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Review Article

LEGAL CHALLENGES RELATED TO CONTRACTUAL NEGOTIATIONS VIA AI TECHNOLOGIES: COMPARATIVE ANALYTICAL STUDY

Bashar Talal Momani*, Nasr Farid Hassan, Hosni Mahmoud AbdelDaiem AbdelSamad and Mohamed Elsayed Eldessouky

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ABSTRACT

Background: *Contractual negotiations conducted by artificial intelligence (AI) systems raise profound legal challenges, most notably the question of allocating civil liability for damages caused by their errors. This study, employing a comparative analytical methodology, reveals a significant regulatory gap in Arab jurisdictions—particularly Egypt and the United Arab Emirates—where legislation lacks explicit provisions governing such liability. In contrast, recent European Union initiatives, including the risk-based approach of the AI Act and the emerging framework of the AI Liability Directive, place primary emphasis on the accountability of developers and operators.*

Against this backdrop, the paper advocates for the development of a specialised Arab legal framework that draws inspiration from comparative models while preserving local specificities. Such a framework should include: a precise legal definition of

intelligent systems, concrete evidentiary mechanisms for fault attribution and liability distribution, the establishment of a dedicated supervisory authority, and the strengthening of insurance mechanisms as complementary safeguards.

Methods: *This study employs a comparative analytical method to examine civil liability for AI errors in contractual negotiations, focusing on tort and contractual theories under Egyptian and Emirati law, and contrasting them with recent EU developments—particularly the AI Liability Directive and the Data Act, which provide clearer guidance than the AI Act.*

Results and conclusions: *The comparative analysis yields three main results. First, there is a clear regulatory gap in Arab jurisdictions, which continue to rely on general civil law provisions without specialised rules for AI. Second, doctrinal differences between strict liability in the EU and the broader remedial approach in Arab systems complicate any direct transposition of European models. Third, evidentiary challenges remain central in both systems, as establishing fault and causation in AI-related harm is inherently complex.*

1 INTRODUCTION

Artificial intelligence (AI) is a real and effective technology whose applications, in some areas, exceed human capabilities. It is capable of reasoning, perception, problem-solving, and even autonomous learning. AI systems can integrate and utilise various advanced tools and devices to perform complex tasks efficiently.

However, the development of self-learning AI systems remains a major challenge. Many questions arise regarding their training, ethical use, and responsibility. At present, few mechanisms exist to adapt AI to specific cultural or linguistic contexts, particularly in environments where AI systems must recognise and respond to unique local characteristics.

To ensure the safe and ethical use of AI, it is essential to develop robust systems that promote transparency, accountability, and fairness. Such systems would facilitate automatic control while minimising potential risks.

This issue is particularly important in light of recent technological advancements, as AI increasingly influences contractual frameworks and civil liabilities, especially in regions where Arabic is the dominant language, such as Egypt and the United Arab Emirates. There is an urgent need for individuals to understand the basic concepts of AI and related technologies, especially in this rapidly evolving digital environment.

A review of Egyptian and Emirati legislation reveals significant shortcomings in addressing the legal challenges posed by AI-based negotiation mechanisms. Neither legal system includes explicit provisions recognising the legal status of AI systems or robots, nor do they provide clear definitions of the rights and obligations applicable to such artificial entities. Moreover, both jurisdictions lack a dedicated regulatory or supervisory body to oversee the operation of AI agents or to ensure accountability for civil liability arising from their role

in contractual negotiations. This stands in contrast to the more advanced European approach, which has moved toward establishing independent oversight bodies and imposing greater transparency obligations. In this regard, it is worth noting that the European Law Institute has issued a set of guiding principles on automated decision-making within the European Union.[1]

Within the European legal framework, it is essential to distinguish among three principal instruments. The EU Artificial Intelligence Act (AI Act), enacted as Regulation (EU) 2024/1689,[2] establishes a comprehensive risk-based legal regime for AI systems. It classifies such systems into four levels of risk—unacceptable, high, limited, and minimal—and imposes corresponding obligations on providers and deployers, including conformity assessments and transparency requirements.

The EU Data Act (Regulation (EU) 2023/2854)[3] focuses on enabling fair access to and use of data within the European data economy.[4] It forms a critical part of the legal foundation for smart contracts, especially in data-sharing agreements. These smart contracts are subject to essential legal requirements, such as auditability, access control, and conformity certification.

The AI Liability Directive[5] (AILD)—originally proposed to harmonise non-contractual civil liability rules for AI across the Union—seeks to simplify the claimant's burden of proof by facilitating access to evidence and introducing rebuttable presumptions of causality.[6] However, its legislative future remains uncertain.

1 Teresa Rodriguez de las Heras Ballell, *Guiding Principles for Automated Decision-Making in the EU* (ELI Innovation Paper, European Law Institute 2022).

2 Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 Laying Down Harmonised Rules On Artificial Intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) [2024] OJ L 1689/1 <http://data.europa.eu/eli/reg/2024/1689/oj> accessed 20 April 2025. Detailed risk-based AI classification and obligations framework.

3 Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on Harmonised Rules on Fair Access to and Use of Data and amending Regulation (EU) 2017/2394 and Directive (EU) 2020/1828 (Data Act) [2023] OJ L 2854/1 <http://data.europa.eu/eli/reg/2023/2854/oj> accessed 20 April 2025. Aims to harmonize fair access to and use of data, including smart contract rules.

4 Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7(2) International Data Privacy Law 76. doi:10.1093/idpl/ipx005.

5 Proposal for a Directive of the European Parliament and of the Council on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence (AI Liability Directive) COM/2022/496 final (28 September 2022) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52022PC0496> accessed 20 April 2025. Explores the EU's evolving framework for AI-related harm, including proposals for the AILD.

6 Andrea Bertolin, *Artificial Intelligence and Civil Liability: A European Perspective* (Study, European Parliament's Policy Department for Justice 2025) <https://www.europarl.europa.eu/thinktank/en/document/IUST_STU(2025)776426> accessed 25 July 2025.

The main research question guiding the study is: How can Arab regulatory frameworks bridge the gap in civil liability arising from AI-driven negotiations by leveraging the European model, while accounting for the region's legal specificities?

This study seeks to address the pressing legal challenges arising from the use of AI in contractual negotiations by formulating solutions consistent with prevailing legal traditions and legislative frameworks. Its objectives are fourfold: first, to emphasise the significance of the pre-contractual stage and underscore the legislator's duty to regulate it, particularly in determining the scope of civil liability associated with this phase; second, to examine the legal implications of AI in negotiation and the challenges it generates; third, to propose a balanced legal framework suitable for the responsible deployment of AI in contractual bargaining; and fourth, to explore the attribution of liability for harms caused by AI.

2 METHODOLOGY OF THE STUDY

This study adopts a comparative analytical approach, aiming to examine the legal framework governing civil liability for AI-related errors during the negotiation phase. The analysis focuses on the fundamental legal theories of tort and contractual liability as established in Arab civil laws, particularly those of Egypt and the UAE. This comparative approach is also employed to examine this situation in relation to recent legislative and judicial developments in the European Union, specifically the AI Liability Directive and the Data Act, which address these issues more directly than the AI Act.

3 AI CONCEPT AND RULE IN CONTRACTUAL NEGOTIATION

AI is a branch of computer science focused on developing systems that simulate human behaviour and decision-making with varying degrees of autonomy.[7] It operates through software or integrated devices such as robots and self-driving cars. AI processes structured, semi-structured, and unstructured data to analyse environments and solve complex problems. Its applications include digital assistants, facial recognition, and autonomous machines like drones. Due to their efficiency and adaptability, these technologies are increasingly utilised in medicine, economics, and defence.[8]

Contractual negotiation involves the exchange of proposals, opinions, studies, and legal consultations between parties aiming to reach a mutually beneficial agreement. It plays a crucial role in determining the terms and conditions of contracts, ensuring that the interests of all parties are balanced and that business transactions are successful. Negotiations

7 Arnaud Sée, 'La Régulation des Algorithmes: Un Nouveau Modèle de Globalisation?' (2019) 5 Revue Française de Droit Administratif 830.

