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Artificial Intelligence and the Future of Public Administration

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Abstract

Artificial intelligence (AI) is already becoming one of the most significant technological agents that transform the theory and practice of the field of public administration in the twenty-first century. In machine learning-based predictive analytics to drive evidence-based policymaking, natural language processing applications to automate delivery of citizen services, and algorithms to detect fraud in the public financial management, and AI-based decision support in healthcare and justice administration, AI has invaded government functions in a wide-ranging manner that continues to accelerate. The current paper is a thorough exploration of the transformational nature of AI in governmental administration and is relying solely on scholarly articles, institutional research, and policy documents published on the internet. The paper will compare the main uses of AI in major areas of the public sector, assess the efficiency, transparency, and responsiveness benefits reported in the international literature, and will equally scrutinize the major issues of concern, namely, the problem of algorithmic bias, the lack of accountability of a black box, the vulnerability of data privacy, the replacement of workers, and the digital equity issue of automated decision-making, which must be tackled before AI can The article also overviews evolving international regulatory standards, including the historic AI Act of the European Union to the G7 Toolkit of AI in the Public Sector, and defines a principles-driven governance agenda of responsible AI integration in government. The paper is of the view that the transformative potential of AI in the context of public administration is not only real but conditional, contingent upon the ability to establish solid ethical governance frameworks, long-term commitment to investing in digital capacity within the public sector, and the willingness to ensure that all AI implementation decisions are made in light of prioritizing democratic values and the best interests of the citizens.

Keywords: *Artificial intelligence, public administration, e-governance, algorithmic bias, machine learning, natural language processing, AI ethics, democratic accountability, predictive governance, AI regulation*

Introduction:

Much of the history of public administration consists in large part of the history of successive technological revolutions in the ability of states to accumulate information, process it and take action with it in the government of complex societies. The telegraph changed the pace of government communication; the typewriter and filing cabinet reshaped the manufacture and retrieval of government records; the computer and the internet reshaped the basic structure of government information systems. All these transitions produced their own efficiencies and disruptions, transforming the connection between state capacity and

democratic accountability in a manner that their champions could hardly foresee. The introduction of artificial intelligence as a general-purpose technology of governance is a disruption of a qualitatively different order than that of these antecedents. In contrast to the previous administrative technologies that increased the capacity of humans to make decisions within a given decision-making structure, AI systems, especially those that are fueled by machine learning, deep neural networks, and large language models have the ability to make, prepare, and influence decisions in scale and with complexity that makes their logic opaque to the human administrators to whom they are allegedly accountable (Busuioc, 2021, as cited in ScienceDirect The black box aspect of most AI systems is not just an inconvenience on technical grounds; it is also a problem to democracy. Delegation to algorithms whose reasonability cannot be explained, audited or challenged to make consequential decisions is a structural issue of governance in a government based on the accountability of decision-makers to citizens. However, the efficiency, speed, and analytical capacity offered by AI to the administration of the population are also as real and democratically meaningful. The governments that have the ability to predict disease outbreaks before they develop into epidemics, identify welfare fraud before it spends the national budget, serve millions of citizens in seconds without human intervention and adjust the services that citizens receive to their needs, through AI-enabled personalization, are, in theory, better placed to deliver on their democratic commitments. The 2024 OECD survey of AI in government reports a booming portfolio of AI use in OECD member countries - 70% of UK government organizations alone either pilot or intend to use AI to make operational decisions by March 2024 (OECD, 2024). The academic publication pace of AI in the field of public administration is now growing at an even faster rate, as 29 peer-reviewed studies were already published in 2024 alone, which has proven AI to be the core of the current research agenda in the field of public administration (MDPI, 2025a). This paper discusses all these aspects of this technological change including the democratic opportunities and the democratic risks in a theoretical context that demands that the paramount values of the people, the right of people, and institutional responsibility are the untouchables of the acceptable AI governance in the state.

