payments for jurors, a ticket for participation in the arbitration mechanism, and in the future, as a voting tool in Kleros governance.⁵⁹ Kleros provides several reasons for the necessity of the PNK token, including protection against Sybil attacks. In the context of Kleros, Sybil attacks involve an actor creating multiple identities to flood the juror pool, potentially influencing case outcomes.⁶⁰ The PNK token aims to deter such attempts by establishing a paywall, as then the actor would have to invest a significant amount.

⁵²Brown, 2001, p. 976; United States of America v. Panhandle Eastern Corp., 118 F.R.D. 346 (D. Del. 1988) (United States District Court, D. Delaware 1988), para. 350.

⁵³Fry, Greenberg, & Mazza, 2012, p. 235; Webster & Bühler, 2021, para. 22.52, 22.63, 23.3, 23.62, (p) 796.

⁵⁴Webster & Bühler, 2021, para. 3.23, 22.52.

⁵⁵Fouchard, Gaillard, & Goldman, 1999, para. 1132.

⁵⁶Lesage, George, & Ast, 2021, p. 1.

⁵⁷Edwin Carawan. (2016). Court Reform, Klērōtēria, and Comic Testimony. *The Classical Journal*, 111(4), 385. <https://doi.org/10.5184/classicalj.111.4.0385>, pp. 385–386; Leena Pietilä-Castrén. (2016). A Lost Pinakion Rediscovered. *Hesperia: The Journal of the American School of Classical Studies at Athens*, 85(1), 201. <https://doi.org/10.2972/hesperia.85.1.0201>, p. 201; Sing, R. (2010). *Investing in Democracy: The Practice and Politics of Jury Pay in Classical Athens*. The University of Western Australia, School of Humanities, Classics and Ancient History, p. 93; Third Meeting. (1932). *The Cambridge Classical Journal*, 148, 3–4. <https://doi.org/10.1017/S0068673500008403>, p. 3.

⁵⁸Kleros. (2023g, May 22). PNK Token. *Kleros*. <https://kleros.io/en/token/>.

⁵⁹George, W. (2023, May 22). Why Kleros Needs a Native Token. *Kleros*. <https://medium.com/kleros/why-kleros-needs-a-native-token-5c6c6e39cdfc>; Kleros. (2023c, May 22). Kleros FAQ - PNK Token. *Kleros*. <https://docs.kleros.io/pnk-token>.

⁶⁰Douceur, J. R. (2002). The Sybil Attack. In P. Druschel, F. Kaashoek, & A. Rowstron (Eds.), *Peer-to-Peer Systems* (Vol. 2429, pp. 251–260). Springer Berlin Heidelberg. https://doi.org/10.1007/3-540-45748-8_24, p. 251.

The platform’s arbitration process involves users as disputing parties or jurors, creating a distinct corridor for each role: the disputant’s and the juror’s corridor.⁶¹

DISPUTANTS CORRIDOR	JUROR CORRIDOR
<ol style="list-style-type: none"> 1. Parties negotiate their rights and obligations as they normally would. 2. Upon agreement, a smart contract is drafted designating Kleros as the dispute resolution forum. The contract includes pertinent details and the contract funds, the latter is then held by the Kleros’ escrow service. 3. The parties perform their contractual obligations. 4. If both parties agree on satisfactory performance, the contract concludes, and the escrowed funds is released and sent to the intended recipient. If either party feels unsatisfied, the aggrieved party pays the arbitration fee (in PKN) and the corresponding gas fee to trigger Kleros arbitration. The other party must response in kind by payment. Failure to pay results in automatic loss. 5. Kleros refers the dispute to the chosen sub-court and assigns jurors. The disputing parties present their case by submitting proof and arguments. 6. After reviewing the parties’ submissions, the jurors deliberate and vote to reach an award. 7. An optional appeal stage is available upon request. Otherwise, the winning party receives their PNK award and have their arbitration fee refunded, shifting the cost of the proceeding to the losing party. 	<ol style="list-style-type: none"> 1. To become a Kleros juror, users must initially acquire cryptocurrencies to purchase PNK tokens (“PNK”). 2. Having acquired PNK, users put them as collateral in a Kleros sub-court of their choice, this process is known as “staking”, which incurs a gas fee proportional to the staked PNK amount. 3. Staking qualifies users for inclusion in the jury pool of the selected sub-court, higher staked PNK increases the chances of users being selected as juror. 4. Unselected users will get their PNK returned. Selected users will have a portion of their staked PNK locked by Kleros, with the remainder returned. The locked portion will only be released if the juror votes “coherently” – that is in alignment – with the majority of the jurors; otherwise, it is forfeited. 5. Once chosen, jurors review evidence and arguments submitted by the disputing parties and vote accordingly. The voting process incurs gas fee as well. 6. After voting is concluded, a coherent juror will receive a portion of the arbitration fee (in PNK), a share of tokens forfeited from incoherent jurors, and the entirety of their locked PNK.

