

Predictive Governance in Algeria in the Age of Artificial Intelligence: Anticipating to Govern Better



Founas Souhila¹

¹Faculty of Law Badji Mokhtar- Annaba University, Research laboratory on the effectiveness of legal standards, Faculty of Law, Bejaia University, Algeria. Email: Souhila.founes@univ-annaba.dz

Submission date: 13.10.2025. Accepted date: 25.04.2026. Publication date: 18.06.2026

Abstract:

This study examines the emerging landscape of predictive governance in Algeria, where the government and institutions are seeking tools that enable them not only to react to problems but also to anticipate them, identify opportunities, and make informed decisions. The objective of our study is to demonstrate the new role of predictive governance, particularly following the digitalization of services through digital platforms. However, this new management approach, attributed to public institutions, reveals a digital centralization and dependence on imported solutions that hinder the government and institutions from effectively addressing the challenges of the modern world.

Keywords: predictive governance, artificial intelligence, anticipation, governing, planning .

Introduction

Faced with the global and complex problems affecting the planet and its inhabitants ¹(health crises, climate change, rapid economic transformations, and rising citizen expectations), predictive governance is generally presented as a comprehensive response. Governments and institutions are seeking tools that allow them not only to react but also to anticipate.

It is in this context that predictive governance comes into play. This involves using data, artificial intelligence, big data and predictive models to inform and guide public decisions proactively.

Predictive governance, sometimes called "anticipatory governance" or "predictive «Analytics in governance" is an approach that aims to support public decision-makers in their search for innovative and effective solutions to address the challenges of the contemporary world.

Governments and institutions can thus use these tools to anticipate problems, identify opportunities and make informed decisions.

¹BERNARD Zuindeau, Sustainable Development and Territory, Septentrion University Press 2010, p518.

Predictive governance is therefore a proactive approach that enables governments and institutions to better manage the challenges of the modern world.

I. The concept of predictive governance

Governance is defined as innovative predictive analytics – governance and ethics encompass the application of advanced data analytics techniques to anticipate future trends and make informed decisions. Governance involves establishing policies and processes to frame the use of these analytics, ensuring transparency, accountability, and regulatory compliance. Ethics, for its part, encompasses the moral principles and values that guide the use of predictive analytics, ensuring that data is processed fairly, with respect for privacy, and without discrimination. These practices aim to maximize the value of predictive insights while ensuring the long-term viability of data analytics projects, fostering stakeholder trust, and minimizing potential risks ².

Predictive governance is based on several technical and institutional pillars that constitute its foundation and components, such as:

- Data collection and processing are essential. This data can be historical or real-time, and comes from multiple sources such as sensors, public statistics, social data, etc.

- Predictive modeling and advanced analytics are also important. They use machine learning, statistics, and simulations to forecast trends, risks, and events.

- Integration into public decision-making processes is crucial. It is useful to predict events, but this is pointless if the results are not used to guide policies, planning, and crisis preparedness ³.

1. The legal framework of predictive governance.

To implement a predictive governance project, it is essential to provide a set of solid justifications ⁴, modernization in the service of efficiency, a response to citizens' expectations, and optimization of services through the digitization of administrative services.

To achieve this, a legal, ethical, and transparent framework is necessary to ensure that the models are not biased. Furthermore, it must respect privacy and allow citizens to understand the decisions that affect them.

² [Innovative Predictive Analytics — Governance and Ethics | Capital Academy | Investment and Financial Strategy Training](#) [Innovative Predictive Analytics — Governance and Ethics | Capital Academy | Investment and Financial Strategy Training](#), p. 1, KIVI King, 2026 .

³ROMAIN Pasquier, Dictionary of Territorial Policies, SciencesPo Les Presses, Paris, 2011 , p. 523.

⁴YAKOUBEN EL- Manaa , Modernisation des services publics administratifs communaux, thesis pour la doctorat en droit, université A.MIRA, Bejaia,2025, p28.

