



Beyond Efficiency: Governance, Accountability, and Institutional Capacity in AI-Driven Public Administration

ABSTRACT

Digital transformation has evolved from an administrative modernization agenda into a structural dimension of governance, with artificial intelligence (AI) increasingly reshaping how public institutions organize, decide, and interact with citizens. While AI offers important opportunities for responsiveness, innovation, and service improvement, its implications for accountability, legitimacy, transparency, and public trust remain insufficiently understood; this study asks how AI is redefining governance capacity in public administration. Drawing on the literature on public administration, digital governance, and public sector innovation, the study develops a conceptual framework examining both the capacity gains and risks of AI integration, treating digital transformation as a governance challenge involving administrative reform, public value creation, democratic oversight, and institutional adaptation rather than a purely technical matter. The analysis shows that AI can strengthen evidence-based policymaking, accelerate administrative processes, and personalize service delivery, but that these gains may be offset by algorithmic bias, opacity, accountability gaps, and digital exclusion when adopted without adequate institutional safeguards. The paper's value lies in showing that AI's contribution to public management depends on the institutional, legal, and normative environment in which it is embedded, which in turn requires regulatory capacity, qualified human resources, and mechanisms for oversight and contestability. Future research should test this framework empirically across diverse administrative contexts.

Keywords: Artificial intelligence, Digital transformation, Public management, Accountability, Institutional capacity.

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INTRODUCTION

In the twenty-first century, public administration is undergoing a profound transformation shaped by accelerating technological change, rising societal expectations, and the increasingly complex structure of economic, social, and political problems. In this process, digitalization has ceased to be merely an agenda for administrative modernization; it has evolved into a structural dimension of governance that redefines the state's organizational form, its decision-making logic, and its relationship with citizens. In this new paradigm, where data-driven, network-based, and algorithmic operating mechanisms have replaced traditional bureaucratic structures, public institutions face a capacity test that involves not only adopting technological tools but also embedding them within an institutional, legal, and normative framework.

One of the most decisive components of this transformation is the integration of artificial intelligence into public administration. Spanning a wide range from automated decision-support systems to predictive analytics, and from digital service platforms to smart bureaucratic processes, AI has begun to reshape how states organize themselves, make decisions, and interact with citizens. Indeed, AI has emerged as one of the most significant technological innovations advancing the debate on the digital transformation of the public sector, driving many governments to invest heavily in exploring how automated systems can support human decision-making -or at least decision preparation- (Mergel et al., 2023). Data from international organizations reveal the pace of this trend. According to a comprehensive OECD (2025) review covering 200 use cases, a significant share of AI applications in public institutions is directed toward automating processes and services, closely followed by a second major cluster comprising decision-making, situational interpretation, and forward-looking forecasting processes. This picture shows that AI in public administration is not merely a tool for automating routine tasks but also an analytical capacity that informs managerial reasoning.

However, the significance of this transformation cannot be reduced to efficiency gains alone. While AI offers important opportunities for responsiveness, innovation, and service quality in public services, it also raises fundamental questions about the normative foundations of governance, including accountability, legitimacy, transparency, ethics, and public trust. The OECD's (2026) Digital Government Outlook report points to a widening

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gap between states' growing expectations for speed, adaptability, and responsiveness, and institutional systems that fail to keep pace with these expectations. At this point, digital technologies and data are no longer optional facilitators but have become core infrastructure for addressing today's policy and service-delivery challenges (OECD, 2026). Consequently, the value that AI adds to public administration depends less on the technology itself than on the quality of the institutional, legal, and ethical environment in which that technology is embedded.

Public value theory provides a useful framework for grounding this argument. The approach developed in Moore's (1995) seminal work demonstrates that management strategies aimed at creating public value require not only the organizational capability and resources necessary to deliver services, but also political legitimacy and sustainability (Cordella & Bonina, 2012). When applied to digital governance, this perspective implies that the efficiency gains generated by technology can only translate into genuine public value when accompanied by legitimacy and sustainability. Indeed, public value management offers a more inclusive perspective that shifts the focus from service production toward meeting public expectations and goals (Bannister & Connolly, 2014; Cordella & Bonina, 2012).

This study examines how artificial intelligence redefines governance capacity in contemporary public administration. The core argument is as follows: the contribution of AI to public-sector innovation should not be assessed solely on technical performance or managerial outputs. Rather, AI must be understood as a governance issue before it is treated as a purely technical solution. Within this framework, digital transformation is treated not as a simple process of technology adoption but as a broader governance problem encompassing administrative reform, public value creation, democratic oversight, and institutional adaptation. Drawing on the literature on public administration, digital governance, and public sector innovation, the study aims to develop a framework that conceptualizes both the promises and the risks of AI integration.

The paper is structured as follows. The next section discusses the structural transformation of public administration in the context of digitalization and artificial intelligence, as well as the governance dimension of digitalization. The third section addresses the capacity gains that AI provides in public administration and the risks that accompany them, with particular attention to managerial performance gains alongside algorithmic bias, opacity, and accountability problems. The fourth section examines the tension between efficiency and legitimacy within the governance problematic. In contrast, the fifth section assesses institutional capacity and governance requirements along their legal, institutional, and oversight dimensions. The concluding section brings the discussion together and offers reflections on an institutionally robust and ethically grounded AI governance that moves beyond efficiency as the sole benchmark.