Regarding confidentiality, neither the parties nor the jurors are prompted with confidentiality provisions at any stages of the proceeding. Furthermore, when selecting a sub-court to participate in, potential jurors are only provided with brief and simplistic general policies. For instance, those interested in adjudicating disputes in the “Onboarding” sub-court are informed that disputes submitted there should be relatively simple and require less than 1 hour to resolve. Similar lack of detail is found in policies for other sub-courts; for example, the “Marketing Services” sub-court simply states that it’s the marketing contractor’s responsibility to prove service delivery. No confidentiality provisions were found in any of the sub-courts’ policies issued by Kleros.⁶² Kleros’ long paper and short paper, which outline the design and operation

⁶¹Bergolla, Seif, & Eken, 2021, pp. 60–67; Kleros. (2023d, May 22). Kleros FAQ - What Happens During a Dispute? *Kleros*. <https://docs.kleros.io/products/court/what-happens-during-a-dispute/>; Lesage, George, & Ast, 2021, pp. 4–8.

⁶²Kleros. (2023a, May 22). Kleros Courts. *Kleros*. <https://court.kleros.io/courts>.

of its blockchain arbitration service, make no reference to confidentiality.⁶³ Similarly, Kleros' Terms of Service ("TOS"), Privacy Policy, and Frequently Asked Questions ("FAQ") lack any details on how confidentiality is handled by Kleros.⁶⁴ Searches on Kleros' webpage and public search engine yielded only one passing mention of confidentiality. This mention was found in an article written by a Kleros contributor, which briefly discussed data confidentiality and security within smart contracts. Interestingly, the contributor noted that data confidentiality can be influenced by external factors beyond the Kleros system, to quote, "*Smart contracts are smart enough to automatically execute as programmed, but not to render subjective judgements or to include elements from outside the blockchain ("data confidentiality and security")*".⁶⁵

Unfortunately, this represents the entirety of confidentiality within Kleros. There are no indications of confidentiality concerns within the service, let alone provisions concerned with *ratione materiae*, *ratione personae*, and *ratione temporis* of confidentiality. In essence, Kleros current confidentiality regime is nonexistent. If a Kleros dispute were to be brought before a court on the question of confidentiality, India-DT suggests that it may even be possible the parties are deemed not to have adequately safeguarded confidentiality, owing to the fact the parties deliberately chose Kleros whose confidentiality measures are questionable in the first place.⁶⁶

Kleros Jurors' Anonymity

Confidentiality obligations stem from the agreement between disputing parties, either through reference by incorporating *lex arbitri* and arbitration rules or integrating a tailor-made clause.⁶⁷ Essentially, these are contractual agreements, which may be entered into by arbitral participants by expressing their intent – typically through signature.⁶⁸ Jurors in Kleros blockchain arbitration do not have the same opportunity. Kleros' method of selecting jurors from an anonymous pool is coupled with a strict insistence on maintaining their anonymity. Prospective jurors are not required to provide any form of identity or qualifications, allowing virtually anyone to become a juror. Evidently Kleros relies on jurors' good faith and their self-assessment of sound judgment and fair and impartial ethics in overseeing disputes. Kleros emphasizes that screening jurors poses a causality dilemma akin to the classic question of "What comes first? The chicken or the egg?".⁶⁹ This policy is said to protect jurors from bribery, intimidation, and retaliation attempts.