8 Zholin Gao and Oizheng Qian, 'The Risk and Benefits of Applying Artificial, Intelligence in Business Discussions' (2022) 30 BCP Buusiness & Management 808. doi:10.54691/bcpbm.v30i.2569.

require individuals with specialised skills and knowledge and take place across various fields, including hospitals, offices, and legal consultancies.[9]

AI can enhance contractual negotiations through data analysis, enabling parties to assess market conditions, understand the needs of each party, and identify strengths and weaknesses. It can also evaluate risks, determine optimal negotiation paths, and propose creative solutions. By automating repetitive tasks, AI saves negotiators time, enabling them to focus on more important aspects of the process. However, some scholars contend that AI will not fully replace humans in negotiations, as human input is essential for understanding the other party's position.[10]

Several companies, including IBM, Salesforce, and Alibaba, utilise AI technologies (e.g., Watson, Einstein, and Alibaba DAMO) to assist in negotiations. While AI is increasingly seen as an inevitable force in legal and judicial matters, scholars emphasise that it presents challenges that must be addressed legislatively and technically. They caution that AI should remain under human control to mitigate risks and ensure its ethical integration into society.[11]

4 LEGAL CHALLENGES RELATED TO CONTRACTUAL NEGOTIATION THROUGH AI TECHNOLOGIES

The widespread adoption of artificial intelligence has generated significant legal challenges, particularly with respect to its inherent risks, as well as broader concerns in the domains of research and innovation. This tension largely stems from the accelerating pace of technological advancement, which often outstrips the ability of legal frameworks to adapt, thereby exacerbating these challenges. In this context, the present study focuses on civil liability for damages arising from errors committed by artificial intelligence systems during the contractual negotiation process.

4.1. Civil Liability for Damages Caused by Artificial Intelligence

The issue of civil liability arising from AI errors in negotiations is a recent and complex matter that requires careful consideration from both legal and technical perspectives.

In general, civil liability is defined as the obligation under which a person is liable for remedying the damage incurred by another person due to the acts performed by the

9 Michelle Vaccaro and others, 'Advancing AI Negotiations: New Theory and Evidence from a Large-Scale Autonomous Negotiations Competition' (*arXiv*, 7 July 2025) arXiv:2503.06416v2. doi:10.48550/arXiv.2503.06416.

10 Horst Eidenmüller, 'The Advent of the AI Negotiator: Negotiation Dynamics in the Age of Smart Algorithms' (2025) 20(1) Journal of Business & Technology Law 1.

11 Yousef Abuzir, 'Artificial Intelligence in Legal Practice: Applications, Challenges, and Future Prospects' (2025) 8(1) Journal of Business in the Digital Age 33. doi:10.46238/jobda.1629307.

former, their subordinates, or things for which the former is liable.[12] It can also be defined as "the person's obligation to compensate the damage he caused to another person because of violating an obligation represented in infringing the victim or third parties in whatsoever manner." [13]

In the context of AI-related damages, civil liability refers to the liability of AI for compensating the damage incurred by the victim or a third party as a result of the operation or decision-making of an AI system.[14]

With the growing use of AI in fields like healthcare, civil liability for AI-related errors has become increasingly important—for example, when a robot causes harm to a patient. In such cases, the responsible party must compensate for financial and moral damages, regardless of fault. This strict liability principle applies to institutions using AI, such as hospitals, and serves as a warning to manufacturers of potentially dangerous technologies.

Since the mid-2010s, the European Parliament has shown heightened interest in civil liability arising from AI applications, particularly those involving robots and autonomous vehicles. On 16 February 2017, the Parliament adopted a resolution on Civil Law Rules on Robotics, calling for the development of new legal frameworks that account for the difficulty of proving software errors and the challenges arising from system autonomy in decision-making.[15] This was followed by another resolution on 20 October 2020 (2020/2014(INL)), which recommended the establishment of a comprehensive civil liability system and a balanced compensation scheme capable of addressing damages resulting from the use of AI technologies, recognising the inadequacy of traditional rules based on proving fault and causality.[16]

Member States have responded to these recommendations in various ways. In 2021, Germany adopted a specific law on autonomous driving, requiring the presence of a "technical supervisor" (*technische Aufsicht*) in vehicles and mandated the installation of a "black box"-like device to record driving data for determining liability in the event of an accident. This law represents a practical national model for addressing the evidentiary

12 Ahmed Abu Al-Saud, *The Insurance Policy between Theory and Practice: A Comprehensive Analytical Study* (Dar Al-Fikr Al-Jami'i 2009) [in Arabic].

13 Muhammad Abd al-Zahir Hussein, *The Injured Party's Mistake and Its Impact on Liability* (Dar Al-Nahda Al-Arabiya 2007) [in Arabic].

14 Nikos Th Nikolinakos, *Adapting the EU Civil Liability Regime to the Digital Age: Artificial Intelligence, Robotics, and Other Emerging Technologies* (Law, Governance and Technology Series vol 68, Springer 2024) 377. doi:10.1007/978-3-031-67969-8_8.

15 European Parliament Resolution 2015/2103(INL) of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics [2018] OJ C 252/239 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2018_252_R_0026> accessed 20 April 2025.

16 European Parliament Resolution 2020/2014(INL) of 20 October 2020 with recommendations to the Commission on a Civil Liability Regime for Artificial Intelligence [2021] OJ C 404/107 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2021_404_R_0006> accessed 20 April 2025.

challenges in AI-related incidents, complementing European discussions on the need for a unified framework.[17]

In a broader context, the European Union adopted the Artificial Intelligence Act (AI Act) in July 2024, marking the first binding horizontal European legislation regulating AI technologies. This law is based on a risk-classification methodology, prohibiting systems with "unacceptable risk" and subjecting high-risk systems to stringent technical and procedural obligations, including risk management, mandatory human oversight, maintaining transparent operational records, and reporting malfunctions. The Act also provided for the establishment of national regulatory authorities to supervise compliance, while imposing limited transparency requirements for low-risk systems.[18]

Alongside these developments, the EU Data Act, enacted in 2023, represent a parallel regulatory step aimed at ensuring access to and defining usage rights for data generated by connected devices, thereby providing a supportive legal environment for AI development by facilitating industrial data sharing.

Regarding compensation and liability, the European Commission proposed the AI Liability Directive in 2022, aiming to alleviate the burden of proof for victims by introducing mechanisms such as legal presumptions of causality. However, this proposal faced broad political and legislative disagreements, leading to its withdrawal from the Commission's work programme in 2025, leaving a partial legislative gap in compensation for AI-related damages.[19]

These European developments reflect the European legislator's awareness of the complex nature of AI and the need for innovative legal tools that strike a balance between the requirements of technological innovation and the protection of fundamental rights and contractual interests. Despite such progress, Arab experiences remain more focused on formulating national strategies and general policy frameworks rather than building detailed legislative systems.

In Egypt, the government launched the *National Strategy for Artificial Intelligence* and enacted the Personal Data Protection Law in 2020; however, issues of civil liability for AI damages remain subject to traditional rules in the Civil Code and Consumer Protection Law.[20] In the

17 Johann Laux, Sandra Wachter and Brent Mittelstadt, 'Trustworthy Artificial Intelligence and the European Union AI Act: On the Conflation of Trustworthiness and Acceptability of Risk' (2023) 18(1) Regulation & Governance 3. doi:10.1111/rego.12512.

18 Nuno Sousa e Silva, 'The Artificial Intelligence Act: Critical Overview' (*arXiv*, 30 August 2024) arXiv:2409.00264. doi:10.48550/arXiv.2409.00264.

19 Timo Minssen and others, 'Governing AI in the European Union: Emerging Infrastructures and Regulatory Ecosystems in Health' in Barry Solaiman and I Glenn Cohen (edn), *Research Handbook on Health, AI and the Law* (Edward Elgar 2024) 311. doi:10.4337/9781802205657.ch18.

20 Maha Ramadan Muhammad Battikh, "Civil Liability for Damages Caused by Artificial Intelligence Systems: A Comparative Analytical Study' (2021) 9(5) Legal Journal (Faculty of Law, Cairo University, Khartoum Branch) 1513. doi:10.21608/jlaw.2021.190692 [in Arabic].

UAE, the UAE Strategy for Artificial Intelligence 2031 was launched, and Federal Law No. (45) of 2021 on the Protection of Personal Data was issued, while legislative policy relies on regulatory sandboxes to test systems before widespread deployment, without a specific law yet regulating civil liability for AI-related damages.[21]

An analytical review of the UAE and Egyptian legislative frameworks reveals several fundamental gaps that hinder their ability to address the legal challenges arising from contractual negotiations conducted through AI systems. Chief among these are the absence of explicit legal provisions recognising the legal status of AI systems or robots, and the lack of a precise statutory definition delineating their rights and obligations within contractual frameworks.[22]

Moreover, both jurisdictions lack a dedicated regulatory framework or specialised oversight body responsible for supervising the performance of AI agents or ensuring their compliance with civil liability rules during negotiations. This stands in contrast to the European experience, which has pioneered practical models for establishing independent supervisory entities and linking the use of AI to clear legal duties concerning transparency and accountability.