TRANSFORMATION OF PUBLIC ADMINISTRATION IN THE CONTEXT OF DIGITALIZATION AND ARTIFICIAL INTELLIGENCE

Public administration has, over the course of history, been transforming away from a managerial understanding dominated by traditional bureaucratic structures, based on the physical circulation of documents and rigid hierarchical organization, toward a new managerial paradigm in which data-driven, digital, and algorithmic operating mechanisms come to the fore. Developments in digitalization and AI technologies have moved beyond being merely a technical modernization element for public administration; strengthening institutional capacity, increasing the effectiveness of public services, meeting societal demands, and ensuring managerial sustainability have become strategic imperatives. This transformation has also necessitated the restructuring of decision-making processes, managerial coordination, and public service delivery to be based on digital infrastructure. Digitalization in public administration, therefore, represents a structural transformation process that redefines the state's organizational structure, operating logic, and the form of its relationship with citizens (Kayacı, 2025a). Public institutions that fail to adapt to this transformation face not only the risk of falling behind in technological competition but also the risk of becoming structures whose capacity to respond to societal expectations weakens, whose decision-making processes lose effectiveness, and whose managerial legitimacy becomes contested.

Structural Transformation in Public Administration

Public administration, in the modern sense, began to take shape with the emergence of the nation-state. Throughout the Middle Ages, political authority was fragmented among feudal structures, local authorities, and religious institutions; it gradually became centralized as monarchical authority grew in the sixteenth and seventeenth centuries. In particular, the strengthening of the nation-state concept, grounded in the principle of sovereignty following the Peace of Westphalia in 1648 (Oğurlu, 2019), marked an important turning point in the institutionalization of public administration.

The conception of the state in the eighteenth and nineteenth centuries took shape around the notion of the 'night-watchman state,' based on traditional and classical functions such as security, foreign policy, and justice (Heywood,

2013). Shaped by classical liberal thought, the state in this period was positioned as an actor that intervened as little as possible in the economic and social spheres. While the governing approach relied on command-and-control mechanisms and citizens were regarded as subjects to state authority (Eryılmaz, 2024), the criterion of success was assessed in terms of the preservation of public order and the continuity of state authority.

From the early twentieth century onward, under the influence of industrialization, urbanization, and economic crises, the scope of state functions expanded, welfare-state practices emerged, and public administration began to assume a more active role in social and economic spheres (Rosanvallon, 2010; Giddens, 2006). The Weberian bureaucracy became the basic organizational model of this period, with specialization, hierarchy, adherence to law, and institutional rationality as the fundamental principles of public administration.

After the 1970s, the increasing fiscal burden of the welfare state brought about a new paradigm shift in public administration. The New Public Management approach, referred to as Public Administration 3.0, envisions restructuring the public sector according to private-sector logic (Osborne, 2006). During this period, concepts such as performance, effectiveness, efficiency, quality, and results orientation came to the fore. The state was intended to shift from a direct service provider to a regulatory and supervisory actor, and practices such as privatization, strategic management, and performance measurement became widespread (Özer, 2015). The citizen, in turn, ceased to be a passive recipient of public services and began to be defined as a customer.

With the 2000s, developments in information and communication technologies initiated the process of digital transformation in public administration (Çeliksoy & Akça, 2024). During this period, referred to as Public Administration 4.0, internet technologies, e-government applications, and network-based governance mechanisms transformed the delivery of public services (Göçoğlu, 2019). The citizen-state relationship became independent of time and place, service accessibility increased, and transparency, accountability, and citizen satisfaction were accepted as core performance indicators in public administration. Public administration thus evolved from bureaucratic organizations toward digital platforms.

Public Administration 5.0, in turn, goes beyond digitalization to encompass the integration of technologies such as artificial intelligence, big data, the Internet of Things, and blockchain into public administration (Kocaoğlu & Şahnagil, 2022; Telli Yamamoto, 2018). Regarded as another version of the human-centered and sustainable management approach of Public Administration 4.0, this new stage is built on a society-based foundation, shaping a profile of public administration focused on individual welfare and well-being (Yılmaz & Mecek, 2021). With Public Administration 5.0, AI applications in public services have ceased to be merely tools in technical domains and have begun to occupy a central place in social life. AI's strengthening of data-driven decision-making mechanisms and its provision of time and cost efficiencies have made it a strategic element in transforming how public institutions function. The state has now become an actor that produces data, analyzes it, and manages decision processes through intelligent systems (Dunleavy et al., 2006a). Citizens, meanwhile, have ceased to be mere consumers of services and have become digital stakeholders contributing to policy production.

Table 1: Transformation in Public Administration

Dimension	Public Administration 1.0	Public Administration 2.0	Public Administration 3.0	Public Administration 4.0	Public Administration 5.0
Role of the State	Security State	Welfare State	Regulatory State	Platform State	Smart State
Governing Logic	Command and Control	Bureaucratic Management	Results and Performance Management	Governance	Digital Governance
Economic Paradigm	Classical Liberalism	Social Liberalism	Neo-Liberalism	Digital Liberalism	Data Economy
Governing Instrument	Rules	Hierarchy	Performance	Data and Networks	Artificial Intelligence
Technological Infrastructure	Steam Power	Electricity	Computer	Internet	AI, IoT, Blockchain
Position of the Citizen	Subject	Service Recipient	Customer	E-Citizen	Digital Stakeholder
Success Criterion	Order	Legal Compliance	Efficiency	Citizen Satisfaction	Sustainable Value

This transformation in public administration has led to significant changes in the basic dynamics of the managerial approach, beyond simply moving service-delivery processes into an electronic environment. The integration of information and communication technologies into public administration represents a governance-related transformation that reshapes decision-making, coordination, participation, and service-delivery mechanisms (Islam, 2026). Within this framework, the fragmented, costly, and low-effectiveness practices frequently encountered in traditional management structures have given way to integrated digital governance models that strengthen inter-institutional integration, increase resource efficiency, and support a citizen-oriented approach to service delivery.

