Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Table Of Content

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

ISSN (ONLINE) 2598 9928

SCAN ME

Website

INDONESIAN JOURNAL OF LAW AND ECONOMIC

PUBLISHED BY
UNIVERSITAS MUHAMMADIYAH SIDOARJO

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Originality Statement

The author[s] declare that this article is their own work and to the best of their knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the published of any other published materials, except where due acknowledgement is made in the article. Any contribution made to the research by others, with whom author[s] have work, is explicitly acknowledged in the article.

Conflict of Interest Statement

The author[s] declare that this article was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright Statement

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

EDITORIAL TEAM

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Article information

Check this article update (crossmark)

Check this article impact (*)

Save this article to Mendeley

(*) Time for indexing process is various, depends on indexing database platform

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Smart Contracts and the Challenges of Conflict of Laws in Digital Space

Attia Suleiman Khalifa, dratia_hwj@ntu.edu.iq, (1)
Al-Huwayjah Technical Institute, Northern Technical University, Iraq

Nashwan Salah Samad, nashwan.salah@ntu.edu.iq, (0)
Health and Medical Technical College, Kirkuk, Northern Technical University, Iraq

(1) Corresponding author

Abstract

General Background: Blockchain-based smart contracts have revolutionized global transactions by enabling automatic, transparent, and decentralized execution of agreements. Specific Background: Despite their efficiency, these digital instruments challenge traditional private international law, particularly regarding jurisdiction, applicable law, and enforceability in cross-border contexts. Knowledge Gap: Existing legal systems, especially in the Middle East, lack comprehensive frameworks to address decentralized contracting and blockchain-based evidence. Aims: This study critically examines the intersection between smart contracts and conflict of laws in digital environments, focusing on Iraq's legal framework and regional comparison with the EU and the US. Results: The analysis reveals that while the EU has developed coherent regulatory models such as MiCA and the Data Act, and several US states have recognized smart contracts' validity, Iraq's Civil Code of 1951 remains inadequate to regulate automated digital agreements. Novelty: The paper proposes a unified legal model integrating UNCITRAL's 2024 Model Law on Automated Contracting, regional cooperation through the Arab League and GCC, and legislative reforms in Iraq to recognize blockchain evidence. Implications: Implementing such a framework would harmonize technological progress with legal certainty, enhance cross-border trust, and position Iraq and the Middle East within the global digital economy.

Highlight :

- Analyzes the intersection of smart contracts and conflict of laws in digital space.
- Examines Iraq's outdated legal framework amid rapid technological change.
- Suggests adopting international models and regional cooperation for legal reform.

Keywords : Smart Contracts, Blockchain, Conflict of Laws, Private International Law, Jurisdiction, Iraq.

Published date: 2025-10-10 00:00:00

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Introduction

Digital technologies and blockchain-based apps are growing quickly, and they have completely changed how transactions are started, carried out, enforced across borders. One of the most important new ideas in digital commerce is smart contracts, which are self-executing agreements that are stored on blockchain systems . By automating commitments and getting rid of many traditional middlemen, they promise to make things more efficient, open, and cheaper [1][1] . But because they are decentralized and don't have borders they create problems that have never been seen before for traditional private international law.

Conflict of laws is one of the main legal problems that come up with smart contracts. traditional cross-border contracts, private international law provides guidelines for ascertaining the jurisdiction of courts, the applicable legal system, and the resolution of commercial disputes . Smart contracts make these roles less obvious because there may not be any clear controlling law terms, performance is typically automatic once the contract is installed, the network of parties may cross numerous jurisdictions without a physical connection [2][2] . These characteristics threaten to compromise the efficacy of established conflict-of-law principles and provoke urgent inquiries regarding jurisdiction, the relevant law, and the international recognition and enforcement of judgments [3].

The decentralized and frequently pseudonymous or anonymous characteristics of blockchain transactions confound concepts of responsibility and enforcement . When parties are in different states and the terms of the contract are carried out automatically by code typical remedies like rescission, judicial discretion, or intervention may not work or may not be possible at all. This creates legal uncertainty which can make people less likely to trust online shopping and put them at risk of fraud, abuse, or legal gaps [2] .