In light of these findings, the study recommends that UAE and Egyptian lawmakers undertake the following steps:

1. Adopt clear and specific legal definitions of intelligent systems and delineate their contractual use within the Civil Transactions Law.
2. Develop dedicated legal mechanisms to impose liability on AI developers and users for harm resulting from automated actions.
3. Establish specialised regulatory bodies—or dedicated units within existing authorities—to oversee smart contracts and assess the legal performance of the algorithms employed.

The study also recommends the gradual implementation of these mechanisms, drawing on recent European models, to ensure a safe transition toward an AI-driven contractual environment while minimising the regulatory gap.

21 Essam M El Gohary, Ghada El Shabrawy and Sahar Hassib, 'Assessment of the Artificial Intelligence Strategies Announced in the Arab Countries' (2023) 31(3) Egyptian Journal of Development and Planning 1. doi:10.21608/inp.2023.326507 [in Arabic].

22 Adel Salem AlLouzi, Karima KRIM and Mohammad Abdalhafid AlKhamaiseh, 'The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law' (2023) 5(4) Research Journal in Advanced Humanities 156. doi:10.58256/4w202n53.

4.2. Civil Types of Damages Resulting from AI Errors in Contract Negotiations

This review is supported by Chopard and Musy, who argue that AI systems are being increasingly used to aid in the diagnosis and treatment of diseases, thereby reducing the risk of medical errors. They note that such systems also influence the determination and allocation of compensation among doctors and producers of AI systems in cases where patients suffer harm.[23] Conversely, other scholars contend that determining liability in AI-related defects could be complex due to the involvement of multiple stakeholders. Responsibility becomes difficult to establish when defects arise from different sources, such as defective training data, algorithmic biases, or inappropriate system design.[24]

When AI is employed in contract negotiation or dispute resolution, its errors can result in significant financial or legal harm—such as costly decisions, broken agreements, project delays, or unexpected expenses. These mistakes may lead to contractual breaches or tort liability arising from the AI's actions.[25]

1. Operational Damages: Errors by AI systems during negotiations could result in delays of projects and business transactions, leading to additional costs and lost opportunities. This results in weakening the company's competitive position and negatively affecting its reputation.[26]

2. Legal Damages: In addition to operational damages, AI errors in negotiation can result in serious legal problems, including contractual violations or torts (harmful acts), which may lead to expensive judicial disputes.

3. Financial Damages: When AI errors occur in negotiating contracts, this can result in substantial financial losses to the negotiating parties, which could include concluding unprofitable or unfavourable agreements, missing opportunities for profit and business growth.

23 Bertrand Chopard and Olivier Musy, 'Market For Artificial Intelligence in Health Care and Compensation for Medical Errors' (2023) 75 International Review of Law and Economics 106153. doi:10.1016/j.irle.2023.106153.

24 Miriam C Buiten, 'Product Liability for Defective AI' (2024) 57(1) European Journal of Law and Economics 239. doi:10.1007/s10657-024-09794-z.

25 Abdelrazek Wahba Sayedahmed, 'Civil Liability for Artificial Intelligence Damages: An Analytical Study' (2020) 43 Generation of In-depth Legal Research Journal 11 [in Arabic].

26 Ahmed M Al-Hawamdeh and Tariq K Alhasan, 'Smart Robots and Civil Liability in Jordan: A Quest for Legal Synthesis in the Age of Automation' (2024) 16(2) Jordanian Journal of Law and Political Science 52. doi:10.35682/jjlps.v16i2.743.

Civil liability for AI errors in negotiations is established on a group of main legal pillars, foremost among them being the principle of tort (harmful act), which requires compensation for damage resulting from a harmful act or negligence by the entity responsible for the AI.[27]

This liability is grounded in the principles of contractual liability, under which the entity in charge of AI is obliged to exert due diligence to prevent such damages. In the event of violating such an obligation, it shall compensate the victims for the losses they incur or the damages resulting from the AI errors during negotiations.[28]

4.3. Conditions for Civil Liability for Errors Committed by Artificial Intelligence during Negotiations

Civil liability for errors committed by AI during negotiations arises upon the fulfilment of the following condition:[29]

1. Incurrence of Actual Damage: Civil liability cannot be established unless the AI error results in actual damage to the negotiating parties, whether financial or moral. The damage must be direct and causally linked to the AI's error.[30]
2. Commission of an AI Error: Civil liability arises when the AI system commits an error while performing its negotiation functions. The error must stem from deficiencies in programming or AI performance, rather than from events constituting force majeure or other factors beyond the control of the entity in charge.[31]
3. Causation Relationship: There must be a causation relationship between the AI error and the damage incurred by the negotiating parties. In other words, the damage

27 Bashar Talal Momani and others, 'Securing Privacy: Safeguarding against Cyber Threats in the UAE and Morocco' (2024) 5(3) Global Privacy Law Review 126. doi:10.54648/gplr2024018; Mohammed Al Morsi Zahra, *Non-administrative sources of obligation in the Civil Transactions Law of the United Arab Emirates: Harmful Acts and Beneficial Acts* (UAE University Press 2003) [in Arabic]; Nasser Mohammed Abdullah Sultan, *Liability for the Act of Things Requiring Special Care and Mechanical Machinery in Light of the UAE Civil Code Compared to the Egyptian Civil Code* (Al-Halabi Legal Publications 2005) [in Arabic]; Osama Ahmed Badr, *The Concept of Guardianship (Hirasah) in Civil Liability: A Comparative Study* (Dar Al-Nahda Al-Arabiya 2004) [in Arabic].

28 Ibrahim Al-Desouki Abullail, 'Smart Contracts and Artificial Intelligence and their Role in the Automation of Contracts and Legal Acts: Study of the Role of Scientific Progress in the Development of Contract Theory' (2020) 44(4/1) Journal of Law. doi:10.34120/jol.v44i4.2545 [in Arabic].

29 Abdel Razzaq Ahmed Al-Sanhouri, *The Intermediary in Explaining the New Civil Law: The Theory of Obligation in General*, pt 3 (Manshaet Al-Ma'arif 2004) [in Arabic].

30 Martin Ebers, 'Liability for Artificial Intelligence and EU Consumer Law' (2021) 12(2) JIPITEC 204.

31 Reza Farajpour, 'The Role of Civil Liability in Artificial Intelligence Laws from the Perspective of Major Global Legal Systems' (2025) 5(2) Journal of Law and Political Studies 182. doi:10.48309/jlps.2025.518711.1353.

must be the direct and inevitable outcome of the AI error in negotiation and may not be the result of any other factors.[32]

In defining the party civilly liable for compensating damages resulting from the use of AI in contractual negotiations, liability may fall upon one or more of the following:[33]

1. Liability of the Robot Manufacturer and Programmer: The manufacturer, developer, or programmer of an AI system may incur civil liability where damage arises from defects in design, errors in programming, or negligence in the manufacturing or development process. In such cases, liability is generally governed by product liability laws, which impose a legal obligation on manufacturers to ensure that their products are safe, effective, and free from defects.[34]

2. Liability for Use (End-User Responsibility): Where harm results from improper use of the AI system—such as failure to adhere to usage guidelines or intentional misuse—the end user may be held liable. In such instances, liability is determined in accordance with the general principles governing fault-based liability for misuse or negligence.[35]

3. Contracts and Agreements: Contracts governing the use of AI usually include provisions determining the liability for the damages resulting from the AI errors. Such provisions may release the manufacturer from liability in some cases or limit the amount of compensation. Therefore, such contracts must be carefully reviewed to determine the liable party in case of error that results in damage to third parties or to determine the manner of dividing the liability among the different parties.[36]

4. Training and Maintenance: Liability may be borne by the user if the error is the result of the lack of training or lack of periodical maintenance of the AI.

5. Determining the Error: In case of error, it is necessary to determine whether the cause lies in programming, a technical error, or user misuse. This requires a technical investigation, involving experts in technology and software.