Fundamental arguments in favor of predictive governance rest on its ability to increase citizen participation in the decision-making process by integrating digital technologies into public institutions.

Predictive governance offers several important advantages:

1.1. The principles of predictive governance

1. Anticipating risks

Natural disasters ⁵, which are defined as a disruption severe of functioning populations at all levels affected by dangerous events, resulting in human and material losses and impacts, economic Or environmental And requiring the activation of ORSEC plans. They constitute disaster risks within the meaning of this law (No. 24-04):

- Seismic risks;
- Geological risks;
- The risks of flooding;
- Extreme climate risks;
- The risks of forest fires;
- Industrial and energy risks;
- Spatial risks;
- Radiological and nuclear risks;
- Risks affecting human health;
- Risks affecting animal and plant health;
- The risks of air, marine and water pollution;
- The risks of large human gatherings;
- The risks of desertification;
- The risks of drought;
- The risks of coastal erosion and sea level rise;
- Cyber risks;
- Locust risks;

⁵ Law No. 24-04 of February 26, 2024, concerning the rules for the prevention, intervention and reduction of disaster risks within the framework of sustainable development

- Biotechnological risks

- Epidemics⁶, such as was the case with Covid 19. Economic fluctuations, migrations, etc. allow us to act before the problem becomes critical.

1.2. Optimize resource allocation

From a financial perspective, predictive governance aims to optimize and strengthen transparency in resource allocation.

Thus, according to Article 1, Organic Law No. 18-15 ⁷ has as its main objective the structuring of state financial management. It establishes the principles and rules of public finance, state accounts, as well as the procedures for implementing and auditing finance laws.

It aims to strengthen transparency, the performance of public spending, and the accountability of managers in various sectors, including infrastructure, health, and education. Anticipation helps to prioritize according to future needs.

1.3. Improve responsiveness and planning

- With early warnings, scenario simulation, and faster decision-making.

1.4. Strengthen transparency and accountability when decisions are based on data and models. This allows institutions to better justify their choices ⁸.

1.5. Promote structural anticipation rather than simple reaction, and implement prevention policies to strengthen the resilience of public systems.

2. Obstacles and limitations of predictive governance

Predictive governance represents a major advance in the prevention and anticipation of future trends and making informed decisions; however, certain structural anticipations remain complex and constitute an obstacle to political, social and institutional involvement.

⁶Executive decree no. 20-69 of 26 Rajab 1441 corresponding to March 21, 2020, establishing prevention measures And of struggle against there spread of Coronavirus (COVID-19);

Executive Decree No. 20-70 of 29 Rajab 1441 corresponding to March 24, 2020 establishing additional measures for the prevention and control of the spread of Coronavirus (COVID-19);

Executive Decree No. 20-72 of 3 Chaâbane 1441 corresponding At 28 March 2020, amended And completed extending the partial home confinement measure to certain wilayas;

Executive Decree No. 20-86 of 8 Chaâbane 1441 corresponding to 2 April 2020 extending the provisions relating to measures for the prevention and control of the spread of Coronavirus (COVID-19)

⁷Organic Law No. 18-15 of September 2018 which sets out the principles and rules of public finances, of the State accounts, jo n°53.

⁸Article 5 of Organic Law No. 18-15, cited above

However, despite these advances, predictive governance also presents significant risks and obstacles.

2.1. Data availability

Predictive models function correctly only if the data is complete and accurate. It is also essential that this data be up-to-date. Furthermore, if historical data contains biases, such as discrimination or inequality, these biases will inevitably be reflected in the predictions.

2.2. Algorithm Complexity

Some models, such as deep neural networks or complex models, can be considered “black boxes” that are difficult to understand, both for policymakers and for citizens. This can undermine trust in predictive governance.

