Artificial Intelligence in Public Administration: A Systematic Review of Governance, Service Delivery, Ethical Issues and Research Directions.

Babangida Baba Daho

Doctoral Research Student (DPA), Department of Public Administration, Bayero University, Kano,

Kano State, Nigeria

ABSTRACT

Artificial Intelligence (AI) is transforming public administration in many ways, improving government decision making, delivering public services, and assisting in digital transformation. While the amount of research in this field is growing rapidly, the body of knowledge is still fragmented across disciplines, making it difficult to have a full picture of what opportunities, challenges, and implications AI poses for public sector organizations. The study examined peer-reviewed publications from 2019 to 2026 to draw insights from recent research on the use of AI in the public sector. The study employs a systematic literature review with critical thematic synthesis to examine the conceptual foundations of AI, its applications in public administration and public service delivery, governance opportunities, ethical and legal issues, institutional challenges, and emerging research directions in investigating the conceptual basis of AI, applications of AI in public service delivery and administration, opportunities resulting from the application of AI in public service, ethical and governance issues, institutional challenges, and new research directions. The review concludes that AI can enhance the efficiency of administration, evidence-based policy making, resource management, and citizen engagement. But the implementation is only possible with a solution to algorithmic bias, transparency, accountability, privacy, cybersecurity, institutional capacity, and public trust that are prevalent. The analysis also uncovers critical gaps in both the literature and the evidence, such as the lack of empirical studies, lack of representation of developing country contexts, and lack of attention to human–AI collaboration and the effectiveness of governance. The research provides a cohesive framework for the fragmented evidence, highlights important research areas, and offers practical and policy guidance to responsible and appropriate utilization of AI in public administration in the context of digital government. This research offers recommendations to researchers, policy-makers and public managers working to promote trusted, ethical, and citizen-centred AI-driven governance.

Keywords: Artificial intelligence, Public administration, Digital government, Public service delivery, AI governance, Administrative decision-making, Ethical AI, Digital transformation.

INTRODUCTION

Artificial Intelligence (AI) is one of the most revolutionary technologies transforming governance and public administration in the twenty first century. Rapid growth in machine learning, NLP, predictive analytics, computer vision, and intelligent automation has revolutionized policy design, public resource management, and the provision of public services for governments. In developed and developing nations, governments and other public institutions are increasingly using AI-based systems to boost administrative efficiency, optimize decision-making, increase citizen involvement and facilitate evidence-based policy making (Wirtz & Müller, 2018; Zuiderwijk, Chen, & Salem, 2021). These technological advancements have furthered the shift from a traditional bureaucratic governance to a public administration that uses technology, where knowledge is gained from data and increasingly used by government. The widespread use of AI is strongly linked to the broader digital government reforms that seek to enhance the effectiveness, responsiveness and transparency of public institutions. In contrast to previous government initiatives where the focus was on digitizing administrative processes, AI empowers government to automate complex decision-making, analyses large and heterogeneous data sets in real time, predict societal trends, detect fraud, optimize resource allocation and personalize public

services (Wirtz & Müller, 2018). As a result, AI has emerged as a valuable strategic solution to some of the long-term administrative challenges, such as higher demands for services, budget limitations, complicated policy landscapes, and citizens' expectations for faster and more convenient government service.

There has been significant academic interest in the use of AI in public administration over the past few years. AI technologies have been adopted in various industries, such as healthcare administration, tax collection, social assistance, immigration, public security, judiciary, environmental management, urban planning and disaster response by governments. The following applications illustrate the potential of AI to lower the operational costs, to better implement policies, to make administrative work more precise and to create more public value (Zuiderwijk et al., 2021). The growing importance of AI has also been supported by national AI strategies and national digital transformation programs that have been signed by many of the nations who want to modernize the public sector governance and enhance public sector institutional capacity. While these are positive trends, AI use in public administration also has a number of ethical, legal, institutional and governance issues. Governmental applications of AI directly affect citizens' rights, their access to public services and the accountability of government. Governmental applications of AI differ from those in the private sector in that they directly impact citizens' rights, access to public services, and the accountability of government. The discussion of algorithmic bias, lack of transparency, explain-ability, protection of privacy, cyber security, human oversight and institutional accountability has been the focus of research in public administration today (Sigfrids, Nieminen, Leikas, & Pikkuaho, 2022). AI systems can have adverse impacts if poorly designed or managed, such as perpetuating inequality, resulting in discriminatory products, detracting from government legitimacy and eroding public trust in government institutions. The worries have fueled worldwide discussions on responsible use of AI, and the creation of regulations and frameworks that can strike a balance between technology and democracy.

The current literature has significantly contributed to the knowledge of the implementation of AI in government bodies. There are existing studies on frameworks for implementing AI (Wirtz & Müller, 2018), governance implications and research priorities (Zuiderwijk et al., 2021), ethical governance mechanisms (Sigfrids et al., 2022), and institutional challenges of integrating AI in public administration (Vatamanu & Tofan, 2025). Taken together, these studies show that AI has great promise for enhancing administrative performance and that it poses serious governance challenges that need to be addressed with a holistic institutional approach. The review draws on peer-reviewed literature published between January 2019 and June 2026 and identifies four broad areas of recurring scholarly attention: AI-enabled public service delivery, governance frameworks, implementation barriers, and ethical and accountability challenges.

However, there are significant knowledge gaps in the current research. First, the existing literature focused on either the technological component or the ethical and regulatory aspect, with a limited number of studies incorporating technological innovation and governance, institutional capacity, and public value in a single analytical framework. Second, empirical evidence is still limited to developed countries, and experiences with the implementation of AI are far less explored in developing countries, especially in Africa. Third, while many studies have focused on opportunities and challenges separately, few have paid due attention to the challenge of critically synthesizing the roles of governance mechanisms that can maximize innovation in the era of artificial intelligence, while at the same time minimizing its ethical and institutional risks. The same review, uploaded, reaches a similar conclusion, with the observation that there is as yet limited attention given in the existing scholarship to governance issues in developing country contexts, and there is scant attention to holistic integration of existing scholarship. The review critically synthesizes the current scholarship by focusing on conceptual development, key application areas, governance opportunities, ethical and institutional issues, and future research trends to understand how AI is transforming public administration. In this context, the review critically summarizes the existing literature on AI in public administration, discussing the conceptual shift, major applications, governance opportunities, ethical and institutional concerns, and emerging research directions that define the field. This paper combines the technological and ethical aspects, as past reviews tended to focus on either technological applications or ethical governance. In particular, the review attempts to explore (i) the development of AI applications in public administration, (ii) the opportunities and governance challenges arising from the use of AI in public administration, (iii) the main gaps in the current research, and

(iv) the future agenda of research that can guide researchers, policy makers, and public managers in their efforts to use AI responsibly, transparently and with accountability in public administration.

REVIEW METHODOLOGY

Review Design and Approach

This study adopts a systematic literature review approach, complemented by critical thematic synthesis, to identify, organize, evaluate and synthesize existing research on the application of Artificial Intelligence (AI) in public administration. The review was designed to move beyond a descriptive summary of previous studies by examining patterns, areas of convergence and divergence, governance implications, ethical concerns, institutional challenges and gaps in the existing body of knowledge. This approach is appropriate for an interdisciplinary and rapidly developing field such as AI in public administration, where research spans public management, digital government, information systems, governance, public policy and artificial intelligence.

The review focused on four broad areas: (i) the development and application of AI in public administration; (ii) the opportunities and governance challenges associated with AI adoption; (iii) ethical, legal, organizational and institutional issues; and (iv) emerging research gaps and future research directions.