These problems show that we need to quickly rethink how we use private international law in light of these changes in technology. International organizations like UNCITRAL have started to look into the legal effects of automation smart contracts, other digital tools. For instance, UNCITRAL's Model Law on Automated Contracting (2024) seeks to furnish lawmakers with foundational regulations to facilitate automated contracting, encompassing smart contracts, and to mitigate legal ambiguity [4] . But even with these efforts, there is still a long way to go before everyone agrees, and many places still don't have clear or consistent standards for things like choice of law, jurisdiction, recognition, or enforcement [5].

The problems are significantly worse in the Middle East, like Iraq. Most Arab legal systems, which come from civil law traditions and are founded on Islamic law, don't currently have clear rules about blockchain-based smart contracts. The Civil Code of Iraq (1951) lays out general rules for contracts, but it assumes that there are people involved, that the agreements are in writing, and that there are clear links to the jurisdiction. Smart contracts, on the other hand, depend on automated execution, transactions that can happen anywhere in the world, and don't always have clear controlling law terms. This means that they don't fit into the present Iraqi contract law [6]. If there are no modifications to the law, it could lead to legal ambiguity, which would make people less likely to invest and make it harder to trade across borders.

In Iraq and nearby countries, courts still heavily depend on traditional evidence such written contracts, notarized agreements, and witness testimony when deciding who is right in a business dispute. Blockchain ledgers' unchangeable nature and cryptographic verification are not yet entirely accepted as valid legal evidence. This lack of evidence makes it even harder to know if smart contracts will be enforced in domestic courts [7]. Additionally, there is a lack of regional harmonization among Middle Eastern governments in managing digital transactions, which exacerbates conflict-of-law difficulties when parties engage across Iraq, the Gulf area, and international jurisdictions.

This study tackles these issues by looking at how smart contracts and conflict of laws interact in the digital world. It examines the potential adaptation or reconfiguration of conventional jurisdictional principles and relevant law to address the decentralized and automated characteristics of smart contracts. The study aims to underscore both global and regional reforms by addressing the unique challenges encountered in Iraq and the Middle East, suggesting avenues for harmonization, and enriching the overarching discourse on the formulation of cohesive legal frameworks that reconcile technological advancement with legal certainty and the safeguarding of rights.

Theoretical Framework

Traditional private international law is mostly about figuring out who has jurisdiction, what law to use, and how to recognize and enforce judgments [8]. Party autonomy is still very important, as it lets parties choose the law and forum that will regulate their contracts [9]. However, smart contracts usually don't have clear controlling law terms, and they can run on their own, which makes party autonomy less useful in practice [10]. In these situations, courts go back to using things like where the parties live, where the contract was made, or where the contract was signed to make their decisions. However, these territorial criteria are challenging to implement in decentralized blockchain ecosystems where contractual execution transpires across multiple nodes [11].

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

To deal with the problems of regulating decentralized digital transactions, new theoretical ideas have been put up, like lex digitalis or lex cryptographia [12] . These theories propose that blockchain networks and smart contracts establish their own normative order, regulated by technical principles encoded in software rather than by statutory law [13] . Advocates contend that self-regulation provides stability and efficiency, whilst detractors warn that it compromises legal certainty, accountability, and consumer protection [14] . This tension underscores the overarching discourse between legal centralism, which prioritizes state sovereignty, and legal pluralism acknowledges various intersecting normative frameworks [15] .

The 1951 Civil Code in Iraq is based on civil law traditions that were inspired by French law and Islamic jurisprudence. It stresses the need of written form, consent, and clear jurisdictional ties [9] . These concepts assume that people may act on their own and that agreements based on territory. But smart contracts run autonomously through code and usually don't have any territorial connections. Theoretically, this establishes a disparity between Iraq's current legal frameworks and the realities of digital transactions. In contract disputes, Middle Eastern courts, especially those in Iraq, usually want notarized documents or written proof [16] . Blockchain records are not yet officially recognized as valid evidence in most places, even though they can't be changed and can be verified by cryptography [17].