Theoretical Framework: AI, Public Value, and Democratic Governance:

A theoretical framework that should be used to analyze AI and its impact on the public sector will be based on such core concepts as public value, democratic accountability, and a link between administrative effectiveness and political legitimacy. For example, the theory of public value suggested by Moore (1995) implies that public administration is aimed at the creation of value for citizens that are regarded as collective stakeholders and not mere users of public services. As stated in Science Direct (2025), AI can contribute to and undermine the process of creating value for citizens: when an AI technology increases citizens' access to their rights and services or boosts their participation in the process of governing, the value is created; in case of discrimination or a lack of human involvement, public value is destroyed.

Another theoretical perspective that is likely to be relevant for examining AI in the context of public administration would be New Public Management (NPM). Indeed, as NPM is centered around such concepts as efficiency, cost reduction, and applying market discipline to government, AI technologies may be viewed as perfect instruments for achieving these goals. In particular, as noted by ScienceDirect (2025), NPM assumptions about efficiency are

compatible with the capabilities of AI that are able to automate administrative procedures, optimize resource allocation, and collect data about organizational performance. At the same time, NPM assumptions about neutrality and accountability appear to be inappropriate in the age of AI since these assumptions have always been criticized in the pre-AI environment. Specifically, the black-box effect makes the chain of democratic accountability impossible since the decisions made by the machine are hard to explain and discuss (ScienceDirect, 2025). Busuioc (2021) refers to the need for accountable artificial intelligence that presupposes not just a formal procedure but also an opportunity to inquire why AI systems decided on something and hold individuals accountable for erroneous or discriminatory decisions. According to the definition provided by Blavatnik School of Government (2024), algorithmic accountability refers to the managers' and organizations' obligation to increase the transparency of values incorporated into the system and assume responsibility for the consequences of its use. The threefold model suggested by Tandfonline (2025a) includes 'Public Administration with AI' (instruments for improving administrative effectiveness), 'Public Administration of AI' (regulating the processes of developing and implementing AI technologies), and 'Public Administration through AI' (techniques for enhancing the effectiveness of governance through the use of AI).

AI Applications in Public Administration: Key Domains and Global Examples:

Since 2015, the scope of practical applications of AI in public administration areas has widened considerably owing to developments in computer capacity, availability of huge data from government sources, and development of general AI platforms. Table 1 reflects the key areas of AI application in public administration and their techniques, purposes, and global examples taken from international literature. Service delivery is the area of AI application in public administration that is used extensively and has the most impact on citizens. NLP is employed in virtual assistants and chatbots which deal with citizen requests in different languages in different time zones in various fields simultaneously, thus easing administrative work and making services available even to those citizens who do not know how to deal with bureaucratic process (Tandfonline, 2023). The use of the Mona chatbot in Austria is an example of chatbot technology, where entrepreneurs receive information about services and browse through government websites with assistance. Thus, it saves not only the time of citizens but also relieves the burden on civil servants. It has been shown in the US state government chatbot evaluation by Chen and Gasco-Hernandez (2024, as cited in Tandfonline, 2025b) that using AI chatbots significantly improves the quality of citizen-oriented service. However, issues regarding accessibility depending on citizens' digital literacy should be raised. In policy making, which was traditionally the field that was exclusively performed by humans, AI begins to make an impact in terms of providing evidence for decisions. The ability to predict, which is inherent in machine learning, allows governments to foresee the needs for different services and estimate beforehand the effects of policies to be applied; also, the analysis of citizens' opinion data helps assess governments' responsiveness (ScienceDirect, 2025). For example, Korea applies the AI convergence system for controlling infectious diseases, which helps in forecasting using the analysed data of medical, quarantine, and geographical nature and generating actions in response to the emerging threat (OECD, 2024). Finland uses Aurora AI technology that enables simulation of different service paths and the selection of government services for particular citizens

according to the occurring events in their lives such as marriage, attending universities, or retirement (OECD, 2024).