Search Strategy and Information Sources

A structured literature search was conducted to identify peer-reviewed journal articles addressing the use of AI in public administration and related public-sector contexts. The search covered publications from January 2019 to June 2026, thereby capturing recent developments in AI-enabled public administration while maintaining a defined temporal scope. Electronic searches were conducted across the following academic databases and publisher platforms:

- Scopus;
- Web of Science;
- Science Direct;
- Springer Link;
- Taylor & Francis Online;
- Wiley Online Library;
- Emerald Insight;
- SAGE Journals; and
- IEEE Xplore.

These sources were selected because they provide interdisciplinary coverage of public administration, public management, digital government, governance, information systems and artificial intelligence. The search was restricted to English-language, peer-reviewed journal articles.

Search Terms and Boolean Operators

The search strategy employed combinations of keywords and Boolean operators relating to artificial intelligence, government, public administration, governance, public services and policy. The principal search combinations were:

1. “Artificial Intelligence” AND “Public Administration”
2. “Artificial Intelligence” AND “Digital Government”
3. “Artificial Intelligence” AND “Public Sector”
4. “Machine Learning” AND “Government”
5. “Artificial Intelligence” AND “Public Service Delivery”
6. “Artificial Intelligence” AND “Governance”
7. “AI” AND “Government Decision-Making”
8. “Artificial Intelligence” AND “Public Policy”

9. "Ethical Artificial Intelligence" AND "Public Administration"
10. "Responsible AI" AND "Government"

The search strategy was supplemented by backward and forward citation tracking of highly cited and relevant publications in order to identify additional studies that might not have been retrieved through the database searches.

Inclusion and Exclusion Criteria

Predefined eligibility criteria were applied to determine which publications were retained for the review. Studies were included when they:

- were published between 2019 and 2026;
- were published in peer-reviewed scholarly journals;
- examined Artificial Intelligence within public administration, digital government, public management or a related public-sector context;
- addressed issues including AI applications, governance, ethics, public service delivery, organizational transformation or policy implications; and
- were available in English.

Studies were excluded when they:

- focused exclusively on AI applications in the private sector;
- were conference abstracts, editorials, book reviews or opinion pieces;
- lacked sufficient methodological or theoretical discussion;
- were duplicate records; or
- were inaccessible in full text.

These criteria were applied consistently during the screening and eligibility assessment stages.

Screening and Study Selection

The retrieved publications were subjected to a three-stage screening process. First, duplicate records were removed. Second, titles and abstracts were screened to determine whether the publications were relevant to AI in public administration and satisfied the broad eligibility requirements. Third, potentially eligible publications were assessed at the full-text stage against the predefined inclusion and exclusion criteria. Only publications satisfying the eligibility requirements were retained for data extraction, coding and thematic synthesis. The selection process therefore provided a structured basis for limiting the review to literature directly relevant to the objectives of the study.

The overall review process followed a sequential procedure of identification, screening, eligibility assessment, data extraction, quality assessment and thematic synthesis. This sequence was used to improve transparency and consistency in the selection and interpretation of the literature. Because the review involved heterogeneous studies across several disciplines and methodological traditions, the final synthesis emphasized thematic comparison and critical interpretation rather than statistical meta-analysis. This is particularly appropriate because your reviewed literature includes different methodological designs, as reflected in your existing data-extraction framework.

Data Extraction and Coding

A standardized data-extraction framework was used to promote consistency in the examination and Comparison of the selected literature. Information extracted from each eligible publication included author(s), publication year, country or geographical region, journal, research objective, research method, AI technology or application examined, public administration domain, major findings, opportunities associated with AI adoption, challenges identified, and research gaps, limitations and future research directions. Research methods were classified, where applicable, as conceptual, qualitative, quantitative, mixed methods, systematic review or case study. AI technologies considered in the coding framework included machine learning, deep learning, natural language processing, predictive analytics, chatbots and expert systems. Public administration

domains included healthcare, taxation, policing, education, justice, smart cities, public finance, environmental management and general public administration.

Quality Assessment

To improve the reliability of the synthesis, the included studies were assessed according to five broad quality dimensions: relevance, methodological quality, theoretical contribution, empirical evidence and practical significance. Relevance concerned the extent to which each study addressed the objectives of the review. Methodological quality considered the clarity and appropriateness of the research design. Theoretical contribution examined the study's contribution to the AI and public administration literature, while empirical evidence considered the strength of the evidence supporting reported findings. Practical significance focused on the implications of the research for governance and public management.
Studies demonstrating stronger theoretical, methodological and practical contributions were given greater emphasis during the synthesis and discussion.

Thematic Synthesis and Analysis

Following data extraction and quality assessment, the literature was organized through thematic coding and critical synthesis. Six overarching themes emerged from the reviewed literature:

1. General knowledge of the principles of Artificial Intelligence in public administration;
2. Applications of Artificial Intelligence in public-sector organizations;
3. AI governance opportunities;
4. Ethical, legal and governance issues;
5. Institutional readiness and implementation challenges; and
6. Future research directions and emerging priorities.

The thematic synthesis involved comparing findings across studies, identifying recurring patterns and areas of disagreement, and examining how AI adoption is associated with changes in governance, public service delivery, decision-making, institutional capacity and public-sector accountability. The approach also enabled the identification of areas where the existing literature remains fragmented or insufficiently developed. The resulting synthesis provides the basis for interpreting the current state of knowledge, identifying research gaps and developing a future research agenda for responsible, transparent and accountable use of Artificial Intelligence in public administration.

Table 1. Characteristics of the Reviewed Literature

Characteristic	***Description***
Publication period	January 2019–June 2026
Document type	Peer-reviewed journal articles
Language	English
Databases/platforms consulted	Scopus, Web of Science, ScienceDirect, SpringerLink, Taylor & Francis Online, Wiley Online Library, Emerald Insight, SAGE Journals and IEEE Xplore
Search approach	Keyword combinations using Boolean operators, supplemented by backward and forward citation tracking
Screening process	Duplicate removal, title/abstract screening and full-text eligibility assessment
Data extraction	Author, year, location, journal, objective, method, AI technology, public administration domain, findings, opportunities, challenges and

	research gaps
Quality assessment	Relevance, methodological quality, theoretical contribution, empirical evidence and practical significance
Analytical approach	Critical thematic synthesis
Major themes	AI applications, governance opportunities, ethical/legal issues, institutional readiness and future research directions

Source: Authors' synthesis of the reviewed literature (2026).

CONCEPTUAL AND THEORETICAL PERSPECTIVES ON ARTIFICIAL INTELLIGENCE IN PUBLIC ADMINISTRATION

Conceptualizing Artificial Intelligence in Public Administration

Artificial Intelligence (AI) is the ability of the computer system to carry out tasks which require human intelligence such as learning, reasoning, problem solving, perception, language understanding and decision making. In the last few years, machine learning, deep learning, natural language processing, computer vision, and predictive analytics have greatly increased the potential of AI to assist with complex business functions in the private and public sectors (Russell & Norvig, 2021). Unlike traditional information systems which are based on preset programming rules, AI systems make continuous improvement in their performance by learning from past data and adapting to new and evolving environments, allowing governments to automate repetitive tasks and discover unknown patterns, thus facilitating evidence-based decision making. In public administration, AI is not just about technological advances; it's about leveraging the power of AI as a governance tool to enhance public service delivery, regulatory compliance, policy-making, and administrative effectiveness. Wirtz and Müller (2018) define AI in public management as a multi-faceted system involving intelligent technologies and organizational processes to improve the management of public services in terms of efficiency, transparency, accountability and citizen-centric governance. Their vision is that AI shouldn't take the place of public servants, but it should support administrative decision-making in very intelligent ways. Likewise, Zuiderwijk et al. (2021) point out that AI is a transformative digital governance technology that can advance the efficiency of government operations and raise huge institutional and ethical questions. These authors argue that the use of AI in government is fundamentally distinct from that of the private sector, as its applications have direct impacts on the accountability of government institutions, social equality, and citizens' rights. The implementation of these will therefore need to seek a balance between technological innovation and transparency, explain-ability, fairness and institutional legitimacy.