This paper employs an integrative framework that synthesizes traditional conflict-of-laws concepts with perspectives from new digital law theories to tackle these difficulties. It contends that although lex digitalis offers significant insights into the autonomy of blockchain networks, state law is indispensable for guaranteeing enforceability, equity, and the safeguarding of rights. In Iraq and the broader Middle East, the theoretical approach must strike a balance between modernity and the preservation of established legal traditions, necessitating a selective adaptation of international frameworks, such as the UNCITRAL Model Law on Automated Contracting (2024) [18] .This comprehensive viewpoint will direct the examination of jurisdiction, relevant legislation, and enforcement difficulties in smart contracts, focusing specifically on the Iraqi legal context.

Smart Contracts in Practice

Smart contracts are digital agreements that are written in computer code and run on blockchain systems like Ethereum. The code automatically carries out the agreed-upon obligations once certain pre-defined circumstances are met, without any help from people [1]. A distributed ledger records each transaction, which makes it unchangeable, clear, and easy to follow [19]. The blockchain acts as a decentralized database, so no one person or group is in charge of the contract. Instead, all nodes that are part of the blockchain execute it at the same time [3]. This technological architecture makes things more efficient, but it also makes things less flexible because once the phrases are coded, they can't be changed easily.

Smart contracts are useful because they lower transaction costs, speed things up, and cut down on the need for middlemen [1]. In supply chain management, for instance, payment can be immediately released whenever blockchain records show that delivery has been confirmed. Smart contracts make it possible for cross-border payments to be settled quickly and safely in the financial services sector [5]. They also build trust because everyone can check that the blockchain is working on their own. From a legal point of view, smart contracts may make it harder for people to commit fraud or break a contract because performance is automated and recorded in a way that cannot be changed [8].

Smart contracts have some benefits, but they also come with a lot of risks when used in real life. Unlike traditional contracts [3], code is so strict that people can't use their judgment to deal with unexpected situations or unclear terms. Coding mistakes or security holes might lead to unexpected results, and the people who are impacted have few options for fixing them [8]. There are also concerns about how to understand the code: while the code controls execution, natural language is still needed to indicate intent, and differences between code and text can lead to disagreements [9]. The fact that blockchain transactions can't be undone makes it harder for the law to enforce remedies like rescission, restitution, or changing the terms [10].

In Iraq, the use of smart contracts is still mostly theoretical because of technological and legislative issues that make it hard to utilize them in real life. The 1951 Civil Code assumes that people are involved, there is written evidence, and the courts are in charge. This makes it hard to fit automated blockchain contracts into the current legal system [20]. Iraqi courts have not yet accepted blockchain records as definitive legal proof, which makes them harder to enforce [12]. In the larger Middle East, Gulf countries like the UAE and Saudi Arabia have tried out more new ideas, like fintech sandboxes and pilot programs for government services that use blockchain [21]. However, even in these places, problems with conflicts of law are still not resolved, especially when smart contracts involve things that cross borders.

The current situation shows a paradox: smart contracts are very efficient and automated, but they also show big legal holes in enforceability, jurisdiction, and conflict-of-law recognition. Without defined legal frameworks, their adoption may be confined to technical experimentation rather than becoming a standard commercial norm. This shows that smart contracts can't reach their full potential in practice without harmonized regulation, adapting worldwide models to fit different regions, and legislative changes in nations like Iraq.

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Indonesian Journal of Law and Economics Review
Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Conflict of Laws in the Digital Space

Smart contracts undermine the principles of private international law, especially concerning jurisdiction, relevant law, recognition and enforcement, and public policy implications. Smart contracts work in a decentralized space that frequently doesn't have strong legal anchors. This is different from traditional contracts, which depend on clear geographical and personal relationships.

In private international law, jurisdiction is usually determined by connecting elements such the parties' home, the place where the contract was made, or the place where the contract was carried out [22]. These restrictions are harder to follow because smart contracts are carried out on decentralized blockchain nodes that are spread out all over the world [2]. It may be hard for courts to figure out where a contract was fulfilled or even who the parties to the contract are. For instance, in a cross-border transaction conducted solely on Ethereum, should jurisdiction be determined by the server location, the code developer, or the economic impact zone? Academics say that this makes it hard to figure out where to file a lawsuit, which makes it easier for people to choose where to file a lawsuit or be unsure about the law [5].