32 Gabriele Buchholtz, 'Artificial Intelligence and Legal Tech: Challenges to the Rule of Law' in Thomas Wischmeyer and Timo Rademacher (eds), *Regulating Artificial Intelligence* (Springer 2020) 175. doi:10.1007/978-3-030-32361-5_8.

33 Khaled Abdel Fattah Saqr, *Rules and Provisions of Criminal and Civil Liability for Architects, Doctors, Contractors, Property Owners, and Custodians* (Dar Mahmoud for Publishing and Distribution 2024) [in Arabic].

34 Alice Guerra, Francesco Parisi and Daniel Pi, 'Liability for Robots I: Legal Challenges' (2022) 18(3) Journal of Institutional Economics 331. doi:10.1017/S1744137421000825.

35 Philipp Hacker, 'The European AI Liability Directives: Critique of a Half-Hearted Approach and Lessons for the Future' (2023) 51 Computer Law & Security Review 105871. doi:10.1016/j.clsr.2023.105871.

36 Hannes Claes and Maarten Herbosch, 'Artificial Intelligence and Contractual Liability Limitations: A Natural Combination?' (2023) 31(2/3) European Review of Private Law 469. doi:10.54648/erpl2023027.

6. Insurance: With the rapid progress in the field of AI and robotics, legislation can develop to include specific provisions related to the liability for AI errors. For example, the expected laws can consist of existing or providing special insurance to cover the damages resulting from the use of AI, which could add a protection layer for the users. Moreover, AI has a significant impact on the insurance industry and poses a future challenge in light of the potential errors that could occur.[37]

In general, determining civil liability in this context is dependent on identifying the primary cause of the error and the manner in which local laws deal with such lawsuits. Given the complexity of these issues, it is also necessary to consult specialised legal experts to obtain accurate and context-specific advice regarding liability for AI-related damages.

4.4. Victim's Obligations in Civil Claims Arising from AI Errors in Negotiation

In civil litigation concerning AI-related errors during contractual negotiations, the claimant is subject to specific procedural and evidentiary obligations.

First, the victim must comply with strict procedural time limits for initiating legal action, as failure to observe statutory deadlines often results in the forfeiture of the right to compensation.[38]

Second, the burden of proof rests on the claimant, who must demonstrate both the existence of an AI malfunction and establish a direct causal nexus between the system's error and the harm incurred. Given the autonomous and opaque nature of AI decision-making, this requirement represents a significant legal challenge.

Third, the claimant is required to provide sufficient evidence of the alleged harm, which may include financial statements, contractual records, and other forms of documentary evidence. Furthermore, technical documentation and expert testimony are often essential to establish whether the damage was attributable to a programming deficiency, a system malfunction, or improper human use.

Recent scholarship has increasingly emphasised the necessity of procedural innovations, such as evidentiary presumptions and reversed burdens of proof, to effectively balance victims' rights with the complexities of AI accountability frameworks in the European context.[39]

37 Chris Lamberton, Damiano Brigo and Dave Hoy, "Impact of Robotics, RPA and AI on the Insurance Industry: Challenges and Opportunities' (2017) 4(1) Journal of Financial Perspectives 8.

38 Ana Taveira da Fonseca, Elsa Vaz de Sequeira and Luís Barreto Xavier, 'Liability for AI-Driven Systems' in Henrique Sousa Antunes and others (eds), *Multidisciplinary Perspectives on Artificial Intelligence and the Law* (Law, Governance and Technology Series, Springer 2023) 299. doi:10.1007/978-3-031-41264-6_16.

39 Ebers (n 30).

The methods by which parties may deny civil liability for AI-related errors in negotiation have given rise to several legal questions, including whether the AI user can rely on the foreign cause.[40]

The concept of foreign cause encompasses the urgent or sudden accidents, force majeure events, acts of third parties, acts of the victim, or technical incidents such as breakdowns and viruses affecting AI systems. Under certain conditions, the AI user may rely on such arguments to deny liability. This possibility finds legal support in Article 373 of the Egyptian Civil Code[41] and Article 287 of the UAE Federal Civil Code.[42]

The European Parliament (EP) has paid particular attention to the issue of civil liability for damages caused by AI systems, including AI software embedded in robots and autonomous driving cars. On 17 February 2017, the EP adopted a series of recommendations related to the civil liability for the damages incurred by third parties. [43]

These recommendations highlighted two major challenges:

1. The difficulty of attributing error to AI systems under traditional civil liability frameworks, which typically require the establishment of human fault or negligence as a precondition for civil liability.

2. The limitations of holding AI software liable for cases in which AI can make independent and subjective decisions. In such situations, it becomes problematic to identify a "defect" that caused such damage and the causal link between the assumed defect and the resulting damage.[44]

Accordingly, the European Parliament concluded that the general rules of civil liability are insufficient for addressing the damages caused by AI software and applications. It also urged enacting a special legal framework to accommodate and regulate them in proportion to the nature of AI applications.[45]

40 Muhammad Labib Shanab, *Responsibility for Things: A Comparative Study* (2nd edn, Al-Wafa Legal Library 2009) [in Arabic].

41 Law of the Arab Republic of Egypt No 131 of 1948 'Civil Code' (amended 20 July 2025) <https://eg.andersen.com/translation-law-131-1948/> accessed 25 July 2025. Article 373 of the Egyptian Civil Code stipulates, "The obligor shall be released from liability if the obligor proves that honoring the liability has become impossible for a foreign cause beyond the obligor's control."

42 Federal Law of the United Arab Emirates No 5 of 1985 'On the Civil Transactions Law of the United Arab Emirates' (Civil Code) (amended 27 September 2020) <https://www.lexismiddleeast.com/law/UnitedArabEmirates/Law_5_1985> accessed 20 April 2025. Article 287 of the UAE Civil Code stipulates, "If a person proves that the damage was due to a foreign cause beyond his control, such as the acts of god, sudden accident, force majeure event, third party's act or the victim's acts, the person shall not be liable for the guarantee unless law or the agreement stipulates otherwise."

43 European Parliament Resolution 2015/2103(INL) (n 15).

44 This difficulty is because some artificial intelligence programs can self-learn from their own changing experiences, which enable them to interact in the external environment in a unique and unexpected way.

45 Nasr Aboul Fotouh Farid Hassan, 'Smart Contracts between Reality and Prospects: An Analytical Study' (2020) 28(2) Journal of Security and Law 499. doi:10.54000/0576-028-002-009 [in Arabic].

Among the legislative responses to this call, Germany's 2017 amendment to its Road Traffic Act stands out. This legislation introduced specific rules governing the civil liability of autonomous cars, including the following provisions:

1. The driver must be present in the vehicle at all times while it is in motion.
2. The driver must retain control of the vehicle when the AI system prompts manual intervention, particularly when the system requires that the driver take over the steering wheel.
3. Every autonomous vehicle must be equipped with a black box, similar to those in aeroplanes, to record specific data, including the vehicle's itinerary and the driver's control status at the time of an incident—specifically, whether the accident occurred while the vehicle was under manual control or autonomous operation. If the accident occurs while the vehicle is operating during autonomous mode, the liability shall be borne by the car manufacturer. However, if the accident occurs due to the driver's failure, for instance, to take control despite receiving notifications and warnings from the AI system, the driver shall bear the liability.[46]

4.5. Critical Reflections on Regulatory Complexity and Comparative Prospects

Amid the rapid evolution of AI and its growing role in automated contractual negotiations, the European Law Institute (ELI) issued its 2022 Principles on AI, emphasising the protection of the right to human review of automated decisions and the necessity of preventing a denial of access to justice arising from reliance on intelligent negotiation systems.[47] These guidelines further advocate for the modernisation of traditional legal categories, particularly the notion of "product" to include intelligent software, thereby aligning with evolving approaches to product liability in light of increasing automation.[48]

While these principles provide a valuable theoretical foundation for AI governance within European private law, their scope remains largely Eurocentric and insufficiently tailored to the specificities of non-Western jurisdictions. This underscores the need for comparative research, particularly within Arab legal systems, to assess the adaptability of these principles in light of domestic legal traditions, regulatory frameworks, and socio-cultural constraints. Recent scholarship stresses that legal responses to AI must avoid a mere transplantation of European models, and instead develop context-sensitive frameworks capable of addressing local needs while engaging with global standards of AI governance.[49]

46 Nasr Farid Hassan, 'Some Legal Aspects Related to the Operation of Self-Driving Vehicles According to Dubai Law No. (9) of 2023' (2024) 21(4) University of Sharjah Journal of Legal Sciences. doi:10.36394/jls.v21.i4.10 [in Arabic].