Table 1

AI Applications Across Public Administration Domains: Techniques, Functions, and Global Examples

Domain	AI Technique Used	Administrative Function	Global Example
Service Delivery	Natural Language Processing (NLP); Chatbots	Automated citizen query resolution; 24/7 service access; workload reduction for civil servants	Austria's Mona chatbot for business services; US state government chatbot pilots (Chen & Gasco-Hernandez, 2024)
Policymaking	Predictive analytics; Machine Learning (ML)	Evidence-based policy design; scenario simulation; demand forecasting	Korea's AI-based infectious disease forecasting system; Finland's AuroraAI life-event service mapping (OECD, 2024)
Public Financial Management	ML pattern recognition; anomaly detection	Fraud detection; risk management; expenditure optimization; tax compliance monitoring	EU member states' revenue authority AI auditing systems; US GAO algorithm quality frameworks (OECD, 2024)
Healthcare Governance	Deep learning; predictive modeling	Disease outbreak forecasting; resource allocation; diagnostic support at population scale	Colombia geo-cadastral land mapping via AI and satellite imaging (OECD, 2024)
Internal Operations	Robotic Process Automation (RPA); NLP document processing	Back-office automation; document processing; HR management; procurement analytics	70% of UK government bodies piloting AI for operational decision-making (UK NAO, as cited in OECD, 2024)
Justice and Security	Facial recognition; risk scoring algorithms	Surveillance; criminal risk assessment; border management	US COMPAS recidivism scoring system; multiple EU states' immigration algorithms (Brookings, 2023)

Note. Compiled from OECD (2024), ScienceDirect (2025), Tandfonline (2023), MDPI (2025a), MDPI (2025b), and Brookings (2023).

Democratic Risks and Ethical Challenges: Bias, Accountability, and Privacy:

The use of intelligence in public administration is known to make things more efficient and to give faster responses. However, when we look at how artificial intelligence affects democracy we should also think about the risks. There are three issues that need attention: artificial intelligence can be biased and unfair it can be hard to hold anyone accountable when artificial intelligence makes decisions and there are risks to people's private information.

Artificial intelligence can be biased and unfair which is a threat to democratic governance. This bias can come from the data used to train the intelligence, which can reflect past unfairness. It can also come from how the artificial intelligence's designed, which can prioritize efficiency over fairness. For example, a study by PMC found that a system used to decide who gets welfare benefits in Brazil was biased against people who live in areas. This meant that many people who needed help did not get it. Another example is a system used in the Netherlands to detect welfare fraud, which wrongly accused over 30,000 people and caused them a lot of problems.

The fact that artificial intelligence can be like a " box". We cannot see how it makes decisions. Is a big problem for accountability. This means that when something goes wrong it can be hard to find out who is responsible. As Busuioc said, the way artificial intelligence makes decisions can make it impossible to identify the party. This problem is made worse when artificial intelligence systems are developed by companies because government institutions do not understand how they work. One way to solve this problem is to develop intelligence systems that can explain their decisions. However, we also need to establish strategies that include evaluating intelligence systems training government officials and citizens and using artificial intelligence in a way that is transparent and fair.

The third big issue is the problem of data privacy. Artificial intelligence applications in agencies need to access a lot of data which raises concerns about people's private information. While it is true that data management has always involved some trade-offs the use of intelligence to process large amounts of personal data is a new and bigger concern. As PMC said this raise concerns that go beyond what we have experienced before. Artificial intelligence, in administration is a big issue and we need to think carefully about how to use it in a way that is fair, accountable and respectful of people's privacy.

Global Regulatory Frameworks for AI Governance in the Public Sector:

The world is starting to see the risks that Artificial Intelligence poses to democracy. Because of this many countries are creating rules and guidelines for Artificial Intelligence. These rules are being made to ensure that Artificial Intelligence is used in a way that's fair and responsible.