However, on the other hand, this practice raises several concerns regarding confidentiality. First, disputing parties lack assurance regarding jurors' ethics due to anonymity. Without knowing their identity or professional records, parties rely on luck for discreet and good-faith jurors. Second, strict anonymity hampers the meaningful signing of confidentiality clauses by jurors. In the hypothetical case of parties drafting their confidentiality clause, jurors are not able to sign into it as their identities are unknown. Third, ensuring jurors' compliance to confidentiality is impractical. Disputing parties can not verify compliance or ensure jurors have not misused confidential information. Fourth, legal recourse options are limited. In the off chance that somehow, disputing parties discover a juror's breach of confidentiality, filing a legal action against an anonymous internet persona is near impossible. Admittedly, given

⁶³Lesaeger, Ast, & George, 2019; Lesaeger, George, & Ast, 2021.

⁶⁴Kleros, 2023b; (2023e, May 22). Kleros Privacy Policy. *Kleros*. <https://forum.kleros.io/privacy/>; (2023f, May 22). Kleros Terms of Service. *Kleros*. <https://forum.kleros.io/tos>.

⁶⁵Narozhny, D. (2023, May 22). Is Kleros Legally Valid as Arbitration? *Kleros*. <https://blog.kleros.io/is-kleros-legally-valid-as-arbitration/>.

⁶⁶*The Republic of India v Deutsche Telekom AG*, 2023, paras. 28–29.

⁶⁷Born, 2021, Chapter 2.01 (Summary); 2021, Chapter 1.04.

⁶⁸Born, 2021, Chapter 1.04, [E], [1].

⁶⁹Kleros, 2023b.

enough time, monetary, and effort invested, parties may uncover juror's identity. However, due to the digital nature of blockchain arbitration, additional complications arise. Disputing parties and Kleros may need to navigate data protection laws to ensure legality. By which point one of the supposed advantages of arbitration, efficiency, has long left the parties.

These hypothetical issues likely would not have arisen if disputing parties had chosen conventional arbitration instead. Arbitrators' identity is known to the parties and the arbitral institution in the first place and institutional rules typically include confidentiality provisions. For example, SIAC requires prospective arbitrators to sign terms of appointment, within which there exists confidentiality obligation.⁷⁰ Even if the arbitration rules lack express confidentiality provisions – such is the case with the ICC Rules, their model terms of reference include an optional confidentiality clause for arbitrators.⁷¹ All else notwithstanding, in an arbitration under the ICC or the SIAC Rules with proper safeguards in place by way of robust confidentiality clause, terms of reference and the like, if an arbitrator breached confidentiality, the worst-case scenario would be the party knowing who to sue.

Drafting Confidentiality Provisions for Kleros

As an alternative to disputing parties having to draft their confidentiality clause, from the perspective of the authors, Kleros perhaps should develop a more comprehensive confidentiality regime. Firstly, Kleros needs to reconsider its strict stance on anonymity. Despite Kleros' current policy, some form of identity disclosure is necessary to hold jurors accountable for probable misconduct during proceedings. Although, this may face objections due to the blockchain's community's preference for anonymity.⁷² Secondly, there should be well-designed confidentiality provisions mandated at minimum, on the disputing parties and jurors before the proceedings begin. Kleros has the advantage of being able to draw from numerous *lex arbitri*, arbitration rules, and established case law in drafting its confidentiality provisions.

Drawing from case laws discussed earlier, drafters should be mindful of unique thresholds. For instance, following the Panhandle case, clear wording should be used to explicitly include desired participants bound by confidentiality, whether the obligation would be limited to disputing parties only or extended to include jurors.⁷³ Kleros can consider the *ratione materiae* by reviewing cases where the scope of materials has been expanded.⁷⁴ Reflecting on India-DT will illuminate drafters as to which actions amount to derogation of confidentiality.⁷⁵ Last but not least, Nafimco highlights the importance of having an express confidentiality provisions in the Kleros ecosystem to help parties establish confidentiality in jurisdictions where necessary. Meanwhile, *lex arbitri* and institutional rules provide insight into what is typically expected of confidentiality provisions. For example, most arbitration rules empower arbitrators to issue confidentiality orders, outline circumstances where disclosure of confidential information are permitted, and specify materials protected by confidentiality.⁷⁶ Kleros should glean from the experiences provided by these existing precedents and provisions, as they are the result of trial and error in drafting confidentiality regime.