As AI becomes more prevalent in government, so has the use of the overarching term "digital government", which focuses on the application of digital technologies within government to be able to change structures, public management practices and citizen-government relations. AI-powered digital government empowers predictive governance, intelligent automation, real-time policy analysis, and personalized public service delivery, in contrast to conventional e-government efforts which were mainly on digitizing administrative procedures. The shift is from the digitization of information to the intelligent governance: algorithms are increasingly used to support administrative planning, the implementation of policies and the optimization of services (Mergel, Edelmann, & Haug, 2019). As the scholarship shows, there are many functions in the public administration that can be applied to AI. These range from predictive analytics for crime prevention, intelligent healthcare management, tax fraud detection, automated welfare administration, smart city management, judicial decision support, immigration control, environmental monitoring, emergency response systems, to citizen service chatbots (Zuiderwijk et al., 2021). The uploaded review also points to predictive analytics, automated service platforms and intelligent decision-support systems as some of the key AI applications that are currently impacting public administration and enhancing public services.

While significant opportunities exist for meeting the goals of good government, scholars throughout the world continually stress that use of AI should be consistent with core principles of public administration such as equity, accountability, transparency, participation, and the rule of law. Sigfrids et al. (2022) state that governments have a particular duty to ensure that AI systems are designed, developed and supervised in an ethical way that respects democratic principles and protects citizens from unforeseen adverse consequences. Thus, it is crucial to recognize that the implementation of AI is not just a technological development, but a governance shift that demands innovative institutional frameworks that combine technological efficiency with public value generation.

Theoretical Perspectives

The swift penetration of AI into the public administration has awakened the interest of a number of theories that account for technology adoption, institutional change and governance reforms. The fast progress of AI into public administration has triggered the interest of several theories that can explain technology adoption, institutional transformation and governance reform. Institutional Theory is one such theory that offers a valuable framework for comprehending the factors driving government adoption of AI technologies. Institutional Theory predicts that efficiency considerations are not the only ones that shape organizations, but that regulatory pressures, professional norms, and societal expectations also play a role (DiMaggio & Powell, 1983). In public administration, governments have started to utilize AI in order to meet international standards in digital governance, to satisfy citizens' expectations and to preserve institutional legitimacy as well as to enhance performance.

Finally, Public Value Theory (Moore, 1995) has gained some traction, arguing that new products and services in the public sector must be considered in terms of their value to citizens and not merely their organizational efficiency. On this view, AI uptake should be judged on its ability to enhance transparency and accountability, improve the quality of service, make services more equitable, build citizen trust, and foster democratic legitimacy. Hence, Public Value Theory represents a suitable lens for judging the impact of AI beyond administrative efficiency, on a broader societal level. The Technology–Organization–Environment (TOE) Framework (Tornatzky & Fleischer, 1990) also provides important insights into the implementation of AI in public organizations. According to TOE, the characteristics of technological innovation are the technological readiness, organizational characteristics, and external environment conditions. Implementing this approach in public administration helps to understand the factors that contribute to the successful implementation of AI, such as the institutional capacity, digital infrastructure, leadership commitment, legal frameworks, financial resources, and stakeholder support. In sum, these theories illustrate that the use of AI in the government cannot be perceived exclusively as a technological phenomenon. Instead, the successful adoption will rely on the interplay of technological capacity, organizational preparedness, institutional governance, regulatory capacity, and the public's confidence. The conceptual basis for discussing applications of AI, opportunities for governance, ethical issues and future research directions, are thus provided in these perspectives.

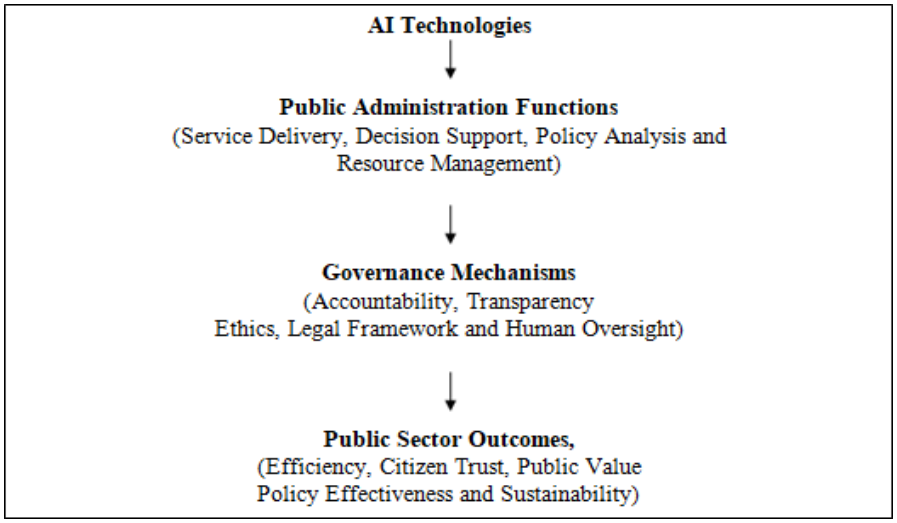


Figure 1. Proposed Conceptual Framework

ARTIFICIAL INTELLIGENCE APPLICATIONS IN PUBLIC ADMINISTRATION

Table 2. Summary of Major Studies Reviewed

hor(s)	Year	Focus Area	Methodology	Key Contribution
Wirtz & Müller	2018	AI in public management	Conceptual	Proposed an integrated AI framework for improving efficiency, transparency, and decision-making.
Mergel, Edelmann & Haug	2019	Digital transformation	Qualitative	Demonstrated how digital transformation supports modernization of government institutions.
Sun & Medaglia	2019	Public healthcare	Case analysis	Identified governance and implementation challenges associated with AI in healthcare.
Zuiderwijk, Chen & Salem	2021	Public governance	Systematic literature review	Developed a research agenda highlighting AI opportunities and governance challenges.
Sigfrids et al.	2022	Ethical governance	Literature review	Proposed ethical principles including transparency, fairness, accountability, and human oversight.
Saxena & Sharma	2023	AI-supported decision-making	Review	Examined algorithmic decision-making and administrative accountability.
Vatamanu et al.	2025	AI implementation	Review	Identified institutional, technological, and regulatory barriers affecting AI adoption.

Source: Authors' compilation from the reviewed literature.

Over the last decade, there has been a tremendous growth in the use of the Artificial Intelligence (AI) in public administration, driven by the need to improve the management efficiency, strengthen evidence-based policymaking and improve the quality of public service delivery. Governments around the world have seen the potential of AI to revolutionize their operations with intelligent automation, predictive analytics, and data-driven decision-making. While information systems can automate pre-programmed administrative processes, AI can process vast amounts of structured and unstructured data, detect intricate patterns, make predictions, and assist in making decisions in uncertain situations (Wirtz & Müller, 2018).

