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A REVIEW OF THE LEGAL FRAMEWORK IN MOROCCO AS A HUNDER TO ARTIFICIAL INTELLEGENT ADOPTION IN THE FINANCIAL SERVICES INDUSTRY

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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 using AI in the financial sector. This framework can be supplemented by adjustments to hard and soft law.

Keywords: Artificial intelligence; banking and finance; legal framework; international recommendations, Morocco

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).

1. AI and the financial sector in Morocco

Before assessing the application of artificial intelligence in the financial sector in Morocco, we'll first explore the opportunities and the uses of AI in the financial sector in general.

1.1. AI uses in the financial sector in general

This paragraph aims to present AI applications in the main financial services, namely:

- Banking services
- Insurance services
- Portfolio management and intermediation

1.1.1 AI and Banking

The use of AI for banking services takes place in a bank's front or back office.

- **Front office**

- **Account opening and Know Your Customer (KYC)**: for account opening services, ML already enables fraud to be detected. Fraud on bank accounts can affect customer confidence in the financial institution when they are the victims of such fraudulent activities, ML would enable a rate of up to 80% of predictive equality (Uwaoma, 2024). KYC and fraud detection is enhanced by Generative AI, producing reports and other results required for compliance purposes, based on bank data (OECD, 2023);
- **Customer service:** this is the activity most served by AI, notably through deep learning technology. Thanks to the development of Chatbot via chatGPT, banks are prospecting an enhanced customer service experience (Moez BELLAAJ, 2023). In a chatbot, a knowledge model is implemented to answer questions based on keywords that have been compiled. They enable machines to interact with humans in a closed domain via written text or voice interaction, with or without the help of other humans (Ridha & Maharani, 2022). It simplifies and enhances the customer experience, saving time, especially for routine operations and 24/7 assistance. It can also help improve the quality of advertising content broadcast on the bank's digital platforms and mobile applications. Indeed, using machine learning algorithms, it is possible to analyze data on the performance of previous advertisements in order to generate optimized titles and descriptions (Dwivedi et al., 2023).

➢ **Middle and back office**

- **Payment services:** One of the main use cases for AI models is to improve KYC and Anti Money Laundering processes by enhancing (i) the ability to understand the compliance and reputational risks that customers might incur, (ii) due diligence on the counterparties to a transaction and (iii) payment scheme analysis and anomaly detection (BIS, 2024). Similarly, Machine Learning enables the development of new liquidity management tools (Inaki, 2024).
- **Credit services:** in credit, AI helps to digitize the credit analysis process by transforming unstructured data extracted from annual reports into structured, reliable and ready-to-use data (Société Générale, 2023). Similarly, cloud AI can improve credit assessment using unstructured data. To decide whether to grant a loan, lenders traditionally rely on standardized credit scores, sometimes combined with readily available variables such as loan-to-value or debt-to-income ratios. AI-based tools enable lenders to assess the creditworthiness of individuals using other data. This could include consumers' banking transactions, or data relating to rents, utilities, and telecommunications. (BIS, 2024).
- **Regulatory and compliance requirements:** the banking and financial sector is increasingly subject to regulatory and compliance requirements. Compliance-related generative AI can use regulatory documents, financial reports or compliance guidelines as training data. This can help automate tasks such as document classification, risk assessment or regulatory compliance checks. (Suman Kalia, 2023)

1.1.2 Applying AI to insurance

- **Price optimization:** Price optimization refers to the analysis of consumer and market data to determine the most optimal price point for a service or product. ML algorithms can analyze data such as customer demographics, claims history and policy details to identify the factors that have the greatest impact on risk. This can help regulators set prices for policyholders that accurately reflect the risk associated with each policy. (https://www.analyticsvidhya.com/blog/2023/03/applications-of-machine-learning-and-ai-in-insurance/)
- **Better risk assessment:** insurers can use AI to automatically analyze images and videos to assess property damage caused by natural disasters or, in the context of compliance, to assess property damage caused by natural disasters. (BIS, 2024)

- **Customer service:** as in the banking sector, the use of AI can significantly improve the customer experience by saving them time in handling their complaints.

