FinTAF

A REVIEW OF THE LEGAL FRAMEWORK IN MOROCCO AS A HINDRANCE TO ARTIFICIAL INTELLIGENCE ADOPTION IN THE FINANCIAL SERVICES INDUSTRY

Houda , EL IMLAHI CHAIR & Anas , SERGHINI ANBARI

Mohamed V University

Extended Abstract

Artificial intelligence (AI) is the revelation of a new era dominated by data, precision, and gains in terms of time, effectiveness, and relevance. These elements are the best precursors of a revolutionary evolution in all fields. The financial sector, the lifeblood of any society, is the first to be impacted by this disruptive revolution. To ensure a balance between technological development and the protection of fundamental rights and against the bias of technological disruption, international organizations are intervening to issue recommendations and legal guidelines that provide a basis of inspiration for countries around the world.

The evolution of the Moroccan financial system through AI, although timid, is beginning to gain momentum meanly because the opportunities it presents. The aim of this article is to propose an appropriate legal framework for AI for the Moroccan financial sector, based on the various guidelines and legal frameworks approved by international organizations. The results show that, although an initial legal framework already exists in Morocco, it remains insufficient in the face of the challenges posed by the use of AI in the financial sector. This framework can be supplemented by adjustments to hard and soft law.

Introduction

AI is a key part of the humanity's fourth revolution after the industrial revolution. In less than a century, since Turing's first attempt to prove that machines can be intelligent (Turing, 1950), the expansion and use of AI has grown exponentially, from simple machine learning in the 90s to deep learning in the 2010s. We then move on from techniques designed to detect data models and use them for prediction or decision support to more advanced machine learning systems called Deep learning using neural networks underpinning everyday applications such as facial recognition or voice assistants (Bank of International Settlement, 2024).

Since then, the computing power used to train the most advanced AI models has grown exponentially, doubling every six months (Inâka, 2024). These advances have led to the advent of Generative AI - systems that can generate data. The most important type of GenAI is large language models (LLMs), exemplified by systems such as ChatGPT, which specialize in human language processing and generation.

AI labs are striving on the evolution of advanced LLMs such as chatGPT 4 into an AI agent that can encompass a wide range of functionality beyond natural language processing, including making decisions, solving problems, interaction with external environments and executing actions. The ultimate purpose of promoting AI technology is to get to Artificial General Intelligence (AGI), a system that can perform all the cognitive tasks that humans can. (Morris, et al.; 2023).

At the core of the financial system lies the processing and aggregation of vast amount of information into price signals that coordinate financial market participants (Inaka; 2024). Throughout history, advances in information processing, from simple accounting to AI, have transformed the financial sector. It enhances the financial system's ability to process information, analyze data, identify patterns and make predictions.

Background information

In the Moroccan financial system, several banking and financial organizations have begun to adopt Machine Learning systems, particularly for customer interaction. The development of AI in the Moroccan financial market, as in all financial markets, presents various opportunities, such as increasing profitability, improving customer service and combating fraud. It can also be used as a means of prediction and decision support. However, this development comes up against several challenges linked to data, the lack of an appropriate legal framework, and the issues related to ethics and personal data protection. Furthermore, Morocco does not yet have a strategic vision for the implementation of AI. However, since 2021, several public and private initiatives have been attempting to encourage the use of AI (IRES; 2024).

The existing legal and regulatory framework in Morocco regulates aspects of cyberspace, such as electronic transactions, consumer and personal data protection, access to information and cybersecurity. Though, the existing legal framework doesn't ensure a safe use of AI and can't foster trust on this technology.

The problem

To meet the challenges posed by the development of AI, international organizations such as the Organization for Economic Co-operation and Development (OECD), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations (UN), the Bank for International Settlements (BIS) and the European Union (EU) have issued recommendations for the development of this technology within an ethical framework. These recommendations should have an impact on regulations, with a view to adapting the legal framework to the requirements of the development of AI at all levels.

Therefore, the purpose of this study is to present the legal issues linked to the adoption of AI in the Moroccan financial sector, in the context of the recommendations that international organizations have put forward. The current study discusses the following topics:

- the current state of the use of AI in the Moroccan financial sector, in particular the banking and insurance industry;
- the Moroccan legal and regulatory framework related to the development of AI ;
- the main international recommendations in the field of AI;
- a proposal for the appropriate legal framework to adopt in morocco, whether through soft law or hard law (4).
-

Methodology

This paper falls under the category of literature review with an argumentative and critical objective. The scope of the study is based on reviewing and analyzing regulatory frameworks and guidelines of international institutions mainly OECD, EU, BIS, UNESCO, and UN for AI.

As for the Moroccan legal aspect, the focus was on Moroccan laws and regulatory frameworks on both hard and soft law concerning financial field. The choice of the application of AI in Morocco financial field is justified by multiple factors:

- First is the size and the importance in the Moroccan banking system. For instance, at the end of 2022, total bank assets had risen by 7.4%, after 4.9% increase in the previous year, to almost MAD 1,680 billion. Regarding its ratio to Gross Domestic Product (GDP), it represented 126%, an increase of 3 percentage points (Bank Al-Maghrib; 2023).
- secondly the improving of digitalizing of finance enhanced by the regulatory institutions especially the Central Bank of Morocco and The Moroccan Capital Market Authority (MCMA) and finally the use of the AI technology by some financial actors (banks) and the new actors providing this technology (Fintech). For instance, the MCMA launches a Fintech portal on its website, designed to facilitate dialogue between the MCMA and companies active in the innovative financial technology sector (MCMA; 2023).