One of the most prominent applications of AI is in public service delivery. The advent of AI-driven chatbots, virtual assistants, and automated customer service systems has revolutionized communication between governments and citizens, enabling real-time access to information and streamlining administrative processes. Government to Citizen communication has been revolutionized by the use of AI-powered chatbots, virtual assistants and automated customer service platforms as these provide real time information and reduce administrative delays. These systems enhance the responsiveness of services by handling simple enquiries and applications, and by redirecting citizens to the right government services, without the need to involve humans. By eliminating routine administrative tasks, public officials can devote more of their time to more complex tasks that demand professional judgement, boosting organizational productivity and enhancing citizens' experiences (Zuiderwijk et al., 2021). The uploaded review also highlights important applications of AI such as chatbots, digital platforms and automated service systems as key drivers of faster service delivery, shorter processing times and increased satisfaction among citizens.

AI is not just about delivering services; it is also a valuable asset in the formulating of public policy and decision-making. Machine learning algorithms and predictive analytics allow governments to analyses a wealth of data that comes from administrative records, demographic surveys, satellite imagery, healthcare systems, and economic indicators. Such analytical tools enable policymakers to predict future trends, assess policy options, understand who is at risk and make informed decisions on the better use of public funds. AI therefore helps to lessen the uncertainty in policy design and moves public administration toward proactive, rather than reactive, management, which helps to create evidence-based governance (Mergel, 2019). But researchers warn that predictive models should be a tool for assisting, not supplanting, human judgment, since human decisions are still based on assumptions about the models and the quality of the data.

Table 3. AI Applications in Public Administration

Application Area	AI Technologies	Public Administration Function	Reported Benefits
Public service delivery	Chatbots, virtual assistants	Citizen services	Faster response time and improved accessibility
Healthcare	Predictive analytics	Disease surveillance and planning	Better resource allocation and early disease detection
Tax administration	Machine learning	Fraud detection	Improved compliance and revenue collection
Public finance	Intelligent analytics	Budget planning	Enhanced financial efficiency
Smart cities	Computer vision, IoT	Traffic and infrastructure management	Improved urban governance
Law enforcement	Predictive analytics	Crime prevention	Better deployment of security resources
Environmental management	AI monitoring systems	Pollution and disaster monitoring	Improved environmental sustainability

Source: Synthesized from the reviewed literature.

AI has also become a significant application area in the healthcare industry in the public sector. AI is increasingly being used by governments to assist in disease surveillance, medical diagnosis, hospital resource allocation, epidemic forecasting and healthcare planning. AI technologies were employed to track the spread of COVID-19, optimize healthcare logistics and aid in emergency decision-making in several countries during the pandemic. These experiences have shown the potential of AI to enhance the efficiency and responsiveness of public health systems and the need for good governance of the data and between agencies (Sun and Medaglia, 2019). In public financial management and revenue administration, AI is becoming more and more used. Machine learning algorithms are used by tax authorities to prevent fraudulent transactions, uncover tax evasion, evaluate financial risks, and enhance tax compliance monitoring. Governments can enhance revenue collection, improve administrative efficiency and use intelligent auditing systems to analyse huge financial information much more efficiently than manual systems. Likewise, in procurement monitoring, AI technologies help governments spot irregularities and uncover corruption risks, and enhance transparency in public expenditure management (Wirtz & Müller, 2018). AI applications have also been expanded to public safety and security administration. Predictive analytics, facial recognition, intelligent surveillance and crime mapping are used by law enforcement agencies to enhance the prevention of crimes, emergency responses and resource efforts. AI is increasingly being incorporated into smart city projects by urban governments, to optimize traffic flows, monitor environmental conditions, coordinate energy consumption and emergency response. These uses have shown many positive operational benefits but also resulted in much debate about privacy protection, civil liberties, surveillance, and accountability of algorithms (Zuiderwijk et al., 2021).

Recent publications suggest that the use of AI has evolved from a niche technological use to a full-fledged digital government transformation. Governments are rethinking their organizational and service delivery structures and decision-making processes based on intelligent technologies, not just automating traditional

administrative processes. This transformation is part of a wider trend towards AI-driven governance, where real-time analytics, automation, and predictive insights become a fundamental part of public governance (Mergel, Edelmann and Haug, 2019). The review also notes that the integration of AI is not just a technological shift but a transformative tool for administrative modernization and governance reform, as the technology is being adopted as a strategic instrument. Yet, all these gains have been accompanied by a consistent message in the literature that the use of AI is not uniform in all countries or sectors. In general, developed countries are technologically more ready, have more capacity, and have more detailed regulatory frameworks than developing countries. For many developing countries, then, the issue of adopting AI remains fraught with difficulties stemming from weak digital infrastructure, low capital resources, lack of technical skills, disorganized regulatory frameworks, and institutional limitations. The submitted review also emphasizes the high level of context dependency in implementing AI, and the continued challenges of infrastructure, institutional readiness, and workforce capacity and cybersecurity in developing countries. The overall literature suggests that AI has become an integral part of modern-day public administration. But its potential can only be realized if institutions are ready, governance is good, legal protection is in place, the organisation is capable and the public trust is maintained. The following parts of this review will focus on the opportunities and ethical issues surrounding the use of AI, building on these broader governance issues.

Table 4 comparison table of opportunities and challenges

Opportunities	Challenges
Improved efficiency	Algorithmic bias
Better decision-making	Lack of transparency
Faster service delivery	Privacy concerns
Predictive analytics	Cybersecurity risks
Resource optimization	Weak institutional capacity
Citizen engagement	Public trust issues

OPPORTUNITIES FOR ARTIFICIAL INTELLIGENCE ADOPTION IN PUBLIC ADMINISTRATION

Artificial Intelligence (AI) is a technology that has the potential to revolutionize public administration, making it more effective in governance, efficient in administration and service delivery focused on the citizens. While previous digital government projects mainly focused on the automation of administrative tasks, AI incorporates the intelligent capability that allows governments to handle complex datasets, derive predictive insights, automate cognitive tasks, and guide strategic decisions. In this light, AI is no longer just considered a new technological invention, but an instrument that can shape the transformation of the public sector and generate public value through the right institutional and governance structures (Wirtz & Müller, 2018). The most common opportunity that has come to be associated with AI is its ability to enhance administrative efficiency and organizational productivity. Public organisations are routinely constrained by limited resources and have to meet rising public demands for quicker, easier and better public services. AI-driven automation saves time on repetitive administrative tasks, reduces human error, and optimizes organizational processes. Intelligent systems can handle applications, check documents, book appointments, review administrative documents, and create reports faster and with higher accuracy than traditional manual methods. This means that governments have the opportunity to use human resources for more value-added activities like policy analysis, strategic planning, and citizen engagement (Wirtz & Müller, 2018).

AI's role in evidence-based decision-making is another aspect that is closely related to administrative efficiency. Governments collect vast amounts of administrative, financial, demographic, environmental and social data that often is not used for the best because of the lack of traditional analytical methods. By leveraging machine learning algorithms, public organizations can uncover valuable insights from these data sets, such as discovering hidden patterns, predicting future trends, and aiding in predictive policy analysis. These capabilities build governmental capability to proactively plan for new issues, to make optimal use of limited resources and to assess policy options based on real-time evidence in addition to experience or intuition (Zuiderwijk et al., 2021). The uploaded review also states that AI can help governments handle vast amounts of data more efficiently, which can facilitate the creation of policies on time and enhance government decision-making. AI can also bring significant benefits to the table in terms of enhancing the efficiency and satisfaction of public services and citizens. Intelligent digital platforms enable constant feedback and interaction between governments and citizens via chatbots, virtual assistants, automated complaint management and individual service portals. Such technologies shorten waiting times, make services more accessible, and allow Governments to offer services outside of traditional office hours. In addition, AI can enhance service personalization by leveraging citizens' requirements and preferences, helping governments to create more responsive and citizen-centric services. These innovations can enhance the responsiveness of governments and strengthen citizens' trust, if they take place transparently and responsibly, to improve government responsiveness, as stated by Zuiderwijk et al. (2021).