47 Rodriguez de las Heras Ballell (n 1) 21-2.

48 ibid 12-3.

49 Jānis Kārkliņš, 'Artificial Intelligence and Civil Liability' (2020) 13 Journal of the University of Latvia: Law 164. doi:10.22364/jull.13.10.

This research trajectory represents a crucial first step toward establishing an Arab perspective on AI-related liability in contractual negotiations, laying the groundwork for a comparative legal framework that balances technological innovation with the protection of fundamental rights.[50]

4.6. Distinguishing Contractual and Tortious Liability in AI-Related Cases

In AI-related disputes—particularly within contractual negotiation contexts—the distinction between contractual and tortious liability is of fundamental importance due to the technical and operational complexity of intelligent systems. **Contractual liability** arises where a contractual relationship exists between the user or injured party and the developer or operator, entailing obligations such as performance or product safety. In contrast, **tortious liability** applies in the absence of such a relationship and may be based on fault, negligence, or, in some cases, strict liability—especially with high-risk AI systems.

The **European Law Institute** emphasises that traditional legal frameworks are no longer sufficient and calls for extending tortious liability to cover harm caused by high-risk AI, even in the absence of a contractual relationship.[51] Similarly, **Cogen et al.** contend that tortious liability in this context necessitates a reconsideration of fault and evidentiary standards—potentially shifting the burden of proof or introducing legal presumptions to facilitate claims.[52]

Recent studies[53] highlight the practical overlap between contractual and tortious liability, particularly in smart or long-term contracts involving both human and automated elements. This overlap necessitates a redefinition of the conceptual and legislative boundary between the two regimes.

Effective legal regulation of civil liability for AI errors cannot rely solely on classical doctrines. Instead, a **hybrid legal framework** is needed—one that accommodates the unique characteristics of intelligent systems while ensuring meaningful protection for both contracting parties and third parties.

50 Esther Salmerón-Manzano, 'Emerging Technologies, Law and Policies' (2025) 14 Laws 28. doi:10.3390/laws14020028.

51 Rodriguez de las Heras Ballell (n 1) 11-2.

52 Orian Dheu and Jan De Bruyne, 'Artificial Intelligence and Tort Law: A 'Multi-faceted' Reality' (2023) 31(2/3) European Review of Private Law 261. doi:10.54648/erpl2023021.

53 Sharmila Ramachandaran and others, 'Exploring the Challenges of AI-driven Business Intelligence Systems in the Malaysian Insurance Industry' (F1000Research, 22 April 2025). doi:10.12688/f1000research.163354.1.

4.7. Scope of Damage Covered Under Product Liability

In the context of applying product liability rules within the European Union to AI technologies—particularly in contractual negotiations—the delineation of compensable harm emerges as a pivotal issue for ensuring a balance between adequate protection of victims and avoiding disproportionate legal burdens on producers. The recent reform introduced by Directive (EU) 2024/2853 on liability for defective products represents a fundamental update, specifying in an exhaustive manner the categories of compensable damage: death or personal injury, including medically recognised psychological harm; damage to property owned by natural persons (excluding the defective product itself and property used exclusively for professional purposes); and destruction or corruption of data, provided that the data is not used for professional purposes.[54]

The Directive further clarifies that "pure economic loss," as well as harms linked to privacy violations or discrimination, do not in themselves give rise to liability under this framework, although such harms may be addressed under other liability regimes at the national level. This relatively narrow definition reflects the European approach of facilitating effective redress for individuals affected by defective digital products and software—including AI systems—without transforming product liability into a catch-all mechanism for compensating every form of immaterial or purely economic loss.[55]

From a comparative perspective, recent legal scholarship underscores that the reform of product liability rules was driven by the increasing complexity of digital products, supply chains, and the integration of software and machine learning components, while maintaining the logic of strict liability for producers. The scope of compensable damage was deliberately circumscribed to preserve legal certainty and prevent "liability inflation" that could deter innovation. At the same time, evidentiary burdens have been relaxed in favour of claimants, introducing presumptions of defect and causation to mitigate the technical difficulties of proving harm in cases involving AI technologies.

By contrast, Arab civil law systems adopt a broader approach. In Egyptian law, tort liability is founded on the elements of fault, harm, and causation,[56] with wide recognition of compensation for both material and moral damages, without the strict categorical limitations found in the EU framework. Similarly, the UAE Civil Transactions Law[57] explicitly provides for compensation of both material and moral

54 Claudio Novelli and others, 'Generative AI in EU law: Liability, privacy, intellectual property, and cybersecurity' (2024) 55 Computer Law & Security Review 106066. doi:10.1016/j.clsr.2024.106066.

55 Beatriz Botero Arcila, 'AI Liability in Europe: How Does it Complement Risk Regulation and Deal with the Problem of Human Oversight?' (2024) 54 Computer Law & Security Review 106012. doi:10.1016/j.clsr.2024.106012.

56 Law of the Arab Republic of Egypt No 131 of 1948 (n 41) art 163 et seq.

57 Federal Law of the United Arab Emirates No 5 of 1985 (n 42).

harm, with Article 293 expressly recognising moral damages and extending compensation to the victim's heirs in specific cases.[58]

This structure results in a broader remedial scope in Egypt and the UAE than under the European product liability regime, encompassing moral harm and, in practice, certain forms of economic loss, albeit subject to judicial interpretation and doctrinal limitations. Consequently, the transposition of EU product liability rules into Arab jurisdictions requires caution, as the substantive scope of compensable harm and the underlying policy objectives differ significantly: while the European framework is narrowly tailored to protect natural persons under a specialised product liability regime, Arab civil law systems operate within general liability frameworks that are more expansive in their remedial reach.[59]

5 CALCULATING THE COMPENSATION FOR THE DAMAGES RESULTING FROM THE AI ERRORS IN NEGOTIATION

When a defendant fails to rebut allegations of liability for harm caused by an AI system during contractual negotiations, courts will ordinarily order the defendant to pay compensation commensurate with the loss sustained by the claimant. Assessing damages in such cases requires a careful and multifaceted exercise.

First, courts must identify and quantify direct and indirect economic losses, including lost profits (lucrum cessans), additional costs reasonably incurred by the injured party to mitigate or remedy the harm, and losses arising from frustrated or rescinded contracts that resulted from the AI malfunction.

Second, non-pecuniary harms—commonly described as moral damages—must be examined where relevant; such harms may encompass reputational injury, loss of goodwill, and the adverse commercial consequences arising from client attrition or the collapse of strategic relationships attributable to the AI failure.

Third, the evidentiary process necessarily demands both conventional documentary proof (such as financial records, contracts, correspondence) and technical proof, including system logs, incident reports, forensic analyses, and expert testimony on software behaviour and fault.[60]

58 Pierre Mallet and Hala Nassar, 'Consensual Terms Modifying Contractual Liability in the Light of UAE Law: A Comparative Study with French Law' (2024) 7(4) Access to Justice in Eastern Europe 218. doi:10.33327/AJEE-18-7.4-a000107.

59 Sarah Zein, 'The Civil Liability for Artificial Intelligence' (2023) 2022(1) BAU Journal of Legal Studies 14. doi:10.54729/2958-4884.1110.

60 W Nicholson Price II, Sara Gerke and I Glenn Cohen, 'Liability for Use of Artificial Intelligence in Medicine' in Barry Solaiman and I Glenn Cohen (eds), *Research Handbook on Health, AI and the Law* (Edward Elgar Publishing 2024) 150. doi:10.4337/9781802205657.ch09.