⁷⁰Mangan, Choong, & Lingard, 2018, para. 8.18; Singapore International Arbitration Centre—Code of Ethics for an Arbitrator, 2015, art. 7.1.

⁷¹Model of ICC Terms of Reference, (2018), art. 56.

⁷²Werbach, K. (2018). *Trust, but Verify: Why the Blockchain Needs the Law*. <https://doi.org/10.15779/Z38H41JM9N>, p. 524.

⁷³*United States of America v. Panhandle Eastern Corp.*, 1988, para. 350.

⁷⁴*Myanma Yaung Chi Oo Co. Ltd v. Win Win Nu*, 2003, paras. 14, 17; *AAZ and Others v. AAZ*, 2009, para. 54.

⁷⁵*The Republic of India v Deutsche Telekom AG*, 2023.

⁷⁶Baker McKenzie. (n.d.). Comparative Chart of International Arbitration Rules. *Global Arbitration News*. <https://www.globalarbitrationnews.com/comparative-chart/>.

In Any Event, Are Jurors (or Arbitrators) Inherently Bound to the Duty of Confidentiality?

Generally, *lex arbitri* rarely expressly impose confidentiality duties on arbitrators. However, within the *lex arbitri* that do contain confidentiality provision, even without express imposition, arbitrators may be bound by principle. Alternatively, arbitrators are bound to confidentiality by accepting appointment under arbitration agreements or institutional rules containing confidentiality provisions. By reference, these provisions are applicable over the arbitrator's contract, thus arbitrators are obliged maintain confidentiality.⁷⁷ There is also a perspective suggesting that even if parties are not bound by confidentiality, arbitrators are inherently obliged to maintain confidentiality due to their quasi-judicial and adjudicative function.⁷⁸ If we define arbitrators by their function and qualities as evidenced by this view, by the same logic, jurors are inherently bound to confidentiality as well – regardless of everything else – as they both occupy the same quasi-judicial role.⁷⁹

Impartiality and Independence

Impartiality and independence often come in pairs and are grouped, but they are just as often prescribed individually, each standing alone without the other. Some argue that the two are interchangeable. Naturally, efforts have been made to distinguish them. It is generally understood that impartiality is when an arbitrator thinks of both parties as equal without favoring one of them over the other, i.e., the absence of favoritism and bias in the arbitrator's mind. While, independence means an arbitrator free from inappropriate external relationships (social, professional, or financial) with the parties or their counsel.⁸⁰ Despite the seeming importance of both, it is not uncommon for *lex arbitri* to stipulate only one over the other. The Swiss Private International Law requires the arbitrator to be only "independent", whereas the English Arbitration Act prescribes the arbitrator to be only "impartial", while the FCCP, the UNCITRAL Model Law, and Model Law adjacent *lex arbitri*, e.g., the Singapore International Arbitration Act use the "independent and impartial" construction. However, the differences might not as important as the intended purpose of subjecting the requirements. That is to say, impartiality is a subjective goal, wherein the arbitrators are hoped to have a neutral state of mind, whereas independence is an objective goal, in which factual relations are established to gauge the likelihood of the arbitrators' subjectively changing their judgment. That an arbitrator has subjectively changed their aforementioned neutral state of mind – i.e., impartiality – is largely established through examination into the surrounding objective facts. At the same time, objective facts – i.e., independence – are relevant only inasmuch as how it evidences arbitrators' neutral state of mind, or lack thereof. As such, although independence is of objective concern while impartiality is subjective, they are intrinsically linked and the very purpose of both is ultimately to declare an arbitrator's subjectivity or impartiality.⁸¹ Hence regardless of the construction chosen, they are all singular in their goal to approach the issue by using the "justifiable doubts" measuring stick.