Another vital opportunity is the optimization of the management of public resources. A fundamental constraint faced by governments, regardless of their level of development, is fiscal constraints, which can limit administrative capacity, especially in the developing world where financial resources are limited. AI-powered predictive analytics can help public managers predict spending trends, uncover inefficiencies, root out fraud, streamline procurement, and boost financial transparency. Smart budgeting and resource allocation frameworks can help inform evidence-based investment decisions and reduce waste and enhance the effectiveness of government operations. These are important for sustainable public financial management and value for public expenditure (VPE) (Sun & Medaglia, 2019). AI also plays a role in policy innovation and strategic governance, and helps governments be more proactive in their approach to public administration. The models for predictive risk assessment can anticipate social-economic risks, track changes in the environment, forecast disease outbreaks, predict infrastructure needs and inform disaster preparedness. Instead of waiting for a crisis to happen, governments can use AI-generated insights to create interventions that can help prevent the crisis from occurring in the first place, thus minimizing long-term social and economic costs. This shift from reactive administration to anticipatory governance is one of the greatest contributions of AI in the modern public management (Mergel et al., 2019).

In the context of strong governance structures, AI is also a tool that can enhance transparency and accountability. Automated auditing systems, anomaly detection algorithms, and intelligent monitoring tools have improved the governments' capabilities in detecting financial irregularity, detecting financial risks of corruption, monitoring regulatory compliance, and improving institutional monitoring. AI can help enhance the precision and timeliness of these administrative data, leading to greater transparency in decision-making processes and boosting public trust in government institutions. It is important to acknowledge, however, that these benefits rely on clear algorithmic design, suitable oversight from humans, and robust accountability systems (Sigfrids et al., 2022). While the vast majority of literature recognizes the opportunities that AI affords, there is also scholarship that reminds readers that these opportunities are not guaranteed. Technology is not enough to ensure better governance outcomes. Rather, the benefits of AI will only come to fruition with the support of complementary investments in institutional capacity, digital infrastructure, digital workforce skills, legal and regulatory frameworks, ethical governance and stakeholder engagement. The uploaded review also suggests that while AI has significant promise for enhancing the efficiency, effectiveness, and participation of citizens, it requires responsible governance, ongoing monitoring, and adequate institutional readiness for optimal outcomes. To sum up, the current body of research shows that AI has the potential to revolutionize public administration in many ways, such as increasing efficiency, improving evidence-based policymaking, improving public service delivery, optimizing resource allocation, and facilitating strategic governance. However, these opportunities come with high expectations for ethical, legal and institutional issues that must also be addressed in a sophisticated manner. Therefore, it is important to have a better

understanding of the risks involved when using AI in the public sector, in order to create a balanced and sustainable public sector innovation strategy.

ETHICAL, LEGAL, AND GOVERNANCE CHALLENGES OF ARTIFICIAL INTELLIGENCE IN PUBLIC ADMINISTRATION

Artificial Intelligence (AI) offers great opportunities, but these have raised serious ethical, legal and governance issues in public administration. The implementation of AI systems in government environments has a direct impact on the implementation of public policies, decision-making processes, allocation of resources and citizens' access to critical public services, unlike in the private sector. This can have adverse consequences for democratic accountability, trust in the public and institutional legitimacy if AI governance is not successful. The literature increasingly also addresses these non-technological aspects of the success of AI adoption, such as the ability of governments to provide robust governance over AI systems, ensuring transparency, fairness, accountability, and respect for fundamental rights as enshrined in international law (Sigfrids et al., 2022; Zuiderwijk et al., 2021).

Algorithm bias and discrimination is one of the most talked about issues. When the datasets that AI systems are trained on include social, economic or institutional biases, the algorithms created by these systems can replicate and sometimes exacerbate those biases. In public administration, biased algorithms can influence whether someone is hired for a job, whether they receive welfare benefits, how police officers are deployed, the risk of deportation to foreigners, and in the judicial system, whether someone is referred for execution. In the public administration sector, biased algorithms can influence hiring for a position, who gets welfare benefits, police deployment, risk assessment for foreigners for deportation, and in the judicial system, referrals for execution. This is a negative consequence of the injustice and inequality that are the foundations of democratic governance. To reduce discriminatory outcomes, scholars suggest that governments need to establish strict data governance and have regular algorithmic audits and fairness evaluations across the AI life cycle (Sun & Medaglia, 2019). The uploaded review also highlights algorithmic bias as one of the biggest ethical concerns with AI use, noting how biased datasets can contribute to inequality and negatively impact equitable service delivery.

This is closely related to algorithmic bias, but also keeping transparency and explain-ability in mind. For many advanced AI models especially those using deep learning it’s hard to understand how they make their decisions, making them a "black-box" system. These systems can be very predictive, yet not so explainable. They present significant challenges for public administration, where decisions must be made often with explanations to citizens, judges, oversight institutions, and elected officials. If the reason behind an AI's recommendation is not disclosed, it can diminish administrative legitimacy and public trust in decisions made by governments. As a result, there is a call for the adoption of explainable AI (XAI) methods that could help public officials and citizens to comprehend the reasoning behind algorithmic decisions (Wirtz & Müller, 2018; Sigfrids et al., 2022).

Table 4. Ethical and Governance Issues Identified in the Literature

Issue	Description	Governance Implication
Algorithmic bias	AI may reproduce discriminatory outcomes from biased datasets	Requires fairness testing and algorithm auditing
Transparency	Black-box algorithms reduce explain-ability	Adoption of explainable AI (XAI)
Accountability	Difficulty assigning responsibility for AI-assisted decisions	Clear legal and institutional accountability mechanisms
Privacy	Extensive use of citizens' personal data	Strong data protection regulations
Cybersecurity	AI systems vulnerable to cyber attacks	Secure digital infrastructure and continuous monitoring
Human	Excessive automation may weaken	Human-in-the-loop decision-making

oversight	professional judgement	

Source: Authors' synthesis of the reviewed studies.

Accreditation and responsibility are also big issues in governance. In the traditional public administration, responsibility for administrative decisions is attributed to identifiable public officials in a clear framework of law and institutions. But, if AI systems make or inform government decisions or are used to make them, responsibility for bad or wrong decisions is much harder to establish. The question is, should it be the responsibility of the software developers, data scientists, public managers, government bodies or political leaders responsible for the implementation of AI, to take accountability? In order to achieve a good governance of AI, accountability mechanisms and structures must be well defined to allow for a human oversight of AI systems but without placing a complete trust in the machine, argues Zuiderwijk et al. (2021). Data privacy and protection are other issues that arise when it comes to implementing AI in government. To make accurate predictions and to make intelligent decisions, AI systems rely on a vast amount of personal, administrative, financial, health and behavioral data. These data offer an improved efficiency in governing, but at the same time can lead to unauthorized access to the data, misuse, surveillance, violation of citizens' privacy rights. Balancing data-driven innovation with laws and regulations on confidentiality, informed consent and protection of personal data is therefore a challenge for governments. The submitted review also echoes this point, stating that safeguarding citizens' privacy continues to be one of the key governance aspects of responsible use of AI in public administration. With the rise of AI comes concerns about cybersecurity and systems' resiliency. Government AI platforms frequently handle highly sensitive national data that can be a tempting target for cyber-attacks, data manipulation, ransomware and other malicious activities. A corrupted AI can be used to give false recommendations, interfere with critical public services or reveal sensitive government data. This makes it clear that cybersecurity must be viewed as a critical part of AI governance, not just a support service. To ensure the effective regulation of AI, organizations need to regularly assess risks, have robust digital infrastructure, conduct frequent audits of their systems, and establish comprehensive incident response plans (Mergel et al., 2019). In addition to technical issues, there are organizational and institutional considerations that must be addressed when implementing AI. A lack of skilled AI professionals, poor digital infrastructure, a lack of legal structures, a lack of funding, and the resistance to change within organizations are still prevalent in many public organizations. In developing countries, the limitations and restrictions of institutional capacity are especially apparent, impacting the adoption and scaling of AI technologies. The uploaded review also highlights workforce readiness, inadequate institutional capacity, infrastructure needs, and regulatory constraints as significant obstacles to governments maximising the benefits of AI in public administration.