Insurance plays a dual role in this ecosystem. On one hand, civil-liability insurance—whether as bespoke AI performance policies or as extensions of existing technology-E&O/cyber covers—can provide direct compensatory relief to victims and spread residual risk across underwriters,[61] thereby reducing the immediate financial exposure of developers and deployers. On the other hand, well-designed insurance markets can foster responsible innovation by incentivising appropriate governance, testing, and maintenance practices; insurers may require conformity with best practices as underwriting conditions.[62]

Nevertheless, insurance solutions have limitations: apportioning liability among developers, vendors, and end-users is often technically and contractually complex; the scarcity of historical loss data for novel AI failure modes complicates underwriting and pricing; and rapid technological change risks producing coverage gaps unless policy wordings and regulatory guidance evolve in tandem with technology.[63]

From a legal-policy standpoint, improving victim protection in AI negotiation scenarios requires a three-pronged approach:

1. Clearer substantive liability rules, including calibrated rules on causation and presumptions where appropriate.
2. Robust evidentiary and technical infrastructures for incident analysis and attribution.
3. Development of insurance mechanisms and regulatory incentives that both compensate victims and promote risk-reducing behaviour by market participants.[64]

Under Egyptian law, tort liability rests on the traditional triad of fault, damage, and causal link,[65] with courts routinely recognising both material and moral damages (including loss of reputation and consequential commercial losses), provided they are proven, foreseeable, and proximate to the wrongful act. Consequently, Egyptian practice generally permits recovery for lost profits and reputational harm when such losses can be substantiated and causally linked to the defendant's conduct or the malfunctioning system.[66]

The UAE legal framework similarly follows a general tort model,[67] recognising compensation for both material and moral injury (see Article 293 regarding moral

61 Al-Saud (n 12).

62 Elisa Luciano, Matteo Cattaneo and Ron Kenett, 'Adversarial AI in Insurance:Pervasiveness and Resilience' (*arXiv*, 17 January 2023) arXiv:2301.0752015. doi:10.48550/arXiv.2301.07520.

63 'Assurance RC Pro adaptée à l'IA generative, les clauses indispensables en 2025' (*Hiscox le blog*, 3 April 2025) <https://www.hiscox.fr/blog/assurance-rc-pro-adaptee-lia-generative-les-clauses-indispensables-en-2025> accessed 20 April 2025.

64 Ramachandaran and others (n 53).

65 Law of the Arab Republic of Egypt No 131 of 1948 (n 41) arts 163 ff.

66 Mohammad Ahmed Abdeen, *Compensation between Material and Moral Damage* (Mansha'at Al-Ma'arif 2002) [in Arabic]; Mohsen Abdel Hamid Ibrahim Al-Bayeh, *The General Theory of Obligations: Involuntary Sources*, pt 2 (2nd edn, Dar Al Nahda Al Arabiya 2011) [in Arabic].

67 Federal Law of the United Arab Emirates No 5 of 1985 (n 42).

damages). Thus, both jurisdictions operate within broad remedial systems that—at least doctrinally—allow compensation for economic and non-economic harms arising from AI failures, subject to the usual constraints of proof, foreseeability, and causation. These features contrast with the evolving European product-liability approach, which narrowly defines compensable damage under the product liability instrument while relying on other regimes for purely economic or privacy-related harms. Accordingly, transplanting European product-liability rules into Egyptian or Emirati legal contexts would require careful calibration to account for the more expansive remedial traditions and evidentiary practices in those jurisdictions.[68]

6 FINDINGS

6.1. Results

The analysis reveals that the integration of AI into contractual negotiations presents significant legal challenges, primarily due to the absence of explicit legislative regulation in Arab jurisdictions and the lack of legal recognition for the autonomous features of AI systems. Egyptian and Emirati civil codes continue to rely on traditional liability structures—built on fault, harm, and causation—without providing tailored provisions for AI-driven decision-making. This results in regulatory uncertainty concerning the allocation of liability among developers, operators, and end-users.

A comparative examination of the European Union reveals a more advanced, though still evolving, framework. Instruments such as the AI Act (Regulation (EU) 2024/1689), the Data Act (Regulation (EU) 2023/2854), and the ongoing debate around the AI Liability Directive collectively seek to mitigate evidentiary burdens on victims, impose obligations of transparency and human oversight, and narrowly define compensable damages under product liability rules. The EU approach strikes a balance between protecting victims and safeguarding innovation, introducing rebuttable presumptions of defect and causation to address the opacity of AI systems.

By contrast, Egyptian and Emirati legal systems adopt broader remedial traditions. Both jurisdictions allow compensation for material and moral damages, including reputational harm and lost profits, without the restrictive categories found in the EU framework. However, the absence of statutory definitions of "intelligent systems," the lack of dedicated supervisory bodies, and the reliance on general civil code provisions hinder their ability to address the unique challenges posed by AI errors in negotiation.

68 Bakhit Muhammad Al-Daja, *Artificial Intelligence: Challenges of Contemporary Civil Liability* (Dar Al-Thaqafa for Publishing and Distribution 2023) [in Arabic].

Consequently, the comparative analysis underscores three key findings:

1. Regulatory Gap: Arab jurisdictions lack specialised legislation to address AI liability, in contrast to the EU's incremental regulatory reforms.
2. Doctrinal Tension: The strict liability logic of European product law diverges from the broader remedial approach in Arab civil law, complicating any direct transplantation of rules.
3. Evidentiary Complexity: Across both systems, proving causation and fault in AI-related harm remains a fundamental obstacle, necessitating novel legal and technical mechanisms.

6.2. Recommendations

Based on these findings, the study proposes several normative measures:

1. Adopt precise legal definitions of AI and intelligent systems within civil codes, ensuring clarity in determining rights, duties, and liability.
2. Establish specialised regulatory or supervisory authorities in Arab jurisdictions to oversee the use of AI in contractual contexts, drawing inspiration from the EU model of independent oversight bodies.
3. Develop hybrid liability frameworks that integrate contractual and tortious doctrines with calibrated presumptions of defect and causation, thereby easing the burden of proof for victims while maintaining fairness to developers and users.
4. Strengthen insurance mechanisms tailored to AI-related risks, both as compensatory instruments and as tools for incentivising responsible AI governance and risk management practices.
5. Ensure context-sensitive legal transposition by avoiding wholesale adoption of European models and instead designing frameworks that respect Arab legal traditions while engaging with global standards of AI regulation.

Together, these recommendations aim to bridge the current regulatory gap, enhance legal certainty, and promote a balanced framework that simultaneously safeguards victims, supports innovation, and ensures accountability in AI-driven contractual negotiations.

REFERENCES

1. Abdeen MA, *Compensation between Material and Moral Damage* (Mansha'at Al-Ma'arif 2002) [in Arabic]
2. Abullail IAD, 'Smart Contracts and Artificial Intelligence and their Role in the Automation of Contracts and Legal Acts: Study of the Role of Scientific Progress in the Development of Contract Theory' (2020) 44(4/1) Journal of Law. doi:10.34120/jol.v44i4.2545 [in Arabic]
3. Abuzir Y, 'Artificial Intelligence in Legal Practice: Applications, Challenges, and Future Prospects' (2025) 8(1) Journal of Business in the Digital Age 33. doi:10.46238/jobda.1629307
4. Al-Bayeh MAH, *The General Theory of Obligations: Involuntary Sources*, pt 2 (2nd edn, Dar Al Nahda Al Arabiya 2011) [in Arabic]
5. Al-Daja BM, *Artificial Intelligence: Challenges of Contemporary Civil Liability* (Dar Al-Thaqafa for Publishing and Distribution 2023) [in Arabic]
6. Al-Hawamdeh AM and Alhasan TK, 'Smart Robots and Civil Liability in Jordan: A Quest for Legal Synthesis in the Age of Automation' (2024) 16(2) Jordanian Journal of Law and Political Science 52. doi:10.35682/jjlps.v16i2.743
7. AlLouzi AS, KRIM K and AlKhamaiseh MA, 'The Role of Artificial Intelligence and Emerging Technologies in UAE Commercial Transactions Law' (2023) 5(4) Research Journal in Advanced Humanities 156. doi:10.58256/4w202n53
8. Al-Sanhouri ARA, *The Intermediary in Explaining the New Civil Law: The Theory of Obligation in General*, pt 3 (Manshaet Al-Ma'arif 2004) [in Arabic]
9. Al-Saud AA, *The Insurance Policy between Theory and Practice: A Comprehensive Analytical Study* (Dar Al-Fikr Al-Jami'i 2008) [in Arabic]
10. Badr OA, *The Concept of Guardianship (Hirasah) in Civil Liability: A Comparative Study* (Dar Al-Nahda Al-Arabiya 2004) [in Arabic]
11. Battikh MRM, "Civil Liability for Damages Caused by Artificial Intelligence Systems: A Comparative Analytical Study' (2021) 9(5) Legal Journal (Faculty of Law, Cairo University, Khartoum Branch) 1513. doi:10.21608/jlaw.2021.190692 [in Arabic]
12. Bertolin A, *Artificial Intelligence and Civil Liability: A European Perspective* (Study, European Parliament's Policy Department for Justice 2025)
13. Botero Arcila B, 'AI Liability in Europe: How Does it Complement Risk Regulation and Deal with the Problem of Human Oversight?' (2024) 54 Computer Law & Security Review 106012. doi:10.1016/j.clsr.2024.106012
14. Buchholtz G, 'Artificial Intelligence and Legal Tech: Challenges to the Rule of Law' in Wischmeyer T and Rademacher T (eds), *Regulating Artificial Intelligence* (Springer 2020) 175. doi:10.1007/978-3-030-32361-5_8