⁷⁷Born, 2021, Chapter 13.04, [C].

⁷⁸Born, 2021, Chapter 13.04, [C]; Fouchard, Gaillard, & Goldman, 1999, para. 1167; Webster & Bühler, 2021, para. 22.51.

⁷⁹*Arenson v. Casson Beckman Rutley & Co.*, 1977, para. 436.

⁸⁰Blackaby, QC, Redfern, & Hunter, 2015, pp. 254–255; Born, 2021, Chapter 12.05, [A], [2].

⁸¹PT Central Investindo v. Franciscus Wongso, [2014] SGHC 190 (Singapore High Court 2014), para. 19; Merkin & Hjalmarsson, 2016, pp. 138–139.

Measuring Impartiality and Independence

First and foremostly, the baseline to which arbitrators are expected to act insofar as establishing impartiality and independence is the arbitrators' mandatory disclosure.⁸² The Model Law, the IAA, and the FCCP make obligatory prior appointments, for arbitrators to disclose any circumstances that may influence their independence or impartiality, likewise, disclosure is to be made promptly if the circumstances arise after the appointment as well.⁸³ Beyond that, impartiality and independence are more measured in international commercial arbitration than its confidentiality counterpart. As for the litmus test, one approach prevails in most jurisdictions, which is to apply "justifiable doubts" in determining impartiality and independence. The Model Law prominently exemplifies this, Article 12(2) prescribes that an arbitrator may be challenged only if there exist circumstances that give rise to justifiable doubts concerning their impartiality or independence. Having adopted the Model Law, Singapore prescribes the same requirements in the IAA.⁸⁴ Whereas the FCCP via Article 1456 as made applicable by Article 1506(2) although phrased differently, bears the same essence.⁸⁵ As to what "justifiable doubt" entails, the alleging party must establish factual circumstances to show the possibility that the alleged arbitrator(s) might be biased. In other words, the only requirement is that factual circumstances sufficiently casting doubt – from an objective observer's point of view – must be established, without further criteria as to the degree of certainty concerning the arbitrators' alleged partiality or dependence.⁸⁶

Meanwhile, in addition to subjecting the arbitrators to the standards that might have been imposed by the arbitration agreement, institutional arbitration rules also contain impartiality and independence provisions broadly similar to *lex arbitri*. But most importantly, institutional arbitration rules ask prospective arbitrator to affirm the two qualities by signing statements or certifications, which formally and legally binds arbitrators to the duty of impartiality and independence.⁸⁷

⁸²Blackaby, QC, Redfern, & Hunter, 2015, p. 255.

⁸³Böckstiegel, K.-H., Kröll, S., & Nacimiento, P. (Eds.). (2007). *Arbitration in Germany: The Model Law in practice*. Wolters Kluwer Law & Business, p. 34.

⁸⁴International Arbitration Act 1994, (2020), art. 12.

⁸⁵Born, 2021, Chapter 12.05, [A], [1], [e]; French Code of Civil Procedure, 2011, arts. 1456, 1506(2).