1.1.3 Applying AI to capital markets

- **Risk analysis and management:** AI in capital markets can enable companies to assess a customer's creditworthiness by analyzing factors such as transaction and credit history, investment preferences and income growth. Data insight can also support pre- and post-trade risk analysis by calculating initial margins and generating predictive models for price forecasting. (https://www.infosysbpm.com/blogs/financial-services/importance-of-ai-in-capital-markets.html)
- **Trading and investment strategies:** Generative AI can help develop trading algorithms and investment strategies. By analyzing historical market data and generating realistic simulations, these models can help traders identify profitable trading strategies and make informed investment decisions, as well as identifying patterns that humans might miss. AI can also improve algorithmic trading by integrating real-time market information and dynamically adapting strategies. This can help traders and investors make more informed decisions, optimize portfolio management and, potentially, improve returns (Suman Kalia, 2023).

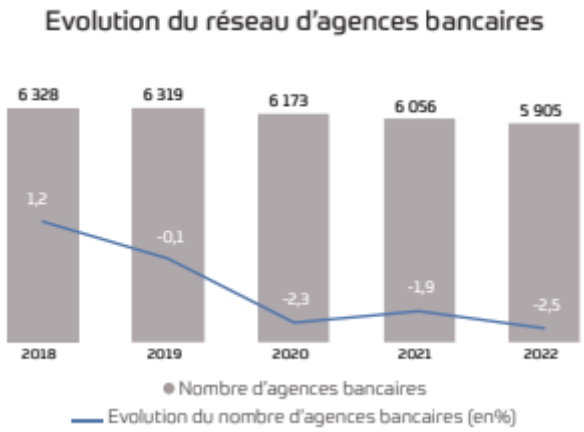
1.2. Examples of AI applications in the Moroccan financial sector

The banking sector, being the main vector of the financial system in Morocco, is committed to deploying the various applications of artificial intelligence.

The main applications relate to customer relations using Generative AI. For example, to improve the customer experience, banks are introducing remote account opening and gradually digitizing credit granting processes for individuals and professionals. Banks have also developed new ways of interacting with customers and non-customers through a conversational digital agent, "chatbot", whose role is to answer users' questions and communicate information about the bank's offers. (Bank Al-Maghrib, 2023).

These uses explain the reduction in the number of bank branches, benefiting from the development of digital banking services.

Graphic 1



Source: Bank Al Maghrib annual report

However, the implementation of AI at banks in Morocco consists mainly of front-office services linked essentially to consultation, filing requests and carrying out transactions using mobile banking and e-banking channels (Bank Al Maghrib, 2023).

A descriptive analysis on the use of AI in the Moroccan banking sector on a sample of 250 bankers shows that more than 50% of these bankers' customers give importance to artificial intelligence technologies. (Rania & Brahim, 2023).

The expansion in the use of artificial intelligence is also encouraged by the promotion of Fintechs, to which financial market regulators (AMMC & Bank Al-Maghrib) attach particular importance.

In fact, following the implementation of actions aimed at the emergence of Fintechs by Bank Al Maghrib, the central bank plans, as part of its 2024-2029 strategic plan, to set up a Fund dedicated to Fintechs to facilitate the emergence of an ecosystem favoring financial innovation, access and use of financial services (Bank Al Maghrib, 2024).

As a result, the desire to encourage financial innovation, including artificial intelligence, is one of several strategic objectives of Moroccan financial sector regulators. However, their initiatives lack consolidated action. Although several cooperative initiatives have been launched, no comprehensive action structured as a national strategy has yet been initiated.

In this context, the Moroccan parliament has held over 30 thematic meetings on artificial intelligence and its impact. These meetings were held with several parties likely to be impacted by AI. However, it should be noted that no meeting has been held with any of the financial market regulators.

2. the Moroccan legal and regulatory framework related to the development of AI

The current Moroccan legal framework contains already provisions that can deal with the legal risks associated with artificial intelligence. It has been designed to protect the rights of individuals against the misuse of new technologies.