FinTAF

References

- Bank Al-Maghrib
  - Annual report ; 2023 ; https://www.bkam.ma/Publications-et-recherche/Publications-institutionnelles/Rapport-annuel-presente-a-sm-le-roi
  - Annual report on banking supervision; 2023; https://www.bkam.ma/Publications-et-recherche/Publications-institutionnelles/Rapport-annuel-sur-la-supervision-bancaire
  - Annual report on financial market infrastructures and means of payment and financial inclusion; 2022; https://www.bkam.ma/Publications-et-recherche/Publications-institutionnelles/Rapport-annuel-sur-les-infrastructures-des-marches-financiers-et-les-moyens-de-paiement-leur-surveillance-et-l-inclusion-financiere
- Bank Of International Settlement (BIS)
  - Aldasoro, I, L Gambacorta, A Korinek, V Shreeti and M Stein (2024): "Intelligent financial system: how AI is transforming finance", BIS Working Papers, no 1194, June 2024; https://www.bis.org/publ/work1194.htm
  - "Annual Economic Report"; June 2024; https://www.bis.org/annualeconomicreports/index.htm?m=157
  - Araujo, D, S Doerr, L Gambacorta and B Tissot (2024): "Artificial intelligence in central banking", BIS Bulletin, no 84, January 2024; https://www.bis.org/publ/bisbull84.htm
- European Union

- WHITE PAPER On Artificial Intelligence - A European approach to excellence and trust; 2020; https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0065
- 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; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32024R1689

- OECD
  - OECD (2023), "The state of implementation of the OECD AI Principles four years on", OECD Artificial Intelligence Papers, No. 3, OECD Publishing, Paris, https://doi.org/10.1787/835641c9-en.
  - OECD (2024), "Explanatory memorandum on the updated OECD definition of an AI system", OECD Artificial Intelligence Papers, No. 8, OECD Publishing, Paris, https://doi.org/10.1787/623da898-en.
  - OECD (2023), "Regulatory sandboxes in artificial intelligence", OECD Digital Economy Papers, No. 356, OECD Publishing, Paris, https://doi.org/10.1787/8f80a0e6-en.
  - Recommendation of the Council on Artificial Intelligence, May 2024; https://one.oecd.org/document/C/MIN(2024)16/FINAL/en/pdf

- Moez Bellaaj « Opportunités et défis de l'intelligence artificielle pour les banques : un regard à travers ChatGPT » TICEFA 2023: Tunisia-International Conference on Economics Finance and Accounting Financial Inclusion and Fintech Revolution: Covid-19 Lessons. May 5-7, 2023 Hammamet (Tunisie) ; (PDF) Opportunités et défis de l'intelligence artificielle pour les banques : un regard à travers ChatGPT (researchgate.net)
- Moroccan Capital Market Authority (AMMC), annual report; 2023; https://www.ammc.ma/sites/default/files/Rapport%20annuel%202022_1.pdf
- Morris, M R, J Sohl-dickstein, N Fiedel, T Warkentin, A Dafoe, A Faust, C Farabet, and S Legg, "Levels of AGI: Operationalizing Progress on the Path to AGI," 2024; https://arxiv.org/pdf/2311.02462
- Rania EL OUIDANI, Brahim OUL-CAID "The adoption of AI in the Moroccan banking sector: between economic issues and legal issues" Journal d'Economie, de Management, d'Environnement et de Droit (JEMED) ISSN 2605-6461 Vol 6. N° 1, 2023; https://www.researchgate.net/publication/372279644_L'adoption_de_l'IA_dans_le_secteur_bancaire_marocain_entre_enjeux_economiques_et_enjeux_juridiques
- REMOLINA, Nydia. Open banking: Regulatory challenges for a new form of financial intermediation in a data-driven world. (2019). 1-57. Available at: https://ink.library.smu.edu.sg/caidg/6
- Ridha, M.; Haura Maharani, K. Implementation of Artificial Intelligence Chatbot in Optimizing Customer Service in Financial Technology Company PT. FinAccel Finance Indonesia. Proceedings 2022, 83, 21. https://doi.org/10.3390/proceedings2022083021
- Royal Institute for Strategic Studies « Rapport de synthèse des travaux de la journée de réflexion prospective sur le thème de l'intelligence artificielle de

confiance : levier de changement en faveur d'un développement accéléré du Maroc » ; march 2024 ; https://www.ires.ma/fr/publications/actes-des-seminaires/intelligence-artificielle-de-confiance-levier-de-changement-en-faveur-dun-developpement-accelere-du-maroc

− Suman Kalia « Potential impact of generative artificial intelligence (AI) on the financial industry » International Conference on Computer Science, Information Technology & AI (CSITAI 2023) December 30-31, 2023, Virtual Conference: https://ijcionline.com/paper/12/12623ijci04.pdf

− Turing, A. (1950). COMPUTING MACHINERY AND INTELLIGENCE. Mind, LIX. doi:10.1093/mind/LIX.236.433; https://courses.cs.umbc.edu/471/papers/turing.pdf

− UNESCO
  − Maroc : rapport d'évaluation de l'état de préparation à l'intelligence artificielle, 2024 ; https://unesdoc.unesco.org/ark:/48223/pf0000389744
  − Recommendation on the Ethics of Artificial Intelligence; 2021; https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence

− United Nation
  − "Interim Report: Governing AI for Humanity"; December 2023; https://www.un.org/sites/un2.un.org/files/ai_advisory_body_interim_report.pdf
  − Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development; 2024; https://digitallibrary.un.org/record/4040897?v=pdf&ln=fr