15. Buiten MC, 'Product Liability for Defective AI' (2024) 57(1) European Journal of Law and Economics 239. doi:10.1007/s10657-024-09794-z

16. Chopard B and Musy O, 'Market for Artificial Intelligence in Health Care and Compensation for Medical Errors' (2023) 75 International Review of Law and Economics 106153. doi:10.1016/j.irle.2023.106153

17. Claes H and Herbosch M, 'Artificial Intelligence and Contractual Liability Limitations: A Natural Combination?' (2023) 31(2/3) European Review of Private Law 469. doi:10.54648/erpl2023027

18. da Fonseca AT, Vaz de Sequeira E and Barreto Xavier L, 'Liability for AI-Driven Systems' in Sousa Antunes H and others (eds), *Multidisciplinary Perspectives on Artificial Intelligence and the Law* (Law, Governance and Technology Series, Springer 2023) 299. doi:10.1007/978-3-031-41264-6_16

19. Dheu O and De Bruyne J, 'Artificial Intelligence and Tort Law: A 'Multi-faceted' Reality' (2023) 31(2/3) European Review of Private Law 261. doi:10.54648/erpl2023021

20. Ebers M, 'Liability for Artificial Intelligence and EU Consumer Law' (2021) 12(2) JIPITEC 204.

21. Eidenmüller H, 'The Advent of the AI Negotiator: Negotiation Dynamics in the Age of Smart Algorithms' (2025) 20(1) Journal of Business & Technology Law 1

22. El Gohary EM, El Shabrawy G and Hassib S, 'Assessment of the Artificial Intelligence Strategies Announced in the Arab Countries' (2023) 31(3) Egyptian Journal of Development and Planning 1. doi:10.21608/inp.2023.326507 [in Arabic]

23. Farajpour R, 'The Role of Civil Liability in Artificial Intelligence Laws from the Perspective of Major Global Legal Systems' (2025) 5(2) Journal of Law and Political Studies 182. doi:10.48309/jlps.2025.518711.1353

24. Gao Z and Qian O, 'The Risk and Benefits of Applying Artificial, Intelligence in Business Discussions' (2022) 30 BCP Buusiness & Management 808. doi:10.54691/bcpbm.v30i.2569

25. Guerra A, Parisi F and Pi D, 'Liability for Robots I: Legal Challenges' (2022) 18(3) Journal of Institutional Economics 331. doi:10.1017/S1744137421000825

26. Hacker P, 'The European AI Liability Directives: Critique of a Half-Hearted Approach and Lessons for the Future' (2023) 51 Computer Law & Security Review 105871. doi:10.1016/j.clsr.2023.105871

27. Hassan NAF, 'Smart Contracts between Reality and Prospects: An Analytical Study' (2020) 28(2) Journal of Security and Law 499. doi:10.54000/0576-028-002-009 [in Arabic]

28. Hassan NF, 'Some Legal Aspects Related to the Operation of Self-Driving Vehicles According to Dubai Law No. (9) of 2023' (2024) 21(4) University of Sharjah Journal of Legal Sciences. doi:10.36394/jls.v21.i4.10 [in Arabic].

29. Hussein MA, *The Injured Party's Mistake and its Impact on Liability* (Dar Al-Nahda Al-Arabiya 2007) [in Arabic]

30. Kārkliņš J, 'Artificial Intelligence and Civil Liability' (2020) 13 Journal of the University of Latvia: Law 164. doi:10.22364/jull.13.10

31. Lamberton C, Brigo D and Hoy D, "Impact of Robotics, RPA and AI on the Insurance Industry: Challenges and Opportunities' (2017) 4(1) Journal of Financial Perspectives 8.

32. Laux J, Wachter S and Mittelstadt B, 'Trustworthy Artificial Intelligence and the European Union AI Act: On the Conflation of Trustworthiness and Acceptability of Risk' (2023) 18(1) Regulation & Governance 3. doi:10.1111/rego.12512

33. Luciano E, Cattaneo M and Kenett R, 'Adversarial AI in Insurance:Pervasiveness and Resilience' (*arXiv*, 17 January 2023) arXiv:2301.0752015. doi:10.48550/arXiv.2301.07520

34. Mallet P and Nassar H, 'Consensual Terms Modifying Contractual Liability in the Light of UAE Law: A Comparative Study with French Law' (2024) 7(4) Access to Justice in Eastern Europe 218. doi:10.33327/AJEE-18-7.4-a000107

35. Minssen T and others, 'Governing AI in the European Union: Emerging Infrastructures and Regulatory Ecosystems in Health' in Solaiman B and Cohen IG (edn), *Research Handbook on Health, AI and the Law* (Edward Elgar 2024) 311. doi:10.4337/9781802205657.ch18

36. Momani BT and others, 'Securing Privacy: Safeguarding against Cyber Threats in the UAE and Morocco' (2024) 5(3) Global Privacy Law Review 126. doi:10.54648/gplr2024018

37. Nikolinakos NT, *Adapting the EU Civil Liability Regime to the Digital Age: Artificial Intelligence, Robotics, and Other Emerging Technologies* (Law, Governance and Technology Series vol 68, Springer 2024) 377. doi:10.1007/978-3-031-67969-8_8

38. Novelli C and others, 'Generative AI in EU law: Liability, privacy, intellectual property, and cybersecurity' (2024) 55 Computer Law & Security Review 106066. doi:10.1016/j.clsr.2024.106066

39. Price WN II, Gerke S and Cohen IG, 'Liability for Use of Artificial Intelligence in Medicine' in Solaiman B and Cohen IG (eds), *Research Handbook on Health, AI and the Law* (Edward Elgar Publishing 2024) 150. doi:10.4337/9781802205657.ch09

40. Ramachandaran S and others, 'Exploring the Challenges of AI-driven Business Intelligence Systems in the Malaysian Insurance Industry' (*F1000Research*, 22 April 2025). doi:10.12688/f1000research.163354.1.

41. Rodriguez de las Heras Ballell T, *Guiding Principles for Automated Decision-Making in the EU* (ELI Innovation Paper, European Law Institute 2022)

42. Salmerón-Manzano E, 'Emerging Technologies, Law and Policies' (2025) 14 Laws 28. doi:10.3390/laws14020028

43. Saqr KAF, *Rules and Provisions of Criminal and Civil Liability for Architects, Doctors, Contractors, Property Owners, and Custodians* (Dar Mahmoud for Publishing and Distribution 2024) [in Arabic].

44. Sayedahmed AW, 'Civil Liability for Artificial Intelligence Damages: An Analytical Study' (2020) 43 Generation of In-depth Legal Research Journal 11. [in Arabic]

45. Sée A, 'La régulation des algorithmes : un nouveau modèle de globalisation?' (2019) 5 Revue française de droit administratif 830

46. Shanab ML, *Responsibility for Things: A Comparative Study* (2nd edn, Al-Wafa Legal Library 2009) [in Arabic]

47. Sousa e Silva N, 'The Artificial Intelligence Act: Critical Overview' (*arXiv*, 30 August 2024) arXiv:2409.00264. doi:10.48550/arXiv.2409.00264

48. Sultan NMA, *Liability for the Act of Things Requiring Special Care and Mechanical Machinery in Light of the UAE Civil Code Compared to the Egyptian Civil Code* (Al-Halabi Legal Publications 2005) [in Arabic]

49. Vaccaro M and others, 'Advancing AI Negotiations: New Theory and Evidence from a Large-Scale Autonomous Negotiations Competition' (*arXiv*, 7 July 2025) arXiv:2503.06416v2. doi:10.48550/arXiv.2503.06416

50. Wachter S, Mittelstadt B and Floridi L, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7(2) International Data Privacy Law 76. doi:10.1093/idpl/ipx005

51. Zahra MAM, *Non-Administrative Sources of Obligation in the Civil Transactions Law of the United Arab Emirates: Harmful Acts and Beneficial Acts* (UAE University Press 2003) [in Arabic]

52. Zein S, 'The Civil Liability for Artificial Intelligence' (2023) 2022(1) BAU Journal of Legal Studies 14. doi:10.54729/2958-4884.1110

AUTHORS INFORMATION

Bashar Talal Momani*
PhD (Law), Assoc. Prof., Civil Law, University of Khorfakkan, Sharjah, United Arab Emirates
bashar.momani@ukf.ac.ae
https://orcid.org/0000-0002-0451-2551
Corresponding author, responsible for data curation, methodology, project administration, resources, supervision, validation, writing – original draft, writing – review & editing.