These rules can be imperative and form the basis of hard law or suppletive which establish the soft law, mainly issued by regulators. At this stage, we will confine ourselves to presenting only those texts that concern the regulation of AI in the financial sector. We will approach this framework according to the classic categorization: hard law and soft law.

2.1.Hard law

This category includes texts with a mandatory scope, which the non-compliance with carries penalties. They include laws, government decrees and orders, as well as regulators' circulars published in Morocco's official journal. The main texts relating to the digitalization of finance in Morocco concern two areas:

- The institutional framework for the digitization of financial services and the protection of digital systems ;
- Personal data protection.

2.1.1. Institutional framework and system protection

The institutional framework for the development of new financial technologies is regulated by the provisions of the following laws:

- Law n°103-12 on credit institutions and similar bodies (the banking law): this law was adopted in 2015. It introduces legal foundations to enable the emergence of new financial actors and services, notably payment institutions. The aim is to promote the development of electronic payments and diversify the actors in the electronic payments market. The status of "payment institution" provides the ideal institutional framework for providers of AI technology in finance. Similarly, this law puts in place a legal arsenal to protect banking consumers, which can provide a legal basis for protection against AI-related risks.
- Law 15-18 on collaborative financing (crowdfunding law): this law allow to raise funds from the general public via online platforms. It implements a regulatory framework that sets out the main principles underpinning the operating model of collaborative financing platforms, and establishes a comprehensive regulatory framework for collaborative financing players and activities. This framework will facilitate the financing of AI promoters in Morocco.
- Law no. 53-05 on the electronic exchange of legal data: this law sets out the rules applicable to legal data exchanged electronically, the equivalence of paper and electronic documents, and electronic signatures.
- Law n°05-20 on cybersecurity: provides for security measures designed to increase national capabilities in the field of cybersecurity, contribute to securing the Kingdom's digital transition, and coordinate action to prevent and protect against cybersecurity attacks and incidents. It essentially applies to State entities, and imposes a minimum set of rules and security measures to ensure the reliability and resilience of their networks. This law was followed by decree n°2-21-406, which defines the information systems, security system, as well as the qualification criteria for information systems security audit providers, the audit procedure and the qualification criteria for cybersecurity service providers. Above all, it prohibits the hosting of sensitive data outside Morocco. The provisions relating to cybersecurity set out in these two legal texts can provide a promising basis for framing security against the risks of AI-generated computer bias applicable to State entities. These texts also establish the framework for cybersecurity governance in Morocco, through the creation of two committees: a strategic cybersecurity committee and a major cyberisk management committee.
  However, the protective provisions for sensitive data introduced by this texts, in particular the ban on hosting outside the sovereign cloud located on Moroccan territory, may constitute an obstacle to the exploitation of banking and financial data by AI. This data is considered by Moroccan regulations as sensitive data.
- Law no. 43.20 on trust services for electronic transactions: the purpose of this law is to set out the regime applicable to trust services for electronic transactions, cryptographic means and services, as well as the operations carried out by trust service providers and the rules to be respected by the latter and holders of electronic certificates. It lays down the legal basis for the recognition and storage of electronic signatures, establishing levels of legal acceptance according to the cryptographic process used (simple, advanced or qualified). These regulations can form the basis for legal acceptance of AI processes.

2.1.2. Personal data protection

Protecting people's privacy has been one of Morocco's main challenges in the fight against the misuse of new technologies. Inspired by European regulations on the protection of personal

data, Morocco adopted the Personal Data Protection Act in 2009. In the same vein, consumer protection was the second focus of this fight.

- Law 09-08 on the protection of individuals with regard to the processing of personal data (personal data protection law): this law and its implementing regulations constitute the regulatory framework applicable to any automated collection or processing of an individual's data. It lays down the conditions for data collection (which must be lawful and have a legitimate purpose) and processing (which must be accurate and kept in such a way as to enable identification of the persons concerned for no longer than is necessary to achieve the objectives). The law also establishes safeguards for data owners, firstly by requiring the data controller to obtain the prior consent of the data owner. It also provides for:
  - ✓ The right to information ;
  - ✓ The right of access ;
  - ✓ The right of rectification ;
  - ✓ The right to object.