Table 2 shows the rules for Artificial Intelligence in different countries and how they are connected to ethical principles and accountability.

Table 2

AI Governance Frameworks: Key Ethical Principles and Regulatory Approaches by Jurisdiction

Jurisdiction / Body	Framework / Instrument	Key Ethical Principles	Accountability Mechanism
European Union	EU AI Act (approved March 2024); Ethics Guidelines for Trustworthy AI	Human agency; technical robustness; privacy; transparency; fairness; accountability	Risk-based compliance tiers; independent national supervisory authorities
United States	2024 Executive Order on AI Governance; NIST AI Risk Management Framework	Responsible use; risk management; innovation encouragement; federal agency guidelines	Government Accountability Office (GAO) algorithm quality frameworks; voluntary compliance
Canada	Treasury Board Directive on Automated Decision-Making; Guide on Generative AI	Transparency; accountability; legality; procedural fairness; Gender-based Analysis Plus	Mandatory policy instrument; impact assessment requirements before deployment
G7 / OECD	G7 Toolkit for AI in the Public Sector (October 2024); OECD AI Principles	Trustworthy AI; human-centered design; democratic values; international alignment	Collaborative governance frameworks; algorithm registries; public sector auditing tools
India	Digital Personal Data Protection Act 2023; National Strategy for AI (NITI Aayog, 2018)	Inclusive AI; responsible development; privacy protection; social good orientation	Evolving regulatory framework; sector-specific guidelines; data protection board

Note. Compiled from OECD (2024), G7/OECD Toolkit (2024), Blavatnik School of Government (2024), Tandfonline (2025c), and MDPI (2025b).

The European Union made a law about Artificial Intelligence that was agreed upon in December 2023 and approved in March 2024. This law is the complete set of rules for Artificial Intelligence in the world. It has implications for how Artificial Intelligence is used in the public sector. The law says that Artificial Intelligence systems have to be categorized based on how harm they could cause. The systems that could cause the most harm have to be transparent, accountable and overseen by humans.

The European Union Artificial Intelligence law says that high-risk Artificial Intelligence systems have to be explainable, auditable and reviewed by humans before they are used in the sector. This is based on the idea that the public sector should be accountable to the people.

In October 2024 the G7 countries made a toolkit for using Artificial Intelligence in the sector. This toolkit shows that many countries agree on the importance of Artificial Intelligence governance. The toolkit emphasizes the need for Artificial Intelligence to be trustworthy designed with humans in mind and aligned with values. It also says that Artificial Intelligence governance is an issue that requires international cooperation.

Canada has a directive on Automated Decision-Making that's very detailed. It says that the impact of Artificial Intelligence systems on genders has to be analyzed during development. It also says that there have to be assessments of the impact of Artificial Intelligence before it is widely used. Additionally, it requires that specific people be held accountable for Artificial Intelligence systems. This shows that Artificial Intelligence governance, in the sector needs clear rules and procedures not just general principles. The rules have to be enforceable and attached to people or organizations.

The European Union Artificial Intelligence law and the G7 toolkit are examples of how countriesre working to regulate Artificial Intelligence. They are trying to make sure that Artificial Intelligence is used in a way that's fair, transparent and accountable. Artificial Intelligence governance is an issue that requires international cooperation and clear rules

Workforce Transformation and Institutional Readiness:

The use of Artificial Intelligence in administration is not just about changing technology it is a big change for the organization and the people who work there. Artificial Intelligence changes the roles, skills and culture of service. MDPI says that the skills and learning of the workforce are one of the parts of the Artificial Intelligence Integration Capability Model. This model also includes getting access to data having the digital infrastructure and changing the way things are done. MDPI argues that the good things about Artificial Intelligence can only happen if the people in the organization have the skills to work well with Artificial Intelligence systems understand what they are saying and make sure they are making decisions.