2.3. Ethical framework for privacy

The Algerian legislator is fully aware that control of cyberspace constitutes an essential lever of state sovereignty and the protection of the privacy of its citizens. The processing of sensitive data, particularly in the fields of health, migration or justice, raises important questions regarding consent, data protection and individual freedoms.

To this end, Law 18-07⁹, relating to the protection of individuals in the processing of personal data, defined the legal framework governing data management in Algeria. This text requires all data controllers to respect confidentiality and to implement technical and organizational measures to prevent any breach of information security, whether it be data theft, unauthorized access, or disruption of digital infrastructure.

2.4. Risk of forecasting errors

It is important to remember that forecasts are based on probabilities, not certainties. Unforeseen events or trend reversals can render predictions obsolete, thus highlighting the need for a cautious and nuanced approach in predictive governance.

2.5. Resources, skills and institutional culture

Implementing predictive governance requires expertise in data science and artificial intelligence, adequate infrastructure, and a culture of data and foresight within government agencies. This can encounter resistance to change.

There are several concrete cases where predictive governance is or could be applied.

- In the field of public health, this could be used to predict outbreaks and adjust hospital resources.

⁹Law No. 18-07 of 2 September 2018 relating to the protection of natural persons in the processing of personal data, JO No. 53.

- In urban planning, this could help to anticipate population growth, infrastructure needs, mobility, water and housing needs.
- For migration management, this could make it possible to estimate migration flows and plan policy responses.
- In the field of justice and rights, predictive governance could be used to anticipate disputes and improve access to justice by identifying risks or the likelihood of success of legal actions. Predictive justice is one example.

There are political, social, and institutional implications to consider.

Transparency and citizen participation are essential for predictive governance to be legitimate. Citizens must understand how decisions are made, have access to information, and be able to challenge or evaluate the results.

- The question of responsibility also arises: who is responsible if a prediction proves to be wrong or causes harm? Is it the decision-makers, the model designers, or the State?
- We need to establish standards and laws to regulate the use of artificial intelligence, protect data, and prevent discrimination.
- It is important to be careful that vulnerable groups are not disadvantaged or stigmatized by predictions, for example in the area of police control or social benefits.
- Finally, models and policies must be able to evolve with circumstances, incorporate new data, and revise decisions according to what the future shows.

II. Predictive Governance in Algeria: Opportunities and Challenges

Algeria is currently undergoing a major digital transformation. The government is leveraging digitization, artificial intelligence, the strengthening of digital infrastructure, and data governance for socio-economic development. These changes are creating an environment conducive to predictive governance, which involves authorities anticipating economic, social, and environmental challenges and adapting public policies accordingly.

1. General context

AI's predictive governance capabilities enable organizations to anticipate potential risks, compliance issues, or operational inefficiencies before they materialize. By analyzing historical and real-time data, AI identifies patterns, trends, and anomalies that signal emerging challenges. For example, machine learning models can predict regulatory violations, supply chain disruptions, or fraud by processing structured data such as transactions and unstructured data such as legal documents. This proactive approach shifts governance from reactive to predictive, allowing

organizations to mitigate risks, streamline compliance, and make informed decisions with unprecedented speed and accuracy¹⁰.

Here are some key elements of this context:

- The launch of a national data governance framework in February 2025 to guide the exchange, security, reliability and confidentiality of data between ministerial departments and public bodies.
- The creation of a high-performance computing center dedicated to artificial intelligence in Oran, equipped with the latest generation GPUs, to support research, start-ups ¹¹and companies in sectors such as health, industry, cybersecurity ¹²and smart cities

An examination of the provisions contained in Law No. 01-20, as well as Laws 02/08 and 06-06, reveals that while the urban legislator has not explicitly stated year intention to create has legal foundation for tea construction of sustainable smart cities in Algeria, such an intent can be inferred from the objectives outlined within these laws. The following discussion will delve into these laws and their implications for smart city development.¹³

Law No. 01/20, pertaining to regional planning and sustainable development, is designed , as articulated by the legislator, to rebalance the urban structure and elevate the regional, national, and international functions of major cities and towns.