Nasr Farid Hassan
PhD (Law), Assoc. Prof., College of Law, Department of Private Law, Ajman University, Ajman, United Arab Emirates
n.farid@ajman.ac.ae
https://orcid.org/0000-0003-2648-9898
Co-author, responsible for data curation, methodology, resources, supervision, validation, writing – original draft, writing – review & editing.

Hosni Mahmoud AbdelDaiem AbdelSamad
PhD (Law), Assoc. Prof., University of Alazhar, Alazhar, Egypt
prof.hossny@outlook.com
https://orcid.org/0009-0000-5887-3195
Co-author, responsible for data curation, methodology, resources, supervision, validation, writing – original draft, writing – review & editing.

Mohamed Elsayed Eldessouky
PhD (Law), Assoc. Prof., College of Law, Dar Al Uloom University, Riyadh, Kingdom of Saudi Arabia
m.eldessouky@dau.edu.sa
https://orcid.org/0000-0001-9936-8996
Co-author, responsible for data curation, methodology, resources, supervision, validation, writing – original draft, writing – review & editing.

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АНОТАЦІЯ УКРАЇНСЬКОЮ МОВОЮ

Оглядова стаття

ПРАВОВІ ВИКЛИКИ, ПОВ'ЯЗАНІ З ПЕРЕГОВОРАМИ ЩОДО УКЛАДЕННЯ ДОГОВОРІВ, ПРОВЕДЕНИМИ ЗА ДОПОМОГОЮ ТЕХНОЛОГІЙ ШТУЧНОГО ІНТЕЛЕКТУ: ПОРІВНЯЛЬНО-АНАЛІТИЧНЕ ДОСЛІДЖЕННЯ

Башар Талал Момані*, Наср Фарід, Хусні Махмуд АбдельДаєм АбдельСамад та Мохамед Ельсаєд Ельдессукі

АНОТАЦІЯ

Вступ. *Переговори щодо укладення договорів, що проводяться системами штучного інтелекту (ШІ), спричиняють серйозні правові проблеми, зокрема порушують питання розподілу цивільної відповідальності за збитки, завдані через їхні помилки. Це дослідження, що використовує методологію порівняльного аналізу, виявляє значну прогалину в нормативному регулюванні в арабських юрисдикціях, зокрема в Єгипті та Об'єднаних Арабських Еміратах, де в законодавстві відсутні чіткі положення, що регулюють таку відповідальність. Натомість, нещодавні ініціативи Європейського Союзу, зокрема ризик-орієнтований підхід Закону про ШІ та нова система Директиви про відповідальність за ШІ, наголошують на відповідальності розробників та операторів.*

На цьому тлі в статті висловлюється підтримка розробки спеціалізованої арабської правової бази, яка б орієнтувалась на подібні моделі, зважаючи при цьому на місцеву специфіку. Така структура повинна містити: точне юридичне визначення інтелектуальних систем, конкретні механізми доказування для визначення вини та розподілу відповідальності, створення спеціального наглядового органу та зміцнення механізмів страхування як додаткових гарантій.

Методи. *Це дослідження використовує порівняльно-аналітичний метод для вивчення цивільної відповідальності за помилки ШІ в договірних переговорах, зосереджуючись на теоріях делікту та договорів згідно з єгипетським та еміратським законодавством, та порівнюючи їх з останніми розробками ЄС, зокрема Директивою про відповідальність за ШІ та Законом про дані, які надають чіткіші вказівки, ніж Закон про ШІ.*

Результати та висновки. *Порівняльний аналіз дає три основні результати. По-перше, існує явна прогалина в регуляторному полі в арабських юрисдикціях, які продовжують покладатися на загальні положення цивільного права без спеціалізованих правил для ШІ. По-друге, доктринальні відмінності між суворою відповідальністю в ЄС та ширшим підходом до відшкодування збитків в арабських системах ускладнюють будь-яке пряме перенесення європейських моделей. По-третє, проблеми з доказуванням залишаються центральними в обох системах, оскільки встановлення вини та причинно-наслідкового зв'язку у шкоді, пов'язаній зі ШІ, є за своєю суттю складним.*

Ключові слова: *правові виклики, договірні переговори, штучний інтелект (ШІ), цивільна відповідальність, деліктна відповідальність.*

ABSTRACT IN ARABIC

مقالة مراجعة

التحديات القانونية المتعلقة بالمفاوضات التعاقدية عبر تقنيات الذكاء الاصطناعي: دراسة تحليلية مقارنة

بشار طلال مومني*، نصر فريد حسن، حسني محمود عبد الدايم عبد الصمد، محمد السيد الدسوقي

الملخص

الخلفية: تُثير المفاوضات التعاقدية التي تُجرى بواسطة أنظمة الذكاء الاصطناعي (AI) تحديات قانونية عميقة، أبرزها مسألة تحديد المسؤولية المدنية عن الأضرار الناتجة عن أخطائها. تكشف هذه الدراسة، التي تعتمد المنهج التحليلي المقارن، عن فجوة تنظيمية واضحة في التشريعات العربية—وخاصة في مصر ودولة الإمارات العربية المتحدة—إذ تفتقر القوانين إلى نصوص صريحة تُنظّم مثل هذه المسؤولية. وفي المقابل، تُبرز المبادرات الأوروبية الحديثة، بما في ذلك النهج القائم على تقييم المخاطر في قانون الذكاء الاصطناعي (AI Act) والإطار الناشئ في توجيه مسؤولية الذكاء الاصطناعي (AI Liability Directive)، تركيزًا أساسيًا على مساءلة المطورين والمشغلين.

وفي هذا السياق، تدعو الورقة إلى تطوير إطار قانوني عربي متخصص يستلهم النماذج المقارنة مع الحفاظ على الخصوصيات المحلية. ينبغي أن يتضمن هذا الإطار ما يلي: تعريفًا قانونيًا دقيقًا للأنظمة الذكية، وآليات إثبات ملموسة لإسناد الخطأ وتوزيع المسؤولية، وإنشاء هيئة إشرافية متخصصة تُعنى بتنظيم ومراقبة استخدام تقنيات الذكاء الاصطناعي، إلى جانب تعزيز آليات التأمين بوصفها ضمانات تكميلية للحماية من المخاطر المحتملة.

المنهجية: تعتمد هذه الدراسة المنهج التحليلي المقارن في بحث المسؤولية المدنية عن أخطاء الذكاء الاصطناعي في المفاوضات التعاقدية، مع التركيز على نظريتي المسؤولية التقصيرية والعقدية في القانونين المصري والإماراتي، ومقارنتها بالتطورات الحديثة في الاتحاد الأوروبي، ولا سيّما توجيه مسؤولية الذكاء الاصطناعي (AI Liability Directive) وقانون البيانات (Data Act)، اللذين يقدّمان إرشادات أوضح وأكثر تحديدًا من قانون الذكاء الاصطناعي (AI Act).

النتائج والاستنتاجات: أفضى التحليل المقارن إلى ثلاث نتائج رئيسية. أولاً، هناك فجوة تنظيمية واضحة في الأنظمة القانونية العربية، إذ ما تزال تعتمد على الأحكام العامة للقانون المدني دون وجود قواعد متخصصة تنظم قضايا الذكاء الاصطناعي. ثانياً، إن الاختلافات المبدئية في الأسس القانونية بين مبدأ المسؤولية الصارمة المعتمد في الاتحاد الأوروبي، والمنهج العلاجي الأوسع المتبع في الأنظمة العربية، تجعل من نقل النماذج الأوروبية مباشرةً إلى السياق العربي أمرًا معقدًا وصعب التطبيق. ثالثاً، ما تزال التحديات المتعلقة بالإثبات تمثل محوراً جوهرياً في كلا النظامين، إذ إن إثبات الخطأ وعلاقة السببية في الأضرار المرتبطة بالذكاء الاصطناعي يُعدّ مسألة معقدة بطبيعتها نتيجة لطبيعة هذه الأنظمة واعتمادها على عمليات تحليلية مستقلة يصعب تتبعها بدقة.