This has thereby paved the way for public services to be delivered in a more transparent, accessible, accountable, and coordinated manner.

The Governance Dimension of Digitalization

The static, centralized, and hierarchical structure of the traditional managerial approach turned public administration into a cumbersome bureaucratic mechanism, leaving public services insufficient to meet societal expectations. In particular, the concentration of decision-making authority largely in the hands of public authorities led to the exclusion of citizens from policy-making processes and to challenges to the legitimacy of decisions taken. For this reason, in place of the classical managerial approach, a governance model was developed that draws on the knowledge, experience, and resources of different actors in the processes of formulating, implementing, and evaluating public policies, expressing a more participatory and collaborative approach to management.

Governance is fundamentally based on the idea that the state does not, by itself, possess the capacity to solve public problems, and that the private sector and civil society organizations must be drawn upon to resolve them (Kooiman, 1993). Governance is therefore a process carried out through cooperation and coordination among groups or actors with differing interests, organized through network structures (Kocaoğlu & Fural, 2018). From this perspective, the concept of governance is built on three basic principles: the rule of law, participation, and equality (Gündoğan, 2004). In addition, transparency, accountability, openness, effectiveness, and efficiency constitute inseparable elements of these three principles. At this stage, rapid advances in information and communication technologies have significantly enhanced the practical applicability of the governance process by providing the infrastructure it requires. In particular, from the 1990s onward, the spread of the internet enabled citizens to reach the state more quickly, resulting in increased democratic participation and greater speed and efficiency in public services.

As digital technologies were subsequently incorporated into governing processes, the concept of e-governance emerged. E-governance is a concept that strengthens mutual relations among stakeholders, as governance draws substantially on information and communication technologies (Palvia & Sharma, 2007). Through the e-governance model, non-state actors were able to assume an active role at every stage, from the determination of public policies to their implementation. In this framework, e-governance enabled non-state policy actors to actively determine and deliver public services through rapid, continuous participation via internet-based networks (Doğan & Ustakara, 2013). Through e-governance, while the aim was to strengthen the principles of transparency, openness, and accountability in public administration, it also became possible for citizens to actively participate in the process of formulating public policies (Bertot et al., 2012). In this way, the multi-actor structure of the governance approach found its counterpart in the digital environment.

In recent years, the growing use of digital technologies across all spheres of life has necessitated further development of the e-governance model, leading to a transition toward digital governance. Digital governance refers to the integration of digital technologies into all processes of public administration (Perez, 2010). Digital governance reflects an institutional commitment by public administration to draw on information and communication technologies, together with its stakeholders, to enhance citizen participation and freedom of expression, safeguard fundamental human rights, support economic development, and deliver public services quickly, fairly, and effectively (Misuraca, 2007). Digital governance aims to actively involve citizens in digital governing processes with the highest effectiveness and the lowest cost (Özer, 2017). In this respect, digital governance entails not merely the use of digital tools in public services, but also, in policy-making processes, the use of digital data obtained from citizens and all segments of society, so that public services are continuously improved through innovative technologies capable of responding to expectations.

Today, citizens are actors who generate data and actively participate in policy processes. For this reason, public administration must adopt a network-based governance approach that operates vertical hierarchical networks through horizontal networks, to generate data, analyze it, and create public value in cooperation with different stakeholders.

The big data generated by digital platforms is analyzed to inform the formulation of public policies and to enable more efficient use of public resources. The AI technologies employed at this stage enable accurate prediction of public policy outcomes by increasing the speed and efficiency of public services, while the fact that digital technologies are independent of time and place contributes to the personalization of public services and the effective use of public resources.

With the digital governance approach, the state has ceased to be the sole determining actor in carrying out public affairs and transactions, and citizens, the private sector, civil society organizations, and digital applications have become important stakeholders. In particular, the development of AI technologies has made these technologies a new actor within governance networks in decision-making and service-delivery processes. The cooperation mechanisms

that developed among the state, the private sector, and civil society organizations for the fulfillment of the principles of public interest and public responsibility have, under the influence of digitalization, turned into a technology-based structure, and in this transformation process, AI has played a major role in shaping managerial processes (Sevinç, 2025).

CAPACITY GAINS AND RISKS PROVIDED BY ARTIFICIAL INTELLIGENCE IN PUBLIC ADMINISTRATION

The integration of AI into public administration has a dual character. On one hand, it offers a powerful tool that enhances managerial capacity and performance; on the other, it creates new risk areas that may undermine the legitimacy and fairness of public action. Wirtz, Weyerer, and Geyer (2019) emphasize that opportunities for applying AI in the public sector must always be assessed alongside the accompanying challenges. For this reason, the role of AI in public administration can be treated neither solely as a promise of efficiency nor merely as a threat; both dimensions must be examined within the same framework. Figure 1 below summarizes this tension along the axis of capacity gains and governance risks.