  The text also establishes a regulatory authority called CNDP. The latter has adopted several resolutions applicable to automated data processing in the financial sector:
  - ✓ Deliberation no. D-108-EUS / 2020 of 23/04/2020 concerning the definition of the use of facial recognition technologies in the context of the remote account system by banks and payment institutions;
  - ✓ Deliberation no. D-110-2021 of 30/04/2021 on the draft directive laying down minimum rules for outsourcing to the Cloud by credit institutions;
  - ✓ Deliberation no. 32-2015 of 02/13/2015 concerning the model declaration for the processing of personal data in the context of customer management;
  - ✓ Deliberation no. 478-2013 of November 1, 2013 on the conditions required for the use of biometric devices for access control.

  The work of the CNDP, together with the provisions on the protection of individuals regarding automated data processing, can form the basis for the protection of individuals against the risks associated with AI.
- Law 31-08 enacting consumer protection measures: this law implements provisions for the protection of lay consumers in the context of distance contracting and indebtedness. It strengthens the protection of consumers using banking services by imposing new obligations on credit institutions, which now impact marketing procedures and the conclusion of credit contracts through a reinforced right to information.
- law n°07-03 supplementing the penal code regarding offences relating to automated data processing systems: this text provides for the repressive framework of automated data processing and introduces related offences:
  - ✓ fraudulent intrusion into or maintenance of an automated data processing system;
  - ✓ damage to the operation of an automated data processing system;
  - ✓ intentional data breaches ;
  - ✓ computer crime syndicate.

2.2. Soft-law

The Moroccan financial regulatory framework gives the regulatory authorities certain prerogatives to intervene through supplementary rules in the form of directives or recommendations to fill legal gaps in relation to current phenomena not covered by the current regulatory framework. This is the case, for example, with the Central Bank of Morocco, which often intervenes through directives and recommendations in line with banking regulations.

In this context, the central bank has taken action on several aspects linked to information systems and the protection of consumers of banking services through suppletive rules such as:

- Directive n°3/W/16 on the minimum rules to be observed by credit institutions when carrying out penetration tests on information systems;
- Directive n°4/W/2022 on minimum rules for outsourcing to the cloud by credit institutions;
- Directive n°3/W/2022 setting out the terms and conditions for providing information to credit applicants;
- Directive n°2/W/2022 on the terms and conditions for closing current accounts;
- Directive n°5/W/2019 of November 4, 2019 on banking mobility;
- Recommendation no. 1/G/12 of April 18, 2013 on the handling of customer complaints by credit institutions.

3. the main international recommendations in the field of AI;

Aware of the risks associated with AI, several international bodies have issued recommendations on the use of this technology. The recommendations of these bodies constitute suppletive rules to which member and signatory states are subject, and which they must take all appropriate measures to implement in their internal policies.

The aim of this section is to study the recommendations of some of these organizations. The organizations to be studied are: the OECD, UNESCO and the European Union (EU) .

We present the recommendations of these organizations below, and justify their choice.

3.1. OECD recommandations

The choice of the OECD's recommendations as a benchmark is justified by the organization's interest in Morocco through its various reports in various fields. The organization also assesses the compliance of Moroccan policies with its recommendations, particularly those relating to taxation. The study of the OECD's AI recommendations is therefore necessary.

The OECD introduced the first AI recommendation in 2019, revised on 2024. The table below sets out the OECD's principles and recommendations, their content as well as those which, in our view, should be embodied in a legal instrument and those which fall within the remit of public policy and strategy.

The Recommendation is divided into two main sections:

- Principles for a responsible approach to trustworthy AI ;
- National policies and international cooperation in support of trustworthy AI .

The table below sets out the principles contained in the recommendation that AI systems must comply with, distinguishing between those that can be adapted by regulation and those that must be the subject of an overall public policy.