- The launch of an AI data center by Algeria Telecom in Oran, as part of the strategy for digitization and modernization of digital infrastructures.

Skills Center” training centers for young people, particularly in Setif, to train them in digital technologies such as artificial intelligence, cloud computing , the Internet of Things and cybersecurity .

The government's objective is to make artificial intelligence a major economic lever, with the ambition of generating 7% of the national GDP through AI by 2027.

These initiatives demonstrate a willingness to create the infrastructure, regulations and skills necessary to implement effective predictive governance.

1. Possible areas of application for predictive analytics in Algeria

Purpose of this organic law is to define THE frame of management of the finances of the State in front It governs the preparation of finance laws, their content, their presentation, and their adoption by Parliament. It also establishes the principles and rules of public finances and accounts. of the State And execution And of control of there putting implementation of finance laws.

¹⁰YAKOUBEN EL- Manaa , Modernization of municipal administrative public services

¹¹Decree No. 20-254 of September 15, 2020, establishing the national committee for the labeling of start-ups, innovative projects and incubators and defining its missions and operation, Official Journal No. 55

¹²Law No. 18-07 cited above

¹³Mohammed Amin Oukil , Linda Boudraham , “Establishing Smart Cities in Algeria and the Necessity of Digital Transformation: The Bet and the Challenges?” Journal of Construction and Building, Volume 03, Issue 04, 2019, p. 33

There law of finances East elaborated by reference to the budgetary framework and programming as set out in Article 5 of this law and contributes to the implementation of policies public of which there putting in artwork East based based on the principle of results -oriented management , starting from specific objectives defined according to the goals of general interest and subject to evaluation.

A framing budgetary has AVERAGE term East Established annually by the Government upon the proposal of the Minister of Finance, at the beginning of the budget preparation process; it determines the forecasts for the coming year and the two following years. recipes, of expenses And of pay of budget of the State, as well as, where applicable, the debt of the State.

Based on developing capacities, several sectors in Algeria could benefit from predictive governance. Here are a few examples:

1.1. Agriculture and food security

Predicting agricultural yields, periods of drought, or water deficits would allow for the optimization of agricultural inputs. This would help to better prepare policies for subsidies, irrigation, and water management.

1.2. Public Health

It is possible to predict epidemics and hospital needs for proactive management of medical resources ¹⁴.

1.2. Infrastructure management and urban planning

Anticipating increasing urbanization would allow for planning of transport, energy, water supply, sanitation and infrastructure in peripheral and rural areas.

1.4. Market and Price Management

Predictive governance could help avoid shortages and supply disruptions, and stabilize prices of consumer goods, especially during sensitive periods such as Ramadan and national holidays.

1.5. Planning its adaptation to climate change

In 2024, Algeria took a significant step in planning its adaptation to climate change with the National Adaptation Plan (NAP), supported by UNDP and the Green Climate Fund. This strategic project aims to strengthen environmental governance and equip institutions with concrete tools to improve the country's resilience to climate risks. It is possible to predict extreme weather events, air quality, pollution, and water availability.

¹⁴ Souhila founas , Artificial intelligence: a lever of attractiveness for future lawyers, journal of law and sustainable development, vol 13, n° 5, 2025, p 2

Algeria continues to structure its approach to climate challenges, combining scientific expertise, institutional coordination, and local engagement. These advances demonstrate a strong commitment to preparing the country for the impacts of climate change while consolidating a sustainable adaptation policy.

1.6. Digital sovereignty

In December 2024, Algeria formalized its national AI strategy , structured around six main axes: research, skills, data centers, start-ups, cybersecurity and integration into economic sectors, in order to reduce dependence on imported solutions and to position the country as an African leader in AI ¹⁵.