A second, emerging issue has to do with public trust and democratic legitimacy. Government decisions supported by AI are more likely to be accepted by the citizens if they believe in the fairness, transparency, and accountability of administrative procedures. On the other hand, if people think that algorithms are opaque, or that they are being monitored too much, or that decisions made by algorithms are biased, this can lower their trust in public institutions, and lower the legitimacy of democracy. Public trust is thus considered as a by-product of good AI governance and a key condition for the sustainability of AI governance. Sigfrids et al. (2022) suggest that participatory governance models by incorporating citizens, civil society organizations and independent oversight bodies in AI design, implementation and assessment can improve transparency and public trust in AI systems. As a whole, the literature shows that ethical, legal and governance issues are not secondary problems that come after implementing AI, but instead are integral components of successful implementation. Without the right governance advancements, technological innovation can only continue to go further and further to the detriment of the goals that AI is trying to meet. As such, governments need to establish holistic governance structures that incorporate ethical considerations, regulation, institutional accountability, human-centred design, and an ongoing monitoring mechanism during the process of implementing AI. Such awareness has turned the focus of research and scholarship from the question of governments' adoption of AI to that of responsible control of AI to create public benefit and minimize public risks.

CRITICAL ANALYSIS OF EXISTING LITERATURE AND RESEARCH GAPS

The current literature shows that AI is already having a significant impact on the transformation of public administration, thereby enhancing governance, administrative efficiency and public service delivery. Although there has been a surge of interest in the field, the existing knowledge base is still disjointed and studies are widely divergent in their conceptual, methodological and contextual scope. Based on a critical review of the literature, the following gaps are identified which need to be addressed by future research. Based on the A systematic literature review and critical thematic synthesis, the following gaps are identified and require further attention in research: A major feature of the body of literature is the extent to which the benefits of AI adoption are emphasised. Wirtz and Müller (2018) created an integrated framework that shows how AI can increase efficiency, transparency, accountability and decision making in the public management. Their conceptual model is a valuable theoretical basis for understanding the process of government adoption of AI. However, it is a largely theoretical framework with limited empirical evidence on its application to different administrative scenarios. However, doubts remain about the feasibility of implementation of the proposed framework in countries with different institutional capacities and governance systems. Likewise, Zuiderwijk, Chen, and Salem (2021) give a detailed overview of the use of AI tools in public governance and highlight transparency, accountability, and citizen trust as key topics for future research. Their review is an important research agenda, but it has also identified that much of the evidence base comes from technologically advanced countries. The geographical concentration reduces the generalizability of what is known at present, since public institutions in developing countries are likely to be characterized by different political, economic, technological and institutional features. This has left a lack of understanding about the influence of contextual factors in implementing AI in resource-limited public sectors. Additionally, there is growing awareness of the moral dimensions of using AI, as shown in the literature. Sigfrids et al. (2022) state that the ethical governance should be the basis for the implementation of AI in public administration. Their review underscores key principles of responsible governance of AI, including transparency, fairness, accountability, human oversight, and respect for citizens' rights. These ethical principles are generally agreed upon but little empirical research has been conducted on the way governments apply these principles in practice. Most studies are still of a normative type, rather than assessing the practical effectiveness of the principles of governance within public organizations.

The study of AI-supported decision-making has also grown significantly. AI presents a significant potential to enhance administrative decision-making, but also carries risks of algorithmic bias, lack of transparency, and accountability concerns, as highlighted by Saxena and Sharma (2023). Their analysis highlights the importance of explainable AI systems that can help with administrative decisions without compromising democratic legitimacy. Yet, current literature does not explore the relationship between public officials and the generated recommendations nor the role of human judgment in the decision-making process with AI assistance. This is a significant gap as the use of AI in government broadly would complement, not supplant, human decision makers. Over the past few years, the barriers to implementing AI in institutions have been a focus of research. Major challenges to the integration of AI into public administration, as identified by Vatamanu et al. (2025), include workforce readiness, cyber security risks, poor digital infrastructure, lack of funding, and institutional capacity. The results of these findings suggest that technological innovation is not sufficient to ensure successful implementation without the accompanying organizational changes and/or institutional investments. However, many of the existing studies focus on individual barriers without considering their interplay and how it impacts AI adoption outcomes. Future studies should thus incorporate more holistic analytical frameworks that can capture the interactions between all these factors: institutional capacity, governance quality, technological readiness and implementation outcomes.

Another restriction relates to the methodological approach of the literature. As in the reviewed studies, conceptual papers, SLR and theoretical discussions outnumber empirical investigations as observed throughout the reviewed studies. Conceptual studies have contributed to the understanding of the theory on AI adoption, however, there are limited longitudinal studies, cross-country comparison, mixed methods and quantitative studies to assess the long-term effects of AI adoption on administrative performance, public trust, organizational effectiveness and policy outcomes. This disparity hinders researchers and policymakers from assessing the real-world implications of deploying AI in various governance frameworks. The review also

finds that there is an obvious imbalance between the literature available across the region. The majority of the available literature is from North America and Europe and selected Asian counties in which digital government initiatives are well established. While there has been growing interest among governments in the use of AI for governance, significantly less focus has been placed on Africa and other developing regions. Important aspects that have not yet been sufficiently discussed are related to the digital infrastructure, institutional readiness, legal capacity, ethical governance, the capacity-building of the workforce and citizen acceptance in this context. Such geographical imbalance would be an important area for future comparative studies.

The literature examined shows that, in general, AI has a tremendous potential to revolutionize public administration, and at the same time, to present complex challenges of governance. But current scholarship is still fragmented, with insufficient empirical testing, spatial focus, and technological innovation and institutional governance. Overcoming these barriers will enhance the theory and better support the practice of governments aiming to responsibly and sustainably use AI.

Table 5. Research Gaps and Future Research Agenda

Research Gap	Current Evidence	Recommended Future Research
Limited empirical studies	Most studies are conceptual or review-based	Longitudinal and mixed-methods studies
Regional imbalance	Literature dominated by developed countries	Studies focusing on Africa and other developing regions
Human–AI collaboration	Limited understanding of interactions between AI and public officials	Behavioral and organizational studies
Governance effectiveness	Few evaluations of governance frameworks	Comparative assessments of AI governance models
Citizen trust	Limited empirical evidence on public acceptance	Surveys and experiments on trust, legitimacy, and adoption
Organizational readiness	Fragmented evidence	Integrated studies examining institutional capacity, leadership, and digital infrastructure

Source: Developed from the critical synthesis of the reviewed literature.