⁸⁶[CLOUT Case 665], 10 SchH 3/01 [A/CN.9/SER.C/ABSTRACTS/61] (Oberlandesgericht Naumburg 2001), p. 6; Merkin & Hjalmarsson, 2016, p. 138; *Report on Review of Arbitration Laws*. (1993). Law Reform Committee, art. 12; Vereinte Nationen (Ed.). (2012). *UNCITRAL 2012 Digest of Case Law on the Model Law on International Commercial Arbitration*. United Nations, p. 65. Oxon ; New York, NY; ISBN: "978-1-138-80183-7", "number-of-pages": "323", "publisher": "Informa Law from Routledge", "publisher-place": "Abingdon, Oxon ; New York, NY", "source": "Library of Congress ISBN", "title": "Singapore arbitration legislation: annotated", "title-short": "Singapore arbitration legislation", "author": [{"family": "Merkin", "given": "Robert M."}, {"family": "Hjalmarsson", "given": "Johanna"}], "issued": {"date-parts": [{"2016}], "label": "page"}, {"id": "110", "uris": ["http://zotero.org/users/local/vPEOsjlk/items/BJGGPEIQ"], "itemData": {"id": "110", "type": "report", "event-place": "Singapore", "publisher": "Law Reform Committee", "publisher-place": "Singapore", "title": "Report on Review of Arbitration Laws", "issued": {"date-parts": [{"1993}], "label": "page"}, {"id": "173", "uris": ["http://zotero.org/users/local/vPEOsjlk/items/HLIR2IDX"], "itemData": {"id": "173", "type": "book", "abstract": "This publication contains a presentation of case laws rendered in jurisdictions having enacted the UNCITRAL Model Law on International Commercial Arbitration. In light of the large number of cases collected, the Commission requested a tool specifically designed to present selected information on the interpretation and application of the Model Law in a clear, concise and objective manner. This request originated the UNCITRAL Digest of Case Law on the Model Law on International Commercial Arbitration. The purpose of the digest is to assist in the dissemination of information on the Model Law and further promote its adoption as well as its uniform interpretation and application. In addition, the digest is meant to help judges, government officials, arbitrators, practitioners and academics use more efficiently the case law relating to the UNCITRAL text", "collection-title": "United Nations publication", "event-place": "New York", "ISBN": "978-92-1-133793-8", "language": "eng", "number-of-pages": "232", "publisher": "United Nations", "publisher-place": "New York", "source": "K10plus ISBN", "title": "UNCITRAL 2012 Digest of Case Law on the Model Law on International Commercial Arbitration", "editor": [{"family": "Vereinte Nationen", "given": ""}], "issued": {"date-parts": [{"2012}], "label": "page"}, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}]

⁸⁷Born, 2021, Chapter 12.05, [H].

In the context of Kleros blockchain arbitration, it might be asserted that independence is fulfilled due to jurors' appointment being voluntarily deferred to the Kleros system by the parties, but at the same time, that very same independence could not be ascertained for sure. Kleros' blockchain arbitration immediately fails the "justifiable doubts" approach establishing impartiality and independence. Obligation to disclose aside, which Kleros does not impose on its jurors – parties typically use publicly available information or information made available associated with a particular arbitrator, such as their professional history, connections, and commitments to examine the arbitrator's probable dependence and partiality. Given the insistence on the anonymous nature of their jurors and thus the lack of available information, it is bordering impossible to make an informed assessment concerning whether a juror might possess connections that cast doubt on their independence. The parties are unable to establish objective and factual circumstances that give rise to justifiable doubts simply because the practical avenues to do so are practically unavailable to them in the first place, effectively robbing the parties of their right to question the juror appointment and ultimately a fair proceeding.

Additionally, jurors' partiality might also be in question. The ICC Court has taken-into account arbitrator's economic interest in its rulings on conflict-of-interest issues, in particular the connection between professional connection and their economic interest.⁸⁸ Differing remuneration arrangements for arbitrators should be avoided to ensure independence and impartiality. Kleros selects its jurors in proportion to the number of tokens the potential jurors have staked, with higher stakes increasing the probability of selection which raises the issue of partiality. The economic interest being a point of examination, instead of paid with a fixed contractual or negotiated fee customarily found in conventional arbitration, jurors are paid in accordance to how aligned their vote is to the rest of the jurors' majority vote. Additionally, jurors who vote against the majority will lose some of their tokens and will not be paid arbitration fees.⁸⁹ This practice will to an extent, influence jurors to perhaps subconsciously guess as to how the rest of the jurors might vote, in order to gain economic benefit from the arbitration fee and not to lose their staked tokens. Consequently, this hinders jurors from making decision exclusively drawn from the facts and arguments presented by the parties.

Last but not least, with the ever-increasing convergence with the online world, impartiality and independence may be derogated in unprecedented ways. They must then be assessed contextually against this relatively new background, which brings us to the next discussion.