Controlling this virtual space therefore relies in particular on securing databases and information systems, as well as protecting personal data. However, the rise of artificial intelligence and the internet's ability to transcend physical borders complicate this task, exposing states to new risks: electronic espionage, disinformation, manipulation of public opinion, and cyberattacks aimed at paralyzing strategic infrastructure and undermining national sovereignty. With a computing center and a data center, it is possible to anticipate threats, model cyber risks, and better protect critical infrastructure ¹⁶.

2. Issues and challenges specific to Algeria

The implementation of predictive governance in Algeria faces certain difficulties that will need to be anticipated and overcome.

2.1. Data Availability and Quality

Effective forecasting requires reliable, up-to-date, and well-structured data. However, much relevant data is often fragmented across government departments, of poor quality, or poorly organized.

2.3. Digital infrastructure and technical and human capabilities

2025 marks the launch of the first computing center equipped with GPUs to boost AI research and applications. Algeria Telecom has also announced a 1.5 billion dinar fund to support startups specializing in AI, cybersecurity , and robotics, with an ambitious goal of 20,000 startups within the next few years. In April 2025, the Center for the Development of Advanced Technologies (CDTA) took a historic step by inaugurating the first Algerian electronic chip (65 nm), a symbol of digital sovereignty.

Even as centers of excellence develop, it is necessary to strengthen expertise in areas such as artificial intelligence, predictive modeling, statistics, data management, and climate science. Training, attracting, and retaining these skills is a significant challenge.

¹⁵ Souhila founas , Legal Liability for the Use of Artificial Intelligence in the Healthcare Sector, Contemporary Readings in Law and Social Justice, vol 17, n°7, p 105.

¹⁶Law No. 18-07 cited above

2.4. Legal and ethical framework

Law No. 18-07 ¹⁷ requires all data controllers to "respect confidentiality" and to implement technical and organizational measures to prevent any breach of information security, whether it be data theft, unauthorized access or disruption of digital infrastructure.

The national data governance framework represents progress, but it is also necessary to put in place laws to protect privacy, ensure the transparency of algorithms, prevent bias and ensure accountability in the event of erroneous predictions that cause harm.

2.5. Cost and financing

The investments required for this infrastructure, training, maintenance, and system upgrades are substantial. Securing sustainable funding is essential, perhaps through public-private partnerships or international cooperation.

Social acceptance and public trust are also crucial. Citizens must be convinced that the data used is secure, that surveillance does not become abusive, and that the predictions serve the public interest. A lack of transparency or past abuses can breed mistrust.

The risk of territorial inequalities is another challenge. Urban areas and large cities will likely be able to benefit more quickly from predictive tools than rural or mountainous regions, where connectivity and access to digital services are weaker.

Conclusion

In conclusion, predictive governance represents a crucial step in the evolution of governance. It is more proactive and responsive to weak signals, and it prioritizes anticipation. Predictive governance presents considerable opportunities to improve governance effectiveness, resilience, and relevance. However, the success of predictive governance depends on data quality, ethics, transparency, and the capacity of institutions to transform.

Furthermore, predictive governance offers Algeria the opportunity to modernize its public policies, better anticipate its challenges, and make its services more efficient and resilient. Ongoing initiatives, such as data governance, artificial intelligence infrastructure, and youth training, demonstrate that the foundations are already in place. However, there is still a long way to go. It is necessary to combine appropriate regulations, skilled human resources, robust infrastructure, and, above all, to gain the trust of Algerian citizens.

To fully take advantage of opportunities and reduce risks, here are some suggestions:

It is essential to strengthen data governance in Algeria by establishing laws, norms, and standards to ensure that data is collected, exchanged, and stored securely, with particular attention to confidentiality, integrity, and transparency. The Algerian national framework can serve as a solid foundation for this approach.