In Iraq, the Civil Procedure Code gives jurisdiction based on where the defendant lives or where the contract was signed [23]. Nonetheless, blockchain transactions sometimes entail pseudonymous participants and execution across different countries concurrently. This means that Iraqi courts can't handle smart contract conflicts very well, which shows that they need to change their rules.

The notion of party autonomy permits contracting parties to select the applicable law in international agreements [3]. However, smart contracts frequently don't have clear choice-of-law clauses since their terms are written in code instead of plain English [6]. Even when a choice of law is given in related documents, courts may have trouble figuring out how to make programmed performance fit with legal duties.

In practice, when there is no choice of law, courts look for objective criteria that link the two parties, including where the work was done. In blockchain environments, however, performance is not linked to any physical location [24]. This has sparked scholarly discussions regarding the necessity of a novel legal framework, such as lex digitalis, to regulate blockchain transactions [8]. Critics warn that implementing an autonomous legal framework might erode sovereignty and lead to fragmentation in international trade [19]. In Iraq and other Middle Eastern countries, where laws focus on personal and territorial ties, the absence of clear legal advice means that smart contracts are not now covered by applicable legislation [13].

Another problem is recognizing and enforcing decisions. A court can make a decision about a smart contract, but enforcing that decision is hard because blockchain transactions can't be changed or undone [25]. Smart contracts execute automatically, making it hard to intervene after a conflict. In contrast, traditional contracts include remedies including rescission, damages, and injunctions.

From a comparative standpoint, European and American courts have initiated the examination of frameworks for acknowledging blockchain evidence and enforcing coded agreements [12]. In Iraq and much of the Middle East, though, written records and notarized contracts are still very important to courts. It is still not clear if blockchain-based records may be used as evidence in court, which makes it harder to enforce smart contracts. This disparity makes it less likely that people from Iraq and other countries will use smart contracts in cross-border transactions.

Smart contracts also pose significant public policy issues, encompassing consumer protection, fraud deterrence, data privacy, and illicit activities such as money laundering [14]. Smart contracts are appealing for illegal use since they are automated and anonymous. This can cause problems with both national and international rules. In Iraq, where the rules for fintech and digital trade aren't very good now, people are especially worried about the exploitation of blockchain systems without sufficient control [15]. Gulf states like the UAE have made progress toward compliance frameworks for blockchain at the regional level, but the Middle East still has to work on harmonization [16].

The unresolved concerns of jurisdiction, applicable law, enforcement, and public policy illustrate that current conflict-of-laws frameworks are insufficient for regulating smart contracts. Without coordinated reform, people who sign smart contracts may not know what the law is or how it will be enforced in different places . The problem for Iraq and the Middle East is not to follow international best practices, but also to make them fit with their own legal systems, which are based on civil law and Islamic law .

Comparative Legal Approaches

The rules for smart contracts are very different in different places. The European Union and the United States, both of which are sophisticated economies, have made progress in incorporating smart contracts into their legal systems. However, Middle Eastern countries, such as Iraq, are still in the early phases of developing regulations . This comparative analysis shows how different legal systems are and points out the holes that need to be filled for

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

harmonization.

The European Union have been careful but forward-thinking when it comes to regulating smart contracts. The markets in crypto-assets regulation which was passed in 2023, sets up a unified system for digital assets and the services that go along with them [26] . The markets in crypto-assets regulation doesn't explicitly make laws for smart contracts, but it does set rules for digital platforms and blockchain applications that effect them. The Data Act (2023) also has particular rules about smart contracts. For example, they must have ways to safely end and work with other contracts [2] . The EU's way of doing things shows that they care about protecting consumers, being open, and not favoring one technology over another. But even with these improvements, member states still have the power to interpret and apply contract law to blockchain transactions, which causes fragmentation [15] .