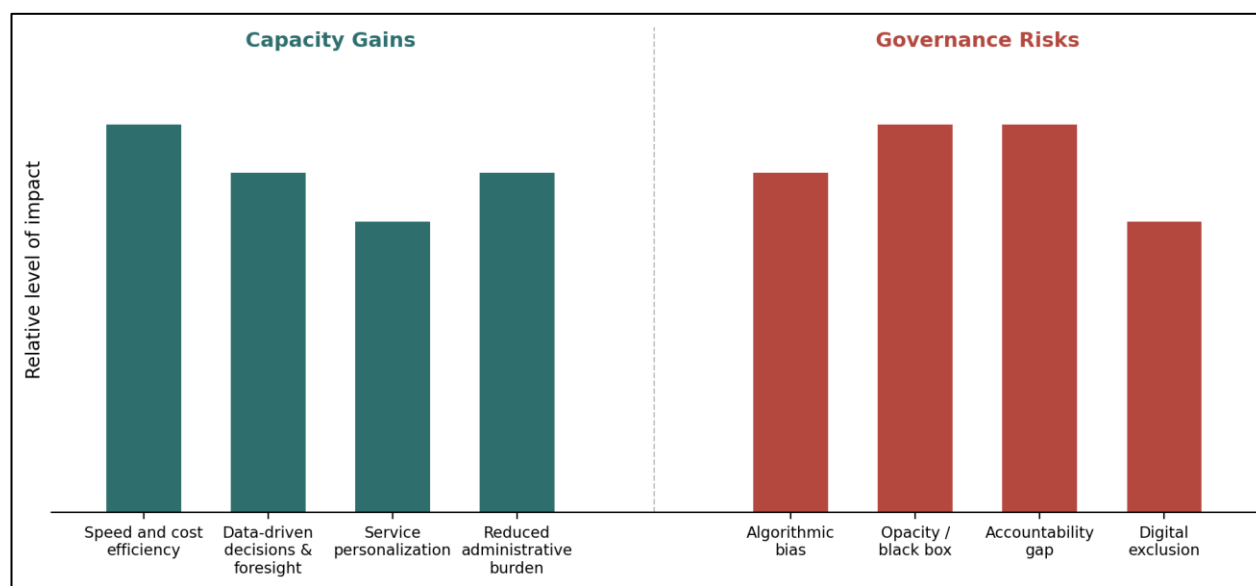


Figure 1: The Tension Between Capacity Gains and Governance Risks in AI-Driven Public Administration.

This is a conceptual summary; the relative levels of impact shown are illustrative and based on discussion in the literature.

Managerial Capacity and Performance Enhancement

The most evident contribution AI offers to public administration is enhancing institutions' capacity to process and analyze large volumes of data and generate meaningful outputs. AI systems can detect complex patterns and weak signals—early indications of emerging change, threats, and opportunities—across multiple and unstructured data sources that are not easily identifiable through traditional methods, thereby increasing the accuracy and timeliness of forecasts (OECD, 2025). This capability strengthens evidence-based policymaking across a wide range of areas, from forecasting macroeconomic and fiscal outcomes to disaster and pandemic management, and from allocating public resources to anticipating policy problems early.

The second dimension of the capacity increase is the acceleration of administrative processes and the reduction of transaction costs. The automation of routine, labor-intensive administrative tasks frees public officials from repetitive duties and allows them to focus on more complex work that requires judgment (OECD, 2025). Avaner and Çelik (2021) note that algorithmic decision-support systems, big-data analytics, and automation tools have the potential to increase the service capacity of public institutions. Similarly, David (2024) shows that the principles governing the integration of AI in public administration focus on improving services delivered to citizens and institutional performance. Still, that final decision-making responsibility must remain with public officials.

Third, AI contributes to the personalization of public services and to the redesign of citizen-state interaction. The time- and place-independent nature of digital technologies increases the accessibility of services and paves the way for proactive, human-centered service-delivery models tailored to citizens' individual needs. Longo (2024) shows that AI shortens response times, reduces costs, and increases consistency across many areas, from the management of freedom-of-information requests to application assessment, and from policy analysis to regulatory-compliance auditing. Similarly, Mergel, Edelmann, and Haug (2019) emphasize that public managers are increasingly expected

to redesign services to increase transparency and access. Table 2 summarizes the main capacity gains that AI provides for public administration, together with their application areas.

Table 2: Capacity Gains Provided by Artificial Intelligence in Public Administration

Capacity Dimension	Contribution Mechanism	Application Area (example)
Analytical capacity	Extraction of patterns and weak signals from big data; predictive analytics	Fiscal forecasting, disaster/pandemic prediction, and early warning
Operational efficiency	Automation of routine transactions; reduction of transaction costs	Document routing, application processing, and call centers
Service personalization	Needs-adapted, proactive, human-centered service design	Personalized notifications, e-government services
Decision support	Generation of evidence and scenarios that inform managerial reasoning	Policy analysis, resource allocation, risk prioritization

Source: Compiled by the authors based on OECD (2025), Wirtz et al. (2019), Avaner and Çelik (2021), and Longo (2024).

However, the realization of these capacity gains is not automatic. OECD (2025) data show that many AI initiatives in public institutions remain stuck at the pilot stage due to the lack of impact-measurement frameworks, widespread skill gaps among public officials, legacy IT infrastructures incompatible with modern AI, and limited budgets. Translating AI's performance potential into reality is, therefore, beyond technological investment; it is a matter of institutional adaptation and capacity. This point brings to the fore the fact that risk areas always accompany capacity gains.

Algorithmic Bias, Opacity, and Accountability Problems

The capacity that AI brings to public administration can deepen existing administrative weaknesses when adopted without adequate institutional safeguards. Foremost among these risks is algorithmic bias. Because algorithmic decision systems largely rely on learning from historical data, they can reproduce past social inequalities and institutional biases (O'Neil, 2016). What matters is not the algorithm itself but the potential bias in the data used: learning algorithms trained on biased data produce biased outcomes. This risk becomes even more pronounced in areas directly affecting fundamental rights, such as social welfare, education, employment, and security. Indeed, a proprietary algorithm widely used in U.S. courts to predict recidivism risk has been shown to produce biased outcomes against Black defendants (Busuioc, 2021).