¹⁷Law No. 18-07 cited above

- It is crucial to promote interoperability between the systems used by different administrations, public institutions and the private sector in order to avoid the creation of data silos that could hinder the effectiveness of predictive systems.
- The establishment of early warning platforms in areas such as health, agriculture, and natural disaster management is essential. These platforms should be designed to aggregate both internal and external data, such as data from satellites or meteorological services, in order to detect weak signals that could indicate significant events.
- It is necessary to train a large number of people in skills related to data, artificial intelligence and modeling, whether through universities or through continuing education and regional skills centers, similar to Skills Centers.
- Ensuring ethical practices is also paramount. This involves establishing a code of ethics for the use of artificial intelligence in the public sector, conducting audits of the algorithms used, implementing rights of recourse for citizens, and ensuring effective protection of privacy.
- A participatory and inclusive approach is essential. It is important to involve local communities, civil society, and researchers in the design and deployment of predictive systems to ensure that the proposed solutions are well-suited to local realities.
- Deployment through pilot phases in specific areas or sectors will allow the systems to be tested, evaluated and refined before being generalized on a larger scale.
- Finally, it is crucial to mobilize the necessary funding through public-private partnerships, international aid and research programs to alleviate the budgetary burden that the implementation and maintenance of these predictive systems could represent.

Reference

- **BERNARD Zuindeau** , Sustainable Development and Territory, Septentrion University Press 2010, p518.
- [Innovative Predictive Analytics — Governance and Ethics | Capital Academy | Investment and Financial Strategy Training](#) [Innovative Predictive Analytics — Governance and Ethics | Capital Academy | Investment and Financial Strategy Training](#) , p. 1, KIVI King, 2026 .
- **ROMAIN Pasquier** , Dictionary of Territorial Policies, SciencesPo Les Presses, Paris, 2011 , p. 523.
- **YAKOUBEN EL- Manaa** , Modernisation des services publics administratifs communaux, thesis pour la doctorat en droit, université A.MIRA, Bejaia,2025, p28.
- **Law No. 24-04** of February 26, 2024, concerning the rules for the prevention, intervention and reduction of disaster risks within the framework of sustainable development
- **Executive Decree No. 20-69** of 26 Rajab 1441 corresponding to March 21, 2020 establishing preventive measures And of struggle against there spread of Coronavirus (COVID-19);
- **Executive Decree No. 20-70** of 29 Rajab 1441 corresponding to March 24, 2020 establishing additional measures for the prevention and control of the spread of Coronavirus (COVID-19);

- **Executive Decree No. 20-72** of 3 Chaâbane 1441 corresponding At 28 March 2020, amended And completed extending the partial home confinement measure to certain wilayas
- **Executive Decree No. 20-86** of 8 Chaâbane 1441 corresponding to 2 April 2020 extending the provisions relating to measures for the prevention and control of the spread of Coronavirus (COVID-19)
- **Organic Law No. 18-15** of September 2018 which sets out the principles and rules of public finances, State accounts, jo n°53.
- Article 5 of Organic Law No. 18-15, cited above
- **Law No. 18-07** of 2 September 2018 relating to the protection of natural persons in the processing of personal data, JO n°53.
- **YAKOUBEN EL- Manaa** , Modernization of municipal administrative public services
- **Decree No. 20-254** of September 15, 2020, establishing the national committee for the labeling of start-ups, innovative projects and incubators and defining its missions and operation, Official Journal No. 55
- **Law No. 18-07** as above
- **Mohammed Amin Oukil , Linda Boudraham** , “Establishing Smart Cities in Algeria and the Necessity of Digital Transformation: The Bet and the Challenges?” Journal of Construction and Building, Volume 03, Issue 04, 2019, p. 33
- **Souhila founas** , Artificial intelligence: a lever of attractiveness for future lawyers, journal of law and sustainable development, vol 13, n° 5, 2025, p 2
- **Souhila founas** , Legal Liability for the Use of Artificial Intelligence in the Healthcare Sector, Contemporary Readings in Law and Social Justice, vol 17, n°7, p 105.
- Law No. 18-07 cited above
- Law No. 18-07 cited above