In the US, most of the rules for smart contracts have come from the states. Arizona, Nevada, and Tennessee are among of the states that have passed laws that specifically say that smart contracts and blockchain-based records can be enforced [4]. The Arizona Revised Statutes (2017) state, for instance, that smart contracts are legally legitimate and enforceable under current contract law [5]. The uniform law commission has also put out the uniform electronic transactions act and the uniform regulation of virtual-currency businesses act. Both of these laws indirectly support the legal recognition of smart contracts [27]. Even though these attempts have been made, there is still no complete federal framework . This means that there are a lot of different state-level rules that could make it harder for people to recognize each other across borders [7] .

There are a lot of different ways to do things in the Middle East. The United Arab Emirates has been the most engaged, creating a FinTech regulatory sandbox and adding blockchain technology to government services like the Dubai Blockchain Strategy [8] . Saudi Arabia has also tried using blockchain for financial transactions, but it hasn't yet made any laws about smart contracts [9].

On the other hand, Iraq is still in the early stages of developing its regulations . The Iraqi Civil Code of 1951 still controls contracts. It stresses the importance of written records, consent, and territorial jurisdiction [10] . These rules don't allow for the decentralized, automated execution of smart contracts. Iraqi courts have not yet officially accepted blockchain records as valid legal evidence [17] . This lack of recognition makes it hard for Iraqi parties to do business across borders. Legal scholars in Iraq contend that modifications are essential to modernize contract law and ensure its alignment with evolving international frameworks [22] .

The comparative analysis shows that smart contracts are starting to be used in western legal systems, but they are not yet widely used in the Middle East, especially in Iraq . The EU focuses on protecting consumers and making rules that are the same across the board. The US focuses on innovation and making rules that are enforceable at the state level. The Middle East is making progress, but it's not always steady. For Iraq, adopting targeted reforms based on the EU's harmonized framework, the US's acknowledgment of enforceability could be a good method to modernize the law.

Unified Legal Framework

The difficulties that smart contracts provide to private international law underscore the pressing necessity for coordinated strategies that reconcile technical advancement with legal clarity . Smart contracts need both domestic changes and international cooperation to make sure that outcomes are predictable and can be enforced because they are borderless and decentralized. This part talks about some of the most important techniques to achieve this kind of harmony.

International organizations like the United Nations Commission on International Trade Law (UNCITRAL) have been the first to deal with digital transactions. The Model Law on Automated Contracting (2024) gives lawmakers a way to make sure that automated agreements, like smart contracts, are legally acceptable, that the parties have freedom of choice, and that coded performance is recognized [28]. For Iraq and other Middle Eastern countries, using or following these kinds of international rules would make cross-border transactions less risky and bring local law into the global digital economy.

A second option to do this is through regional harmonization with groups like the Arab League or the Gulf Cooperation Council (GCC). Some Gulf countries, like the UAE and Saudi Arabia, have tried out blockchain projects, although the laws in the region are still not very clear [12]. In the Middle East, trust in smart contracts would grow if there were a consistent framework for jurisdiction, applicable law, and the use of blockchain proof. Iraq, as a new actor, could benefit from working together with other countries in the region to create model laws that respect the country's own legal traditions.

blockchain records to be enforceable, they must be legally recognized as valid evidence. In several European countries, blockchain ledgers are already accepted as valid evidence in civil lawsuits [9]. In Iraq, courts still use notarized papers and regular written contracts. Changing the laws of evidence to recognize blockchain entries as reliable and verifiable could make dispute resolution more modern and boost trust in smart contracts. This change would not weaken the norms for evidence that have been there for a long time instead, it would make them better by increasing technical reliability .

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

Harmonization should acknowledge that smart contracts operate inside a dual framework: the technical governance of code and the legal governance of nations . A hybrid model would make sure that smart contracts run on their own, but that people can still go to court or arbitration if there is a mistake, fraud, or criminal activity [4] . This means that Iraq needs to add to the civil code rules that make coded agreements lawful and also make sure that these rules are in line with Islamic and civil law traditions .

harmonization needs to establish capability at home. Iraq needs to change its contract law to take into account digital transactions, set up regulatory sandboxes for fintech, and teach judges, attorneys, and lawmakers how to use blockchain [23]. Working with international groups and partners in the region could speed up this process. If Iraq modernized its legal system, it would not only solve problems with conflicts of law, but it would also become a trusted place for digital trade in the Middle East.