Principles	Contents	Applicability
Principles of a responsible approach to trustworthy AI		

Inclusive growth, sustainable development and well-being	Proactively adopt a responsible approach in support of trustworthy AI in order to strive for beneficial outcomes for individuals and the planet, such as building human capabilities and enhancing human creativity, including underrepresented populations, reducing economic, social, gender and other inequalities, and protecting natural environments, thereby promoting inclusive growth, sustainable development and well-being.	**Public policy**
Respect for the rule of law, human rights and democratic values, including fairness and privacy	These rights and values include freedom, dignity and autonomy, privacy and data protection, non-discrimination and equality, diversity, equity, social justice, as well as internationally recognized workers' rights. AI actors should institute safeguards and mechanisms, such as the attribution of final decision-making capacity to humans, that are appropriate to the context and state of the art.	**Legal instrument**
Transparency and explicability	AI players should provide relevant information, adapted to the context and state of the art, in order to: - promote a general understanding of AI systems, - inform stakeholders about their interactions with AI systems, including in the professional sphere, - to enable people affected by an AI system to understand the result, and, - to enable people adversely affected by an AI system to challenge the results on the basis of clear and easily understandable information about the factors, and the logic, used to formulate predictions, recommendations or decisions.	**Legal instrument**
Robustness, safety and security	AI players should ensure the traceability of processes and decisions taken during the lifecycle of AI systems and continuously apply a systematic approach to risk management, at every phase of the AI system lifecycle, in order to manage the related risks, including those related to privacy, digital security, safety and bias.	**Public policy and legal instruments**
Accountability	AI players should be responsible for the proper operation of AI systems and compliance with the	**Legal instrument**

	principles outlined above, depending on their roles, context and state of the art.

Source: OECD AI recommendation adapted for the study

An analysis of the content of this recommendation reveals four bases for regulatory intervention:

- The supervision of AI players;
- privacy and personal rights ;
- AI transparency;
- the safety and robustness of AI systems.

3.2. UNESCO recommandations

The study of UNESCO's recommendations on AI is a key importance, given that Morocco declared its adherence to the recommendation on the ethics of artificial intelligence in 2022. In March 2024, UNESCO issued an Artificial Intelligence Readiness Assessment Report for Morocco, which presents a comprehensive diagnosis of Morocco's AI landscape, indicating the potential for AI development, as well as gaps, notably regulatory and institutional. Through this strategic choice, the country commits to setting up an AI governance framework to address the associated challenges and ethical issues (UNESCO; 2024) considering the recommendation on AI ethics.

The aim of this paragraph is not to present the results of this report, but to establish a matrix of principles on the ethics of AI as set out in the recommendation, and to specify those that can be integrated at regulatory level. This choice is justified by the focus of our subject, which concerns the application of AI in the financial sector, whereas the evaluation report covers all aspects of AI application.

Principle or recommendation	Contents	Applicability
Principles to guide States in the formulation of their legislation, policies or other instruments concerning AI		
Principles of proportionality and safety	1. the AI method chosen should be appropriate and proportionate to achieve a legitimate objective; 2. in particular, its use should not constitute a violation or abuse of human rights; 3. and (c) the AI method chosen should be adapted to the context and based on rigorous scientific foundations.	**Legal instrument**
Safety and security	The safety and security of AI will be enabled by the development of sustainable, privacy-friendly data access frameworks that promote better	**Legal instrument**

	training and validation of AI models using quality data.	
Fairness and non-discrimination	Ensure that the benefits of AI technologies are available and accessible to all, taking into consideration the specific needs of different age groups, cultural systems, different language groups, people with disabilities, girls and women, as well as disadvantaged, marginalized and vulnerable people or those in vulnerable situations.	**Legal instruments and public policy**
Durability	Ongoing assessment of the human, social, cultural, economic and environmental impact of AI technologies must be carried out with full consideration of the implications of these technologies for sustainability as a constantly evolving set of objectives across a range of dimensions	**Public policy**
Right to privacy and data protection	Adequate data protection frameworks and governance mechanisms must be put in place with a multi-stakeholder approach at national or international level, protected by judicial systems and applied throughout the lifecycle of AI systems. Data protection frameworks and any related mechanisms should draw on international data protection principles and standards with regard to the collection, use and disclosure of personal data and the exercise of their rights by data subjects, while thus ensuring a legitimate purpose and a valid legal basis for the processing of personal data, including informed consent.	**Legal instrument**
Human monitoring and decision-making	Member States should ensure that it is always possible to assign ethical and legal responsibility for any stage in the lifecycle of AI systems to existing natural persons or legal entities, including in cases of appeals relating to AI systems. Thus, human oversight refers not only to individual human oversight, but also to inclusive public oversight, as the case may be.	**Legal instrument**
Transparency and explicability	Individuals should be fully informed when a decision is based on or made by AI algorithms, particularly when it affects their safety or human rights. In these circumstances, they should have the opportunity to demand or request explanations from the AI actor or public sector institutions concerned.	**Legal instrument**