The second fundamental risk is the opacity of AI systems and the resulting 'black box' problem. Deep learning-based systems, in particular, produce highly accurate results without explaining which variables led to those results (Burrell, 2016). Opacity stems from three main sources: intentional concealment aimed at protecting commercial or state secrets, opacity arising from users' technical illiteracy, and opacity resulting from the inherent complexity of machine learning itself (Burrell, 2016; Floridi et al., 2018). This makes it more difficult to justify administrative decisions that affect citizens and weakens the reviewability that is a natural requirement of the rule of law. Busuioc (2021) argues that the spread of black-box algorithms in the public sector makes it nearly impossible for domain experts and public officials to detect bias and unintended outcomes in system outputs, and therefore contends that transparent and interpretable models should be preferred.

A third and perhaps the most critical problem arising from opacity is the accountability gap (Mittelstadt, 2019). When a decision made through AI produces erroneous, biased, or rights-violating outcomes, it becomes unclear who bears responsibility: the developer who built the system, the party that prepared the dataset, or the public institution that uses the system? This uncertainty fragments the traditional accountability chain and weakens the traceability of public responsibility. Yet responsibility for decisions taken in public administration continues to rest with the administration, even where the system has been procured from the private sector (Smuha, 2025). Within this framework, establishing a traceable accountability architecture in the design of AI systems is essential for preserving societal trust in public institutions and political decision-makers in the long run.

A fourth problem, arising from the interaction between AI-supported systems and human decision-makers, is added to these three risk areas: automation bias. Although human overseers are positioned as an important safeguard against algorithmic bias, empirical findings show that humans may not reliably fulfill this oversight function. Alon-Barkat and Busuioc (2024) demonstrate that public officials tend to uncritically comply with the outputs of automated systems even in the face of warning signs or conflicting information, and that this 'automation bias' may adversely affect already disadvantaged citizens in the context of the automation of the administrative state. Human oversight, when formally mandated, is therefore not enough on its own; for oversight to be genuinely effective, overseers must be equipped with competence, independence, and appropriate incentives (Laux, 2024). Otherwise, the principle of 'human in the loop' risks becoming a symbolic formality rather than a genuine safeguard.

One of the main responses developed against these risks is to guarantee the reviewability and contestability of decisions. Algorithmic audits and impact assessments are vital for detecting discrimination and bias in AI systems (Busuioc, 2021). Similarly, guaranteeing the right to contest decisions based on automated processing that have legal or similarly significant effects on individuals is both an ethical and a legal requirement (Wachter et al., 2017). Table 3 summarizes these three main risk areas together with their sources, public consequences, and possible governance responses.

Table 3: Main Risk Areas of AI-Based Decision Systems and Governance Responses

Risk Area	Main Source	Public Consequence	Governance Response
Algorithmic bias	Inequality and institutional bias embedded in historical data	Discrimination; reproduction of inequality	Data validation, bias audits, impact assessment
Opacity (black box)	Commercial/technical secrecy and model complexity	Difficulty in justification and oversight	Interpretable models, explainable AI
Accountability gap	Fragmentation of the multi-actor responsibility chain	Ambiguity of responsibility; loss of trust	Traceable responsibility, right to contest, human oversight

Source: Compiled based on Burrell (2016), Mittelstadt (2019), Busuioc (2021), Wachter et al. (2017), and Smuha (2025).

In conclusion, the capacity gains provided by AI and the risks that accompany them are not two independent phenomena but two sides of the same coin. Gains in efficiency, speed, and predictive capacity can only translate into public value when accompanied by a governance framework that addresses algorithmic bias, opacity, and accountability problems. This directly heightens the tension between efficiency and legitimacy, as discussed in the following section of the study.

BETWEEN EFFICIENCY AND LEGITIMACY: THE GOVERNANCE PROBLEM

Today, the use of AI and algorithmic systems in public administration has also transformed the way political power is exercised. This transformation reflects a shift from the classical bureaucratic managerial approach toward a data-driven, predictive, and partially automated governance model. It is associated with concepts such as ‘algocracy’ (Polat, 2024), the ‘surveillance society’ (Kaygısız, 2020), the ‘data-issuing state,’ the ‘data-driven state’ (Coşkun, 2025), and ‘algorithmic power’ (Akay, 2025). This shared body of literature points to a new state model with increased capacity for decision-making, classification, oversight, and intervention. At this stage, the state now makes sense of society not only through files, reports, and hierarchical bureaucratic records, but also through continuous data flows, platform data, and algorithmic inferences (Coşkun, 2025).

The algorithmic state refers to a digital state structure in which big data is analyzed through AI in the delivery of public services and in decision-making processes, automated systems are used, and human influence is minimized (Danaher et al., 2017; Neves et al., 2021). While this new model provides speed, efficiency, and coordination effectiveness in public services, it focuses on the technical dimension of public administration and, by disregarding the dimensions related to the exercise of political power, harbors certain problems for democratic regimes.

Throughout history, the formation of social order has largely occurred through oversight mechanisms, institutional constraints, and various forms of compromise shaped by power struggles; these structures have also served to preserve the existing distribution of power (Gençay, 2025). In democratic systems, the legitimacy of political power depends on decisions being taken largely by elected representatives and on those representatives being accountable to the public. The development of AI-based technologies has brought new digital governing tools to the fore, in contrast to traditional forms of authority and regulation. It has revived debates over which instruments produce power, how it is distributed, and by whom it is used.