Conclusion and Recommendations

Smart contracts are a big step forward for global trade because they use blockchain technology to make things more efficient, clear, and automated. But their decentralized and transnational character shows how limited existing private international law frameworks are. There are still problems with jurisdiction, applicable legislation, recognition and enforcement, and public policy. This makes it unclear for both people and businesses who do business across borders. A comparative research shows that the European Union has made frameworks like the Data Act and MiCA more consistent, while the United States has recognized smart contracts at the state level. However, the Middle East, especially Iraq, is still behind in giving clear legal recognition [2,3]. Iraqi contract law, based on the Civil Code of 1951, is not ready to handle transactions that are coded and decentralized. Without changes, Iraq could fall much further behind in joining the global digital economy.

Suggestions

1)Use international standards in Iraq and other Middle Eastern countries should make sure that their own laws are in line with international agreements, such the Model Law on Automated Contracting (2024) from UNCITRAL. This would make smart contracts more trustworthy across borders and give people more legal certainty.

2)Making everything the same in the Arab League and the Gulf Cooperation Council should work together to set up a unified framework that covers jurisdiction, choice of law, and the use of blockchain evidence. Regional alignment would help the Middle East's digital economy thrive by making the law less confusing and more consistent [5].

3)Acknowledgment of blockchain evidence in the United States should be changed to allow blockchain recordings to be used as legal proof of transactions. This change would make it possible for anything to be both technically unchangeable and legally enforceable.

4)Governance that is a mix of both dual regulatory paradigm should be implemented, wherein smart contracts are regulated by code for technical execution while also being protected by legal measures that guarantee fairness, consumer protection, and remedies for errors or fraud.

5)Building capacity in Iraq requires spending money on training judges, teaching people about the law, and building up its regulatory system. Iraq will be ready to manage smart contracts well if it sets up fintech sandboxes, updates contract legislation, and works with other countries on legal issues across borders.

6)Public policy protections governments should take steps to stop people from using smart contracts for illegal activities like fraud, money laundering, and funding terrorism, while also finding a balance between regulation and innovation.

References

1. I. H. Ahmed, "The Role of the Teacher and the Community in Digital Education," NTU Journal for Administrative and Human Sciences, vol. –, no. –, pp. –, 2022.
2. H. E. Khalil, "The Role of Digital Transformation in Improving Characteristics of the Quality of Accounting Information: An Analytical Study of the Opinions of Accounting Staff at the Northern Technical University in Mosul," NTU Journal for Administrative and Human Sciences (JAHS), vol. –, no. –, pp. –, 2023.
3. N. Szabo, "Smart Contracts," 1996. Available: https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html
4. V. Buterin, "A Next-Generation Smart Contract and Decentralized Application Platform," Ethereum White Paper, 2014. Available: https://ethereum.org/en/whitepaper/
5. M. Raskin, "The Law and Legality of Smart Contracts," Georgetown Law Technology Review, vol. 1, no. 2, pp. 305–341, 2017.

Vol 20 No 4 (2025): November
DOI: https://doi.org/10.21070/ijler.v20i4.1328
Article type: (Private Law)