Responsibility and accountability	AI actors and Member States should respect, protect and promote human rights and fundamental freedoms, and should also foster the protection of the environment and ecosystems, shouldering their respective ethical and legal responsibility, in accordance with national and international law, in particular Member States' human rights obligations, and with ethical guidelines established throughout the lifecycle of AI systems, including with regard to AI actors on their territory and under their effective control. Ethical responsibility for decisions and actions based in any way on an AI system should always ultimately rest with AI actors according to their role in the AI system's lifecycle.	**Legal instrument**
Awareness-raising and education	Awareness of the impact of AI systems must include learning about, by and for human rights and fundamental freedoms, which means that the approach to and understanding of AI systems must be based on the impact of these systems on human rights and access to these rights, as well as on the environment and ecosystems.	**Public policy**
Adaptive, multi-stakeholder governance and collaboration	International law and national sovereignty must be respected in the use of data. This means that states, in accordance with international law, can regulate data generated on or transiting through their territory, and take steps towards effective data regulation, including data protection, based on respect for the right to privacy in accordance with international law and other human rights norms and standards.	**Legal instrument**

Source: UNESCO recommendation on AI ethics adapted for the study

An analysis of the content of this recommendation adds two further principles to those mentioned in the OECD recommendations: proportionality and human supervision.

3.3. EU regulation

European Union legal frameworks are one of the main sources of benchmarks for Moroccan regulations. Its importance also lies in the fact that Morocco has signed several exchange agreements with the Union, most notably the Modernized Convention for the Protection of Individuals regarding Automatic Processing of Personal Data, drawn up and ratified by the Council of Europe. Added to these considerations is the adoption by the EU of REGULATION (EU) 2024/1689 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of June 13, 2024 laying down harmonized rules on artificial intelligence, which will be the subject of the matrix below.

Main fields of regulation	Contents

SCOPE AND DEFINITIONS	The scope covers the marketing, commissioning and use of AI systems. The definition of an AI system in the legal framework has been thought out to be as technology-neutral as possible and to stand the test of time, taking into account the rapid evolution of AI technologies and the AI market.
PROHIBITED ARTIFICIAL INTELLIGENCE PRACTICES	Title II of the regulation lists prohibited AI practices. The regulation follows a risk-based approach and introduces a distinction between AI uses that create i) an unacceptable risk, ii) a high risk and iii) a low or minimal risk.
HIGH-RISK IA SYSTEMS	Title III contains specific rules applicable to AI systems that present a high risk to the health, safety, or fundamental rights of individuals.
TRANSPARENCY REQUIREMENTS FOR CERTAIN IA SYSTEMS	Title IV imposes obligations on certain AI systems because of the specific risks of manipulation they present. Transparency obligations will apply to systems that i) interact with humans, ii) are used to detect emotions or determine association with (social) categories based on biometric data, or iii) generate or manipulate content. In this respect, the regulation lays down prior information obligations enabling the user to decide whether or not to use the AI concerned.
INNOVATION SUPPORT MEASURES	Title V contributes to the objective of creating a legal framework that is conducive to innovation and resilient to the test of time and disruption. To this end, it encourages competent national authorities to set up regulatory sandboxes, and establishes a basic framework for governance, oversight and accountability.
GOVERNANCE AND IMPLEMENTATION	Title VI sets up governance systems at EU and national level. At EU level, the proposal establishes a European Artificial Intelligence Committee. At national level, Member States will have to designate one or more competent national authorities, including the national supervisory authority responsible for monitoring the application and implementation of the Regulation. These will essentially be data protection supervisory authorities.
CODES OF CONDUCT	Title IX establishes a framework for the creation of codes of conduct to encourage suppliers of non-high-risk AI systems to voluntarily apply the mandatory requirements for high-risk AI systems.