Democratic legitimacy is directly related to the source of political power, the manner of its use, and its reviewability. The most important feature distinguishing democratic societies from other societies is the oversight of the exercise of authority (Çetin, 2003). For this reason, decisions being taken by algorithm-based systems lead to the oversight element being disregarded and to democratic participation becoming meaningless. Moreover, the digital system thereby established reduces public administration to a domain of technical expertise and transforms it into a model with problems regarding representation, accountability, and transparency—principles regarded as fundamental to democracy.

Because decisions produced by AI-supported systems depend on data-based analyses, they fall within a specialized technical domain. In this situation, decision-making processes become technocratic, the control that elected representatives exercise over the system weakens, and AI designers and data-based algorithms replace political will. Moreover, the ability of algorithmic systems to analyze individual behavior and incorporate this data into political decision processes brings about significant changes in the traditional functioning of politics. According to Harari (2016), the increasing speed and volume of data flows can render traditional political institutions such as elections and parliaments inadequate, causing them to lose their function. At this point, disinformation, deepfake content, and

automated propaganda tools produced by AI-supported algorithms can mislead public opinion and leave electoral processes open to manipulation (Marwala, 2023). Furthermore, the continuous monitoring of citizens, enabled by big data analytics and surveillance technologies, can increase the capacity of states or powerful actors to control social behavior, thereby placing pressure on freedoms and political pluralism (Göz, 2025).

The role of AI technologies in decision-making processes also raises criticisms of ‘technological determinism.’ Zuboff (2019) argues that algorithmic systems weaken human autonomy by reducing bureaucratic decisions to a mechanical process. The digital divide created by differences in access to digital technologies also makes it more difficult for democratic participation to occur on an equal basis. In addition, personalized content algorithms can isolate individuals from differing viewpoints, deepening echo chambers and political polarization, and thereby weakening public debate and social dialogue.

Polat (2024) notes that algorithm-based decision-making systems also have certain shortcomings in terms of transparency, listing these under three headings: intentional concealment due to commercial or state secrecy; opacity arising from technical illiteracy; and opacity stemming from the complexity of machine learning. Burrell (2016) reports that algorithmic decisions frequently carry a black-box character for these reasons, creating uncertainties for both citizens and the public officials responsible for delivering public services. Although algorithmic transparency and related ethical guidelines are being developed today, algorithmic decision-making processes have not been adequately explained to the public, particularly in countries with limited institutional capacity (Akay, 2025).

Another problem arising from transparency concerns accountability (Mittelstadt, 2019). Where a decision made through AI is erroneous or biased, or causes a violation of individual or social rights, it is unclear who will bear responsibility: the software developer? The party that prepared the dataset? Or the public institution or official using the system? In particular, the use of AI systems for which an adequate accountability architecture has not been established can, in the long run, damage societal trust in public administration and, consequently, in political decision-makers.

INSTITUTIONAL CAPACITY AND GOVERNANCE REQUIREMENTS

Achieving digitalization in public administration depends on applying institutional governance principles, establishing global standards, adapting public services to needs, and developing institutional capacity that encompasses all applications. Institutional capacity refers to the ability to effectively manage all the elements needed for the delivery of public services (Polidano, 2000). The stages of AI and digital transformation affect the entirety of these capacity components. The OECD (2026) emphasizes that digital transformation requires, beyond technical infrastructure, strategic leadership and institutional-adaptation capacity within public institutions. At this point, the use of digital technologies in public services makes it imperative for the state to review and develop its institutional capacity.

Algorithmic decision-support systems, big data analytics, and automation tools have the potential to increase the service capacity of public institutions (Avaner & Çelik, 2021). However, a strong institutional-governance infrastructure is essential for these tools to be operated effectively and legitimately (Wirtz et al., 2019). At this point, it would be a mistake to reduce the concept of institutional capacity to a purely technical matter, as it is a multidimensional structure comprising complementary elements, including legal regulations, institutional competence, and accountability mechanisms. The real determinant of the success of digital-transformation processes is not the technology itself but the capacity for inter-institutional coordination and integration. Indeed, the fragmented and competitive structure of the new public management era deepened coordination difficulties among institutions, making coordination, design coherence, and implementation problems inevitable (Özer & Çiftçi, 2023). Nor does the effect of information technologies ever operate directly and deterministically; rather, it manifests itself indirectly through cognitive, organizational, cultural, and political changes. In this context, the digital-governance approach envisions the reintegration of dispersed functions, the establishment of needs-based holistic structures, and the thorough digitalization of administrative processes. The integration of digital tools into public administration must therefore be treated, beyond a purely technical capacity issue, as a structural transformation process aimed at simultaneously strengthening institutional integration, transparency, and a citizen-centered approach to service (Dunleavy et al., 2006b). Realizing this transformation requires a robust legal and regulatory framework, enhanced institutional capacity and coordination, as well as effective mechanisms for transparency and oversight.

Legal and Regulatory Framework

Public administration carries out its decision-making, service-delivery, and oversight activities largely through human labor and bureaucrats. With the process of digital transformation, the increase in data-processing capacity, the development of big data analytics, and the integration of algorithmic systems into managerial processes have

ushered in a new era in how administration operates. While digital transformation contributes to faster, lower-cost delivery of public services, it also raises new questions about the rule of law.