PRACTICAL IMPLICATIONS FOR PUBLIC ADMINISTRATION

The results of this review show that Artificial Intelligence (AI) has great practical relevance for governments, public managers, policy makers and public sector organizations. While the adoption of AI technologies is increasing, attention should now focus on their effective implementation and governance, as this will help governments enhance administrative processes and improve public services. Case studies reviewed demonstrated that AI, when applied in a proper institutional and ethical framework, can indeed positively impact administrative efficiency, facilitate evidence-based policymaking, optimize resource allocation and foster citizen engagement. But these benefits rely on effective digital infrastructure, qualified human resources, law and order, and preparedness of the organization. AI is not meant to replace human intelligence in decision-making; rather, it is intended to complement it as a decision support system for public managers. While AI can help with certain aspects of decision-making, human involvement is still crucial to guarantee transparency, accountability, and adherence to public administration principles. The government should encourage the development of a skilled workforce through ongoing AI literacy, data governance, digital ethics, and algorithmic accountability training. These investments will enhance the readiness of organizations and support responsible management of AI-systems by the public sector. Institutional cooperation between Government, academia, civil society and private sector technology companies is also underlined in this review. Collaborative governance can help to share knowledge, develop regulations and foster innovation while still maintaining the alignment of AI deployment with public values. Finally, it is essential to strike a balance

between technology and democracy to realize the public value of administrative modernization and create public value in a sustainable manner.

POLICY IMPLICATIONS

Governments need to create national AI strategies that are comprehensive, offering a framework to properly integrate technology innovation with ethical governance, legal accountability and institutional capacity building, the reviewed literature suggests. National AI policies should clearly define standards for transparency, explain-ability, fairness, data protection, cybersecurity, and human oversight in public administration. Governments should also create regulatory frameworks that are able to track AI systems across their lifecycle. Independent oversight mechanisms should be established to assess the fairness of the algorithms, identify discriminatory outcomes, and ensure compliance with legal and ethical requirements. Such regulatory measures will enhance the trust of public towards these systems and ensure fewer risks stemming from automated decision making. A second key policy priority is investment in digital infrastructure. Even though there have been strides in AI, public institutions, especially in developing nations, continue to face infrastructure gaps that hinder implementation. Policymakers should thus focus on investments in secure digital platforms, cloud computing, interoperable government databases and cyber security equipment able to serve to intelligent public administration. In addition, governments should foster interdisciplinary research and collaborations between universities, research institutions, technology companies, and public institutions. This partnership will help inspire innovation and contribute to evidence-based policy-making and stewardship of AI governance. These policy measures will enable governments to build their capabilities to leverage AI to drive sustainable public sector change.

THEORETICAL CONTRIBUTIONS

The review adds to the body of literature on AI application in public administration in the following significant ways. First, it synthesizes disjointed research into a cohesive and integrated framework that connects AI technologies to governance outcomes, organizational transformation and public value creation. The review does not look at technological innovation alone, but instead illustrates how implementing AI requires the interplay of technological capability, institutional readiness, ethical governance, and public trust. Second, the review builds on the application of the three theoretical perspectives of Institutional Theory, Public Value Theory and Digital Government in explaining AI adoption in public organizations, thus extending the application of these three theories. Second, it extends the application of the three theoretical perspectives, Institutional Theory, Public Value Theory and Digital Government perspective, by showing how these three theories together explain the adoption of AI in public organizations. The integrated approach gives a more comprehensive theoretical understanding of the implementation of AI than studies based on one theory alone. Third, the review pinpoints key theoretical gaps on human–AI collaboration, institutional readiness, and responsible AI governance. The gaps offer potential for future theoretical elaboration and empirical research. Hence, the review does not just synthesize existing knowledge, but also suggests directions for future development of the theory for the field of AI-enabled public administration.

THE SCOPE OF THE REVIEW

The review has some limitations that need to be taken into account when interpreting its findings. First, the review is limited to peer-reviewed journal articles written in English and not includes studies in other languages and/or in other forms of grey literature. Secondly, AI is an emerging field and new studies might arise after the review period that furtherance existing knowledge. Thirdly, existing literature is mainly conceptual and exploratory, with limited empirical evidence on the impacts of AI adoption on the organizations and societies in the long term. Last but not least, the geographical imbalance in the literature is found, with the majority of the studies coming from developed nations. Thus, the results may not be representative of the institutional situation and implementation problems in developing countries. Future reviews should therefore expand the geographic scope, include more empirical evidence, and look at comparative analysis across various governance contexts to enhance the generalizability of the conclusions in this review.

FUTURE RESEARCH AGENDA

Artificial Intelligence (AI) is a rapidly developing technology that could revolutionize the way public administration works. Artificial Intelligence (AI) is an emerging area of technology that has the potential to change the face of public administration in ways never before seen. Nevertheless, a critical review of the available literature reveals that there are some important research areas that are not sufficiently covered. More empirical, comparative, and interdisciplinary research, which could provide a basis for responsible implementation of AI in public institutions, is needed in the future. A first priority lies with the creation of context-specific frameworks for the governance of AI. Previous research has mainly focused on principles of universal governance based on transparency, accountability, fairness, and ethical responsibility (Sigfrids et al., 2022). The principles are given a normative basis, but further studies are needed on the adaptation of governance frameworks in other administrative, political, legal, and socio-economic settings. Comparative analyses of AI governance in developed and developing countries would yield important evidence about the conditions for enabling or inhibiting responsible AI adoption, institutionally. It would also be useful in designing governance models that actualize the diversity of public administration systems and are not based on the assumption of uniform institutions.

Another significant research area is empirical study of outcomes of the implementation of AI. While the majority of the literature reviewed is in the form of conceptual models, systematic reviews and normative analyses, few studies address the actual impact of AI on administrative performance, service quality, organizational effectiveness, and citizen satisfaction. There is a need for future studies to use quantitative, qualitative, and mixed-methods approaches to determine whether the use of AI brings measurable efficiencies, transparency, accountability, and effectiveness in policy. Longitudinal research designs would be especially valuable in the context of understanding how the use of AI affects organizational performance over time. The literature also emphasizes the importance of further consideration of human–AI collaboration in public administration. Previous research tends to focus on the capabilities of AI tools and offers little discussion of the interactions between public officials and AI-enabled decision-making tools. Future studies could explore how human decision making, professional knowledge and organizational experience can be combined with algorithmic suggestions in administrative decision making. This kind of research would help to understand the right mix between automated and human decision-making and contribute to the creation of AI systems that augment and do not supplant professional public administration. Further growth is needed in the research on institutional readiness and organizational capacity. While a number of studies have identified workforce readiness, digital infrastructure, cybersecurity, financial resources, and institutional capacity as important barriers to implementation, the literature tends to focus on one of these aspects at a time. Integrated analytical frameworks which can account for the interaction between technological readiness, organizational capability, leadership commitment, regulatory quality and institutional performance are needed in future investigations. This type of evidence would help governments develop comprehensive implementation strategies that deal with multiple barriers instead of isolated barriers.

Ethical government and public trust are another priority. Transparency, Accountability, Fairness, and Explain-ability have been recognized as fundamental values of responsible AI, however, there is a lack of empirical studies that consider citizens' perceptions regarding AI-powered public services. Future research is thus needed to more systematically explore the factors that influence citizen trust, the acceptability of citizens, perceived fairness, and institutional legitimacy of AI-supported governance. This knowledge will be crucial in shaping governance frameworks that can foster responsible innovation while ensuring accountability in a democratic manner. The review also shows that there is a significant research gap in the development countries, especially Africa. Despite the rising government interest in AI in emerging economies, scholarship continues to be focused in advanced technologized economies. Issues of digital infrastructure, legal preparedness, institutional capacity, workforce development, financial sustainability, and regulatory effectiveness in developing country settings should be explored in future research. The comparative evidence from these settings would greatly facilitate the global understanding of the implementation of AI and in the field of public administration, contribute to more inclusive public administration scholarship.