*Source: https://*eur-lex.europa.eu/legal-content/FR/ALL/?uri=CELEX%3A52021PC0206 adapted for the study

In the light of the above, the following observations can be made:

- The regulations have adopted two regulatory approaches: the first is hard law, applicable to high-risk AI systems, and the second is soft law, with the possibility of establishing codes of conduct and sandboxes for emerging or non-high-risk AI systems.
- The regulations have defined AI and the various other terms associated with it, to ensure the neutrality of the definition.
- The regulations take up the content of the various recommendations presented, except for personal data protection. This implies that this aspect may not be covered by AI-specific regulations, and that if the existing legal framework can meet this requirement, it will continue to be effective.
- Regulations do not provide a specific framework for applying AI for finance.

4. Proposal for the appropriate legal framework to adopt in Morocco.

The aim of this section is to present the main principals of AI regulation that could be implemented in Morocco, and the legal instrument that would be best suited to its application. To do this, we propose to consolidate these proposals in a matrix that would trace the main themes addressed by the recommendations and provisions presented below, and the framework for their implementation, either in existing regulations or in a specific regulation.

AI regulatory issues	Contents	Applicability
Definition and scope of application	AI technology needs to be defined clearly and as neutrally as possible. For example, the OECD has updated the definition of AI as a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment. (https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449#dates). The scope of application must be defined to limit or broaden the type of AI that will be covered by the regulations, and to specify which AI systems are prohibited.	Such provision must be the subject of a new regulation, and cannot be incorporated into an existing one. However, in the absence of specific regulations, the prohibited uses of AI can be integrated into the existing repressive provisions of the penal code. Hard law
Proportionality and safety	The principle of proportionality must be defined in the regulations. A similar definition is provided in the personal data protection regulations. It limits the use of technology to a precise and legitimate purpose. Use becomes prohibited when the purpose of the use is achieved, or when the use becomes contrary to law.	Such a provision must be included in a specific regulatory framework. Hard law
The obligations of AI providers	The legal framework must set out the various obligations to be met by AI system providers, including system safety, user security and system transparency.	These provisions must be set out in specific AI regulations. Hard law

Equity, non-discrimination and human rights	These general rules on human rights are already provided for in the Moroccan constitution. A generic provision can be included.	Regulations specific to AI Hard law
Right to privacy and data protection	The protection of personal data is of major importance in Moroccan regulations. Given the existence of a legal text governing this aspect, it is advisable to supplement it with provisions specific to AI, thus keeping this aspect regulated by a single text.	To be integrated into the existing legal framework Hard law
Human monitoring and decision-making	This aspect, mentioned in the UNESCO recommendations, is of the utmost importance, especially in financial matters. It should therefore be included in the legal corpus as hard law to limit the bias of technology.	Regulations specific to AI Hard law
Responsibility and accountability	Ethical responsibility for decisions and actions based in any way on an AI system should always rest ultimately with the AI actors according to their role in the AI system's lifecycle.	Regulations specific to AI Hard law
Governance	AI governance bodies must be provided for in the regulatory framework. These will essentially be data protection authorities. These bodies already exist in the Moroccan regulatory framework. The intervention will essentially consist in extending the prerogatives of these texts.	Existing legal framework Hard law
Measures to support innovation	Measures to support innovation can take the form of incentive recommendations from financial market regulators. It should be noted, for example, that the texts regulating financial regulators such as the Central Bank or the Financial Markets Authority stipulate that these regulators must take measures to encourage financial inclusion. AI technology can provide an opportunity for this inclusion, when the legal framework allows.	To be included in recommendations or guidelines issued by financial regulators. Soft law
Codes of conduct and sandboxes	Regulations may provide for the use of regulatory sandboxes for experimentation. For example, the Central Bank has a digital laboratory for experimenting with new financial technologies.	Soft law

Source: **adapted for the study**

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