One of the basic functions of public administration is the exercise of public power within the bounds of law and for the public interest. It is therefore necessary that the legal grounds underlying administrative acts be clear, that decisions be subject to review, and that citizens have access to means of seeking their rights (Tanrıverdi, 2023). At this point, because the incorporation of AI systems into decision-making processes can affect how individuals benefit from public services, their position vis-à-vis the administration, and their fundamental rights, the justification and review of decisions, and the determination of legal responsibility gain greater importance. The areas in which AI systems may be used, the decisions that may be made fully automatically, and the rights citizens hold must be determined by legislation (Mutlu & Öncü, 2024). On this matter, the European Union has drafted and enacted the EU AI Act, which provides a general framework for the use of AI. Adopting a risk-based approach, the EU AI Act prohibits certain AI systems and imposes specific conditions on the use of high-risk and general-purpose AI models. It provides for financial penalties against those who violate the obligations it sets out. Although the Act applies, as a rule, within the EU, it does not matter whether providers and distributors are established in an EU country or in a third country (Official Journal of the European Union, 2024; Dönmez, 2025).

An international standardization process concerning the use of AI has also begun. In this regard, ISO/IEC 42001, developed in 2023 as the first standard for AI management systems, offers institutions an ethical, transparent, trustworthy, and risk-based approach to developing, implementing, and managing AI technologies, building a structure based on the principles of policy, process, risk management, and continuous improvement (Şahinaslan, 2026).

Legal uncertainties constitute a risk for both public institutions and citizens. The accuracy, impartiality, and lawfulness of AI-made decisions in public services should be regularly reviewed through internal and independent audits, as well as judicial review (Genaro-Moya et al., 2025). Citizens should likewise have the right to contest the outcomes of AI-made decisions and to request that a human reassess them. This is a natural consequence of the rule of law.

One of the areas where the need for legal regulation is most acutely felt is the protection of personal data. This becomes even more significant given the volume of data held by public institutions (Smuha, 2025). Across OECD countries, 48% of people living in 30 countries do not trust their governments to use their personal data for ‘legitimate purposes’ (OECD, 2026). In public administration, data is a fundamental component of the relationship between the citizen and the state. AI systems learn and produce decisions through data. All the data accumulated in digital registration systems—population records, education information, health data, and the like—constitutes the basic input for AI applications. Citizens have the right to know what information about them is collected, for what purposes it is used, and with whom it is shared. The collection, storage, processing, and sharing of this data must therefore be bound by clear rules, both to protect individual rights and to sustain trust in public institutions.

Another issue that raises legal concerns is digital discrimination. It is a fundamental principle that public administration be equal and fair toward all citizens in the delivery of services, regardless of language, religion, race, color, or gender. The use of algorithmic decision systems in public administration relies largely on learning derived from historical data (Alon-Barkat & Busuioc, 2024). However, past social inequalities and institutional biases risk being reproduced by algorithms (Hildebrandt, 2021; O’Neil, 2016). This risk becomes even more pronounced in areas such as social welfare, education, and security. The ‘AI Whitepaper’ published by the European Commission states that AI-related risks may arise in areas such as freedom of expression, the prohibition of discrimination based on gender, race, religious belief, age, and sexual orientation, and the protection of personal data (European Commission, 2020).

One important dimension of the legal framework is the relationship of responsibility. Responsibility for decisions taken in public administration rests with the administration. The use of digital applications in public administration does not remove this responsibility. Even where public institutions procure the systems they use from the private sector, their legal obligations toward citizens continue. Where an algorithmic decision produces an erroneous outcome, the citizen’s primary counterpart is the public institution (Smuha, 2025). For this reason, the regulations developed in the field of digital governance should focus not on distributing responsibility but on making responsibility traceable.

Institutional Competence and Coordination

With the use of AI systems in public services, public administrations have faced new challenges, including the design and oversight of algorithmic systems, data management, and information sharing with stakeholders. The benefit that

public administration will derive from AI applications is less related to the technological tools it possesses than to the level of institutional competence in using those tools.

The most important feature distinguishing AI systems from traditional information-processing applications is that they learn from continuously changing data and can adapt to new conditions (Russell & Norvig, 2021). Because of these features, merely building the technical infrastructure of AI systems and investing in it is insufficient on its own to ensure their integration into public administration. It is of great importance that institutional operations be reorganized on an AI basis, that the necessary human resources be procured and developed, and that data-management processes be brought under control.

The first component of institutional competence is strategic capacity (Polidano, 2000). Public institutions must determine in advance the purposes for which they will use AI systems, the benefits they expect from these systems, and how they will manage any risks that may arise. Applications implemented without strategic planning often emerge as disconnected, standalone projects, making it more difficult to achieve institutional coherence. Ensuring that AI systems are implemented in a manner consistent with the institution's overall objectives, digital transformation strategies, and public policies is critical to the sustainability of these applications.

With the spread of AI applications, the competency areas that public personnel must possess have also changed. In today's digital age, alongside traditional public administration expertise, skills such as data literacy, digital literacy, and algorithmic awareness have come to the fore (Uslu, 2023). Digital literacy is of great importance so that public officials can interpret the outputs of AI systems, understand the data from which those outputs were produced, and, where necessary, question their accuracy. This also increases the importance of in-service training programs and continuous professional-development activities.

Another dimension of institutional competence in public institutions is data capacity. The performance of AI systems depends largely on the quality of the data used. Data produced by different units within public institutions must be collected, updated, and stored in accordance with a common set of standards. Where data quality is low, the reliability of the outputs produced by algorithmic systems can also decrease.

Another important element related to institutional competence is inter-institutional coordination. The operating principle of AI systems is often not limited to the activity domain of a single institution but is related to information jointly obtained from many public services. This requires regular data-sharing and coordination among public institutions (Gezici, 2023). Strengthening inter-institutional coordination in AI systems also helps develop institutional learning capacity. Increased information-sharing among institutions facilitates the spread of good-practice examples and the development of shared solutions to problems encountered.