The Additional Dimension of Online Identity

Kleros is not the first to face the challenge of regulating online identities, conventional arbitration has faced the same problem. There are two types of digital identities. Online identity, that which closely reflects a person's offline or "real" identity, and virtual identity is no more than pseudonym. Online identity as used by arbitrators in their digital activity has become a point of contention in the arbitration community. Some call that arbitrators' independence and impartiality may be derogated by the connections they establish on social media, and incidental disclosure of confidential information becomes more probable. There are propositions to data mine arbitrator's online identities to establish the extent of their impartiality. Although, some argue that such a measure is excessive and arbitrators' online identities must be assessed not in binary but contextually taking-into account the type of social media and the type of

⁸⁸Bastida, B. M. (2007). The Independence and Impartiality of Arbitrators in International Commercial Arbitration from a Theoretical and Practical Perspective. *E-Mercatoria*, 6(1), p. 9.

⁸⁹Born, 2021, Chapter 13.06, [A]; Lesaeghe, Ast, & George, 2019, p. 7.

relationship. For example, a LinkedIn connection may not necessarily indicate anything more than a professional relationship.

In response to such unease and conflicting views, several guidelines and the code of ethics were drafted by either arbitral institutions or professional associations. These guides largely outline the conduct permissible to arbitrators in using online identities to help make them more accountable including stipulation for arbitrators to keep confidential arbitral matters. However, by and large, this type of solution is only possible due to the visible link between arbitrators and their online identities. Conversely, the type of identity used in blockchain arbitration is a virtual identity without clear association as to who the real person behind the juror identity is. Once again, this shows that without Kleros changing their position on strict anonymity there could never be a full trust established between parties and jurors.⁹⁰

CONCLUSION

Kleros blockchain arbitration may be the solution to the pursuit of faster and more cost-efficient arbitration, but it faces a challenge in confidentiality. Despite the varying interpretations and practices between jurisdictions, parties often opt for arbitration in search of confidentiality.⁹¹ However, Kleros policies are simplistic and entirely overlook confidentiality. Consequently, the only probable way to ensure all participants in the Kleros mechanism are bound to confidentiality – including jurors – is through a tailor-made clause in the underlying arbitration agreement. That said, the situation is further complicated by Kleros' strict anonymity policy, which result in the difficulty of binding jurors into confidentiality clause, ensuring their compliance, and holding them liable for probable breach. Such as it is, jurors are left without liability in handling confidential information. Therefore, a change in Kleros' attitude towards confidentiality is necessary. Reconsidering anonymity and implementing confidentiality provisions – informed by established laws, rules, and precedents – could create a more conducive confidential environment in the Kleros ecosystem. In any event, without prejudice to facts and other interpretations of law, arbitrators (and jurors, for the same underlying reason of their quasi-judicial role) might be inherently bound to confidentiality – irrespective of express provisions set in arbitration rules. But, should there be any breach, the difficulty in pursuing restitution remains.

In regards to impartiality and independence, without disclosure of identity and pertinent information, parties are not able to make an informed judgements and decisions as to the existence of objective factual information giving rise to justifiable doubts concerning jurors' impartiality and independence. In turn, such ambiguity prevents trust between the parties and the jurors from being ever fully established and more importantly, reduces the legitimacy of the blockchain arbitral proceeding and subjects the eventual award into question.

To conclude, Kleros is currently ill-equipped to handle disputes requiring confidentiality, impartiality, and independence. Without changes, its blockchain arbitration mechanism may not be a viable alternative. If disputing parties so insist in using Kleros, they must ask whether they are willing to forego or risk their confidential information to be disclosed, particularly by jurors. Parties must also be mindful of how trustworthy the jurors' impartiality and independence are without being able to ascertain them through traditional means of disclosure and scrutiny.

⁹⁰Katsh, M. E., & Rabinovich-Einy, O. (2017). *Digital justice: Technology and the internet of disputes*. Oxford University Press, pp. 4–6; Piers, M., & Aschauer, C. (Eds.). (2018). *Arbitration in the Digital Age: The Brave New World of Arbitration* (1st ed.). Cambridge University Press. <https://doi.org/10.1017/9781108283670>, Chapter 10.

⁹¹Mangan, Choong, & Lingard, 2018, para. 16.11.

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