Finally, future research on the scholarship should have a more interdisciplinary research perspective, combining elements from public administration, information systems, computer science, law, ethics, political science and public policy. The implementation of AI in government is always interdisciplinary, and the multifaceted governance challenges that need to be overcome can only be solved with collaboration across disciplines. This interdisciplinary research will help develop more comprehensive frameworks that can address technological innovation and its ethical responsibilities, institutional accountability, and the creation of sustainable public value. To conclude, empirical evidence, comparative approaches and interdisciplinary research and cooperation and context sensitive governance models should be promoted. Focusing on these priorities will advance the theoretical foundation and practical use of AI in public administration, and assist governments in realizing citizen-centred, responsible and transparent digital transformation.

Table 6 literature synthesis

Author(s)	Theme	Method	Main Findings	Limitation
Wirtz & Müller (2018)	AI framework	Conceptual	AI improves efficiency and decision-making	Limited empirical validation
Zuiderwijk et al. (2021)	Public governance	Systematic review	AI enhances governance but raises accountability issues	Limited evidence from developing countries
Sigfrids et al. (2022)	Ethics	Literature review	Responsible AI requires transparency and human oversight	Few implementation studies
Saxena & Sharma (2023)	Decision-making	Review	AI supports administrative decisions	Limited discussion of human–AI collaboration
Vatamanu et al. (2025)	Institutional readiness	Review	Infrastructure and regulation remain major barriers	Limited comparative analysis

LIMITATIONS OF THE REVIEW

This review has several limitations that should be considered when interpreting its findings. First, the search was restricted to English-language peer-reviewed journal articles and therefore may not have captured relevant studies published in other languages or in other forms of scholarly and professional literature. Second, although multiple major academic databases and publisher platforms were searched, no database search can guarantee complete coverage of all relevant publications. Third, the reviewed literature is methodologically and contextually heterogeneous, making direct comparison across studies challenging. Finally, the rapid evolution of Artificial Intelligence means that new technologies, applications, regulatory developments and governance concerns may continue to emerge after the completion of the search period. These limitations do not invalidate the findings but should be considered when interpreting the synthesis and applying its conclusions to different public-sector contexts.

REFERENCES

1. DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160.
2. Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly, 36*(4), 101385. https://doi.org/10.1016/j.giq.2019.06.002
3. Moore, M. H. (1995). *Creating public value: Strategic management in government*. Harvard University Press.
4. Russell, S., & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed.). Pearson.
5. Saxena, A., & Sharma, R. (2023). *AI-driven decision-making in government. (As cited in the uploaded review).*

6. Sigfrids, A., Nieminen, M., Leikas, J., & Pikkuaho, P. (2022). How should public administrations foster the ethical development and use of artificial intelligence? A review of proposals for developing governance of AI. *Frontiers in Human Dynamics, 4*, 858108. https://doi.org/10.3389/fhumd.2022.858108
7. Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039
8. Sun, T. Q., & Medaglia, R. (2019). Mapping the challenges of Artificial Intelligence in the public sector: Evidence from public healthcare. *Government Information Quarterly, 36*(2), 368–383. https://doi.org/10.1016/j.giq.2018.09.008
9. Vatamanu, A. F., & Tofan, M. (2025). *Integrating artificial intelligence into public administration: Challenges and vulnerabilities*. *Administrative Sciences, 15*(4), 149.
10. framework for public management. *Public Management Review, 21*(7), 1076–1100. https://doi.org/10.1080/14719037.2018.1549268
11. Zuiderwijk, A., Chen, Y.-C., & Salem, F. (2021). Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda. *Government Information Quarterly, 38*(3), 101577. https://doi.org/10.1016/j.giq.2021.101577

APPENDIX

Appendix A. Literature Search Strategy

A literature search was carried out to find peer-reviewed journal articles that studied the use of Artificial Intelligence (AI) in public administration. Electronic searching of main academic databases (Scopus, Web of Science, ScienceDirect, SpringerLink, Taylor & Francis Online, Wiley Online Library, Emerald Insight, SAGE Journals and IEEE Xplore) was conducted. They were chosen as the database sources since they cover high-quality interdisciplinary research on public administration, information systems, governance, digital government and artificial intelligence. The search covered studies published between **January 2019 and June 2026** to capture recent developments in AI-enabled public administration. Searches were limited to articles published in English and appearing in peer-reviewed academic journals. The following search strings and Boolean operators were used individually and in combination:

- "Artificial Intelligence" AND "Public Administration"
- "Artificial Intelligence" AND "Digital Government"
- "Artificial Intelligence" AND "Public Sector"
- "Machine Learning" AND "Government"
- "Artificial Intelligence" AND "Public Service Delivery"
- "Artificial Intelligence" AND "Governance"
- "AI" AND "Government Decision-Making"
- "Artificial Intelligence" AND "Public Policy"
- "Ethical Artificial Intelligence" AND "Public Administration"
- "Responsible AI" AND "Government"

Additional articles were identified through backward and forward citation tracking of highly cited publications.

Appendix B. Article Selection Criteria

Inclusion Criteria

Studies were included if they:

- The publications from 2019 to 2026 were;
- has been published in peer-reviewed scholarly journals;
- Studied Artificial Intelligence in public administration, digital government, public management or a public-sector related context;

- They covered subjects including applications of AI, governance, ethics, public service delivery, organizational transformation or policy implications; and were available in English.

Exclusion Criteria

- Studies were excluded if they:
- focused exclusively on private-sector AI applications;
- were conference abstracts, editorials, book reviews, or opinion pieces;
- lacked sufficient methodological or theoretical discussion;
- duplicated previously identified studies; or
- were inaccessible in full text.

Appendix C. Literature Screening Process

The retrieved publications were screened using a three-stage process.

- **Stage 1:** Removal of duplicate records.
- **Stage 2:** Screening of titles and abstracts to determine relevance to Artificial Intelligence in public administration.
- **Stage 3:** Full-text assessment of eligible studies against the predefined inclusion and exclusion criteria.

Only studies satisfying all eligibility requirements were retained for thematic synthesis.

Appendix D. Data Extraction and Coding Framework

Each eligible article was reviewed systematically using a standardized coding framework to ensure consistency during data extraction and thematic analysis.

Variable	Description
Author(s)	Name(s) of author(s)
Publication Year	Year of publication
Country/Region	Geographic focus of the study
Journal	Publishing journal
Research Objective	Primary aim of the study
Research Method	Conceptual, qualitative, quantitative, mixed methods, systematic review, or case study
AI Technology	Machine learning, deep learning, NLP, predictive analytics, chatbots, expert systems, etc.
Public Administration Domain	Healthcare, taxation, policing, education, justice, smart cities, public finance, environmental management, or general public administration
Major Findings	Principal results reported by the study
Opportunities Identified	Administrative benefits of AI adoption
Challenges Identified	Ethical, legal, organizational, technological, or governance challenges
Research Gaps	Limitations and future research directions identified by the authors

Appendix E. Thematic Coding Structure

After data extraction the literature was thematized into six overarching themes:

- General knowledge of the principles of Artificial Intelligence in public administration.
- Applications of Artificial Intelligence in public sector organizations.
- AI governance opportunities.
- Ethical, legal and governance issues.
- Institutional readiness and implementation challenges.
- The future directions for research and emerging priorities.

The thematic synthesis allowed for comparison of the studies, patterns and trends were identified and a synopsis of existing research about the use of AI in public administration was created.

Appendix F. Quality Assessment Criteria

To improve the reliability of the review, each included study was assessed using the following criteria:

Criterion	Assessment Focus
Relevance	Alignment with the review objectives
Methodological Quality	Clarity and appropriateness of research design
Theoretical Contribution	Contribution to AI and public administration literature
Empirical Evidence	Strength of supporting evidence
Practical Significance	Implications for governance and public management

Studies demonstrating strong theoretical, methodological, and practical contributions were given greater emphasis during the synthesis and discussion of findings.