Transparency and Oversight Mechanisms

Transparency, one of the fundamental principles of public administration, refers to the public's ability to access the information and documents used by the administration in all its actions and transactions (Kayacı, 2025b). In this respect, transparency in public administration is of considerable importance—for both policymakers and implementers—for securing public trust and strengthening the legitimacy of governing processes (Hood, 2006). The stages through which decisions are made in the operation of public administration, who is authorized to make them, and the legal grounds on which decisions are based are clearly specified in states' legislation (Günday, 2017). With the use of AI-supported decision mechanisms in public services, gaps have also emerged in states' national legislation, and decision-making processes have become more technical and complex. Which data algorithmic decision mechanisms rely on, what algorithmic structures they use, and how they arrive at their outcomes have brought the problem of transparency in public administration to the fore.

The inability to understand or interpret the workings of AI systems is characterized as opacity (Floridi et al., 2018). This opacity rests on three main causes: institutional confidentiality aimed at protecting the rights of system developers, technical limitations, and the algorithmic autonomy peculiar to learning models (Burrell, 2016). Opacity is a major obstacle to explaining the operating principles of AI systems, rendering them a black box. It is not always easy, particularly in deep-learning-based systems, to explain which variables the algorithms relied on to arrive at an outcome. This has significant consequences for public administration, as the justification of administrative decisions affecting citizens is a natural outcome of the rule of law. When the decision-making process becomes entirely invisible, it can make it harder for citizens to pursue avenues to seek their rights and can also adversely affect the administration's accountability.

The complementary element of transparency is accountability. In public administration, accountability refers to the ability of actors exercising public power to account for their activities and, where necessary, to assume responsibility for them (Eryılmaz, 2024). The use of algorithms in public administration does not eliminate the consequences of

decisions; it merely adds new tools to the decision-making process. For this reason, public responsibility continues to apply to the outcomes produced by AI systems used by public institutions (Smuha, 2025). Accordingly, in problems encountered by citizens, primary responsibility rests with the public institution.

Finally, where AI-supported decision mechanisms are used in public administration, these algorithmic systems must be subject to oversight. The accuracy of algorithms, data quality, the risk of producing bias, security vulnerabilities, and performance outcomes should be regularly assessed through multi-layered oversight mechanisms. These assessments should continue not only when the system is established but throughout its period of use, since AI systems can be affected by evolving datasets and can produce different outcomes.

CONCLUSIONS

This study has moved the role of AI in public administration beyond the efficiency axis and framed it as a governance problem. The discussion shows that the capacity gains AI provides in the public sector are undeniable, but that translating this capacity into public value depends on the institutional, legal, and normative framework in which the technology is embedded. AI strengthens analytical capacity, thereby supporting evidence-based policymaking; accelerates administrative processes, thereby lowering transaction costs; and enables the personalization of services. Conversely, when adopted without adequate institutional safeguards, it can deepen risks such as algorithmic bias, opacity, the accountability gap, and digital exclusion, thereby undermining both the legitimacy and the fairness of public action.

The study's core finding is that AI must be understood as a governance issue before it is treated as a purely technical solution. Public institutions cannot rely on innovation alone; they must ensure that technological transformation remains consistent with the principles of democratic governance, legal accountability, inclusiveness, and ethical integrity. Within this framework, the effective and legitimate use of AI requires more than digital infrastructure. It also depends on regulatory capacity, qualified human resources, inter-institutional coordination, transparent governance standards, and mechanisms for public oversight and contestation. The central challenge lies in maintaining a balance across four dimensions: efficiency versus legitimacy, automation versus human oversight, performance versus transparency, and innovation versus equality. Each dimension reflects a distinct governance priority aimed at ensuring that public value is not reduced to technical efficiency.

At the center of this assessment lies the concept of public trust. Robles and Mariano (2025) emphasize that perceptions of AI use—that is, trust—are critical to legitimacy, and that the perception of bias will inevitably damage the perceived legitimacy of public institutions' use of AI. The same study demonstrates that public organizations must be involved from the earliest stages of AI development to minimize algorithmic bias and ensure effective oversight. Trust is therefore not an output that emerges spontaneously at the end of the transformation, but a condition that must be institutionally built from the design stage onward.

This assessment also carries several key practical implications. First, AI applications should be grounded in strategic planning at the institutional level; rather than disconnected pilot projects, sustainable systems consistent with the institution's overall objectives and public policies should be designed. Second, equipping public officials with new competencies, such as data literacy, digital literacy, and algorithmic awareness, is critical to interpreting and questioning system outputs. Third, human oversight must be genuinely effective rather than merely a formal requirement, since the principle of 'human in the loop' becomes non-functional when overseers lack competence and independence (Laux, 2024). Fourth, AI systems should be subjected to regular oversight not only at the moment of their establishment but throughout their period of use, since these systems can be affected by changing datasets and can produce different outcomes over time.

The study has certain limitations. The framework developed here is essentially conceptual and literature-based in character and requires empirical testing across different managerial contexts. Furthermore, given the rapid evolution of AI technologies and regulatory frameworks, it should be borne in mind that the findings reflect a particular point in time. Future studies could conduct comparative analyses across different countries and institutional examples to examine in greater detail how the balance between capacity gains and governance risks is struck in practice.

Ultimately, by removing efficiency from its position as the dominant benchmark, this study offers a governance-oriented perspective on debates over administrative reform, legitimacy, and state capacity. The success of AI in public administration depends on whether states can build institutionally robust, ethically grounded systems that integrate innovation without weakening accountability and public trust. When AI is treated in public administration as a governance responsibility rather than a tool, the way will be opened to respond to technological change while preserving public service and democratic foundations.

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