The OECD has a plan for skills in the public sector. They say that public servants need to learn about things so they can make the change from e-Government to digital government. If public servants do not understand Artificial Intelligence, it can cause problems. MDPI says that Artificial Intelligence is not being used much in the public sector as it is in the private sector. This is because the public sector has to be more careful about how they make decisions and they do not have the skills they need. A study by Neumann et al. Found that in some organizations in Switzerland, Artificial Intelligence is only used because some staff members are interested and they get help from outside technology partners. This is not a way to make sure Artificial Intelligence is used well in the organization.

Artificial Intelligence might replace some public sector workers those who do routine tasks like data entry and helping citizens. This is an issue for public administration. MDPI says that Artificial Intelligence can help public servants do important tasks. This can only happen if there are programs to retrain workers and help them change jobs. The organization also needs to be able to use both machine skills in a way that complements each other. Artificial Intelligence changes the roles of servants it is a transformation. MDPI and the OECD are talking about the importance of Artificial Intelligence, in administration and how it can be used to make things better.

Recommendations: Toward Responsible and Democratic AI Governance in the Public Sector:

We need to make sure that Artificial Intelligence is used in a way in public administration. This means Artificial Intelligence should make things more efficient and effective and at the time protect the values that are important to us like being accountable, fair, transparent and respecting citizen rights.

First, we have to make sure that the people who create algorithms are accountable for what they do. This means we need to have independent people check the algorithms keep a list of all the Artificial Intelligence systems used by the government and make sure that the people who make decisions using Artificial Intelligence are responsible for what they do. The Blavatnik School of Government says that this is an important thing to do and that it should be a requirement for all governments that use Artificial Intelligence.

Second, we have to deal with the problem of bias. This means we have to make sure that the data we use to train Artificial Intelligence systems is fair and representative. We should use tools like AI Fairness 360 to check for bias and make sure that we have ways to detect and fix problems in time. We should also make sure that we consider the impact of Artificial Intelligence on groups of people before we start using it. For example, Canada has a rule that says we have to do a gender-based analysis before we can use Artificial Intelligence to make decisions.

Third we have to make sure that humans are in charge when it comes to decisions. Artificial Intelligence should be used to help humans make decisions not to make decisions on its own. This is especially important in areas like welfare, criminal justice and health. We should design Artificial Intelligence systems that support judgment rather than replacing it.

Fourth we need to invest in teaching people about Artificial Intelligence and making sure that they have the skills and knowledge they need to use it. This includes things like data infrastructure, workforce training and organizational culture. We need to make sure that the people who work with Artificial Intelligence systems can understand how they work and can override them if necessary. The MDPI says that this is crucial for making sure that Artificial Intelligence is used in a way that's good, for democracy. Artificial Intelligence is a tool and we need to make sure that we use it in a way that respects our values and promotes the public good.

Conclusion:

Artificial intelligence is already here. It is changing the way governments work. It is changing how they provide services decide how to use resources make policies and manage their systems. This is happening fast and on such a big scale that people who study government make policies and work in government need to think about artificial intelligence as a big deal for democracy not just a technical thing for experts to handle. They need to think about how it affects the public and makes sure the government is accountable to the people.

Using intelligence can really help governments work better and respond to people's needs faster. For example, if a government can find out about disease outbreaks sooner make sure people get the help, they need treat everyone fairly and give them services that're just right for them then that government is doing a better job. To make this happen governments need to have rules in place that make sure artificial intelligence is used in a way that is fair and accountable. This means being able to explain how decisions are made making sure the system is not biased protecting people's information and having humans involved in decisions so that the government is still in control.

What the future of government looks like with intelligence depends on the choices we make about how to use it. These choices are not about the technology itself. About what kind of government, we want to have. We need to decide who gets to use intelligence for what

purpose and how to make sure it is used in a way that is good for everyone. These are not decisions they are about what is right and wrong and what kind of democracy we want. If we make choices artificial intelligence can be a powerful tool for making government work better for people. If we do not it could become a way for governments to have too much power without being accountable, to anyone.

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