6. K. Werbach and N. Cornell, "Contracts Ex Machina," Duke Law Journal, vol. 67, no. 2, pp. 313–382, 2017.
7. A. Mills, Party Autonomy in Private International Law. Cambridge: Cambridge University Press, 2018.
8. T. C. Hartley, International Commercial Litigation: Text, Cases and Materials on Private International Law. Cambridge: Cambridge University Press, 2020.
9. J. G. Allen, "Wrapped and Stacked: 'Smart Contracts' and the Interaction of Natural and Formal Language," European Review of Contract Law, vol. 14, no. 4, pp. 307–343, 2018.
10. E. Mik, "Smart Contracts: Terminology, Technical Limitations and Real World Complexity," Law, Innovation and Technology, vol. 9, no. 2, pp. 269–300, 2017.
11. D. Tapscott and A. Tapscott, Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World. New York: Penguin, 2016.
12. F. Schär, "Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets," Federal Reserve Bank of St. Louis Review, vol. 103, no. 2, pp. 153–174, 2021. doi: 10.20955/r.103.153-174
13. N. Atzei, M. Bartoletti, and T. Cimoli, "A Survey of Attacks on Ethereum Smart Contracts (SoK)," in Principles of Security and Trust. Springer, 2017, pp. 164–186. doi: 10.1007/978-3-662-54455-6_8
14. A. Wright and P. De Filippi, "Decentralized Blockchain Technology and the Rise of Lex Cryptographia," SSRN Electronic Journal, 2015. doi: 10.2139/ssrn.2580664
15. C. Reyes, "Lex Cryptographia: How Blockchain Technology Is Shaping the Rules of Law," California Law Review, vol. 104, no. 3, pp. 667–712, 2019.
16. K. Werbach, The Blockchain and the New Architecture of Trust. Cambridge, MA: MIT Press, 2018.
17. R. Cotterrell, "Legal Pluralism, Legal Theory and Social Theory," in Legal Pluralism and Development. Cambridge: Cambridge University Press, 2012, pp. 21–42.
18. M. Ahmed and A. Hassan, "Enforcement of Smart Contracts in Cross-Jurisdictional Transactions," Journal of International Commercial Law, vol. 15, no. 3, pp. 221–242, 2023.
19. S. C. Symeonides, "Establishing Jurisdiction in the Context of Smart Legal Contracts: The English Law Commission's Advice to Government," Conflict of Laws.net, 2021. Available: https://conflictoflaws.net
20. European Commission, Markets in Crypto-Assets (MiCA) Regulation. Brussels: European Commission, 2023. Available: https://finance.ec.europa.eu/publications/regulation-markets-crypto-assets-mica_en
21. European Commission, Proposal for a Regulation on Harmonised Rules on Fair Access to and Use of Data (Data Act). Brussels: European Commission, 2023. Available: https://digital-strategy.ec.europa.eu/en/library/data-act
22. G. Sartor, "Automated Contracting in Europe: Developments and Future Directions," MediaLaws, 2024. Available: https://www.medialaws.eu
23. State of Arizona, Arizona Revised Statutes §44-7061 (Blockchain Technology and Smart Contracts). Phoenix, AZ: State of Arizona, 2017. Available: https://www.azleg.gov/ars/44/07061.htm
24. Uniform Law Commission, Uniform Electronic Transactions Act (UETA). Chicago, IL: ULC, 1999. Available: https://www.uniformlaws.org/committees/community-home?CommunityKey=2c04b76c-2b7d-4399-977e-d5876ba7e034
25. UAE Central Bank, FinTech Regulatory Sandbox Framework. Abu Dhabi: UAECB, 2021. Available: https://www.centralbank.ae
26. Saudi Arabian Monetary Authority (SAMA), Blockchain Initiatives in Financial Transactions. Riyadh: SAMA, 2022. Available: https://www.sama.gov.sa
27. United Nations Commission on International Trade Law (UNCITRAL), Model Law on Automated Contracting. New York: United Nations, 2024. Available: https://uncitral.un.org
28. H. Al-Ani and M. Al-Zubaidi, "Digital Transformation and Contract Law in Iraq: Legal Gaps and Reform Needs," Baghdad Journal of Legal Studies, vol. 14, no. 2, pp. 55–70, 2022.
29. L. Al-Hakim, "Smart Contracts in Iraqi Law: Prospects and Challenges," Journal of Middle Eastern Legal Studies, vol. 9, no. 1, pp. 77–95, 2023.
30. A. Al-Mutairi, "Blockchain Evidence in Middle Eastern Courts: Challenges and Opportunities," Arab Law Quarterly, vol. 37, no. 1, pp. 89–110, 2023.

ISSN 2598 9928 (online), https://ijler.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo