

AI GOVERNANCE AND ADOPTION IN GOVERNMENT: STRATEGIES FOR ETHICAL IMPLEMENTATION

by

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AI Governance and Adoption in Government: Strategies for Ethical Implementation

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Abstract

The use of Artificial Intelligence (AI) in government has the potential to transform public services. It can streamline processes, enhance management, and improve how services are delivered to citizens. However, bringing AI into the public sector does come with its challenges. It is important to ensure that algorithms are fair, safeguard citizens' privacy, maintain transparency about how AI is used, and address differences in their implementation across domains. This study examines how to effectively manage and implement AI in public services. It looks at existing research and identifies common hurdles local governments face when trying to adopt AI technologies, along with different strategies that various regions have employed, highlighting the importance of building public trust for successful implementation. Additionally, the study offers a conceptual framework for governing and implementing AI ethically, stressing the need for customized strategies, stakeholder engagement, effective risk management, and adaptable regulations.

Keywords: AI Adoption in Government, AI Governance, Ethical AI in Government

Introduction

AI is becoming a powerful force for change in many areas, including how governments operate and interact with citizens. Its ability to boost efficiency, improve decision-making, and simplify service delivery is impressive. Governments around the globe are starting to use AI technologies to tackle complex social issues, from using predictive analytics in urban planning to deploying AI-driven chatbots that enhance citizen engagement (Senadheera et al., 2024; Yigitcanlar et al., 2024). Despite these advancements, integrating AI into public sector systems comes with its own set of ethical, legal, and operational challenges (Choi et al., 2023; Cyphert, 2025; Fernandez, 2023).

The way AI is governed in the public sector is still in its early stages, with various regulatory frameworks and strategies across different regions. For instance, the European Union (EU) is taking strides with its comprehensive AI Act, while the United States (U.S) opts for a more decentralized and sector-specific approach, relying on voluntary guidelines and commitments (Davtyan, 2024; Saavedra-Bazaga, 2024). Meanwhile, countries like China and South Korea are pushing for state-led innovation and favorable regulations, shaped by their unique political and economic climates (Garrido, 2025; Kim et al., 2024). These differing strategies demonstrate the global challenge of fostering innovation while maintaining ethical standards and public trust.

This study investigates strategies for ethical AI governance and adoption within government systems, focusing on the essential principles of transparency, accountability, inclusivity, and fairness. By drawing on insights from recent studies, it looks at the roles of public trust, collaboration among stakeholders, and customized governance frameworks in promoting responsible implementation (Huang et al., 2024; Robles et al., 2025). While there is a growing consensus on the need for strong ethical oversight and regulation, many discussions fall short of providing practical guidance on how to successfully integrate AI into government operations and what makes these efforts successful (Robles et al., 2025; Yigitcanlar et al., 2024).

Through an analysis of various case studies and regulatory initiatives across the world, this research seeks to contribute to the establishment of sustainable AI systems that not only enhance the efficiency of the public sector but also build trust between governments and their citizens.

The use of AI in government has great potential. However, it also raises complex issues. Currently, there are few standardized governance frameworks, leading to inconsistent implementation (Camilleri, 2024; Sepasspour, 2023). This inconsistency puts governments at risk of problems like algorithmic bias, privacy violations, and a lack of accountability (Camilleri, 2024; Lim, 2024; Zang et al., 2024). The situation is made even more complicated by the decentralized nature of public governance, where finding a balance between innovation and ethical considerations, as well as maintaining public trust, can be quite a challenge (Fernandez, 2023; Robles et al., 2025). If we do not develop clear strategies to address these problems, the integration could worsen existing inequalities and erode citizens' trust in public institutions (Lim, 2024; Robles et al., 2025).

The purpose of this study is to examine the challenges and opportunities related to integrating AI into government systems and developing a comprehensive conceptual framework of strategies for ethical implementation and effective AI governance in the public sector. The research will answer the following question:

RQ1: What themes emerge in the literature on the key barriers to AI adoption in local governments and the effective balancing of innovation with ethical oversight in AI governance?

Literature Review

AI governance is an area that is developing rapidly, yet it still faces challenges in creating frameworks that are effective, ethical, and enforceable within government. Research highlights these gaps while offering valuable opinions for improvement. Although it holds great potential for transforming various sectors, the swift advancement and widespread application of this technology outpace the establishment of comprehensive governance systems (Garrido, 2025; Sepasspour, 2023). This disconnect raises several issues, including difficulties in enforcement, ethical dilemmas, the need for public trust, and the importance of global collaboration.

A major problem is the weak enforcement mechanisms in place. Although organizations such as the Organization for Economic Co-operation and Development (OECD), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the EU have made progress in establishing ethical principles and frameworks, they often lack the necessary tools to ensure compliance (Sepasspour, 2023). The absence of enforcement measures means that these frameworks might not effectively address the risks associated with these technologies (Saavedra-Bazaga, 2024). A prominent effort in this direction is the EU's Artificial Intelligence Act (AIA), which categorizes AI systems based on their risk levels and imposes strict requirements on high-risk applications, such as biometric identification. However, some critics argue that the complexity of this Act could hinder compliance and stifle innovation (Saavedra-Bazaga, 2024).

While ethical issues such as bias, privacy concerns, and algorithmic discrimination are well recognized, translating these abstract principles into actionable regulations proves challenging. Transparency is a core principle, yet it often lacks a clear definition and practical implementation strategies (Camilleri, 2024; Huang et al., 2024; Lim, 2024). Approaches like Explainable Artificial Intelligence (XAI), which aim to clarify the decision-making processes of AI systems, are suggested as ways to boost trust and accountability (Huang et al., 2024). Public trust is another area where current frameworks often fall short. The limited involvement of citizens in policymaking and a general lack of understanding about AI can worsen this issue (Robles et al., 2025; Schiff, 2023). Without public inclusion and trust, the effectiveness of governance and adoption may be jeopardized.

Different regions adopt varying governance approaches, leading to inconsistencies in AI regulation. For instance, the EU's AIA pushes for strict regulations and risk management, while the U.S leans toward a more decentralized model based on voluntary commitments and sector-specific policies (Prenga, 2024; Saavedra-Bazaga, 2024). In contrast, China emphasizes state-led innovation (Davtyan, 2024). The structured risk categories for these systems, outlined in the EU's Act and its stringent requirements, differ sharply from the more flexible U.S approach. South Korea's Personal Information Protection Act (PIPA) aligns with the EU's General Data Protection Regulation (GDPR) but favors businesses through wider allowances for pseudonymized data and cross-border transfers (Kim et al., 2024).

Local governments are becoming more important in adopting AI, especially in areas like service delivery and urban planning. However, they often face challenges, including limited resources, ethical issues, and resistance to change (Brand, 2023; David et al., 2024; Yigitcanlar et al., 2024). Tools like algorithmic registers, which are public databases that track the algorithms used by governments, can enhance transparency and accountability (Brand, 2023). Additionally, there is a pressing need to adopt tools such as chatbots and generative AI. Chatbots improve efficiency and communication but face trust and privacy challenges (Senadheera et al., 2024), while generative AI adoption in government requires strong leadership and policy support to drive innovation (Zhou et al., 2025).

To address these governance and adoption challenges effectively, it is imperative to integrate operational frameworks into these systems. These frameworks provide a structured method for implementing ethical guidelines, compliance measures, and accountability processes. They often include best practices for risk assessments, continuous monitoring, and stakeholder engagement (Chesterman et al., 2024; Huo et al., 2024). By establishing clear operational procedures, organizations can ensure that the deployment of AI aligns with legal standards while upholding ethical integrity. Collaboration among government, academia, and industry can help develop customized operational frameworks that meet diverse regulatory and ethical needs.

Methodology

This study employed a qualitative research design, utilizing a narrative review approach as proposed by Jones (2004) and a thematic analysis as outlined by Braun et al. (2006) to identify recurring patterns and themes in the collected data. This approach allowed a deeper exploration of the complexities surrounding AI governance and adoption in government systems, ensuring that diverse perspectives are adequately represented.

Data Collection

The data collection process ensured the inclusion of relevant and high-quality sources. The goal was to investigate the intricacies of AI governance and its integration into government systems, focusing on the years 2020 to 2025. Relevant sources of qualitative data were identified, including peer-reviewed articles and policy documents. The search strategy employed Boolean operators (AND, OR) to refine the search using keywords such as "AI governance," "Ethical AI implementation," and "AI adoption in government systems." The search was conducted using academic databases such as IEEE Xplore and Galileo, which provided access to a wide range of scholarly articles and regulatory policies. Studies were selected based on their relevance to the research objectives. The inclusion criteria required that the studies be English-language peer-reviewed articles and regulatory policies published between 2020 and 2025. Non-peer-reviewed articles, opinion pieces, and studies outside the specified timeframe were excluded to maintain the quality and relevance of the review. The screening process involved a thorough review of titles, abstracts, and full texts to identify studies that aligned with the research objectives. The concluded list of articles from this process is detailed in Table 1. This approach improved clarity and thoroughness during the review process (Jones, 2004).

Table 1: Summary of included literature

Reference	Title	Focus Area
Brand (2023)	Ensuring the ethical development and use of AI in local governance.	AI in urban environments
Camilleri (2024)	Artificial intelligence governance: Ethical considerations and implications for social responsibility.	Ethical AI governance frameworks
Chesterman et al. (2024)	The Evolution of AI Governance.	Principles and frameworks for AI governance
Choi et al. (2023)	To govern or be governed: an integrated framework for AI governance in the public sector.	AI adoption in public administration
Cyphert (2025)	Confronting the challenges of regulating artificial intelligence.	U.S. AI regulation challenges
David et al. (2024)	Understanding local government responsible AI strategy: An international municipal policy document analysis.	Responsible Innovation and Technology principles in local AI policies
Davtyan (2024)	The U.S. approach to AI regulation: Federal laws, policies, and strategies explained.	Decentralized AI governance in the U.S.
Fernandez (2023)	Artificial intelligence in government: Risks and challenges of algorithmic governance in the administrative state.	AI in administrative state
Garrido (2025)	Impact of the artificial intelligence on international relations: Towards a global algorithms governance.	AI in global power dynamics
Horowitz et al. (2021)	What influences attitudes about artificial intelligence adoption: Evidence from U.S. local officials.	Local officials' perspectives on AI
Huang et al. (2024)	A conceptual framework of AI transparency from sociotechnical perspective.	Sociotechnical AI transparency framework
Huo et al. (2024)	Developing an ethical regulatory framework for artificial intelligence: Integrating systematic review, thematic analysis, and multidisciplinary theories.	AI framework for governance
Kim et al. (2024)	Workplace AI regulation and worker resistance in Korea.	AI governance and labor activism
Levesque (2025)	Smoke and Mirrors? Corporate discretion in AI regulation	Corporate influence in AI regulation
Lim (2024)	Determinants of socially responsible AI governance.	Equity and justice in AI governance
Lobel (2024)	The AI regulatory pyramid	AI regulatory tools and frameworks
O'Shaughnessy et al. (2023)	What governs attitudes toward artificial intelligence adoption and governance?	Public and expert perspectives on AI
Prenga (2024)	AI regulation in the EU, the US and China: An NLP quantitative and qualitative lexical analysis of the official documents.	Comparative analysis of AI regulations
Regulatory Update. (2025)	White house releases new policies on federal agency AI use and procurement	U.S. AI policies, data security, and cybersecurity
Robles et al. (2025)	Artificial intelligence technology, public trust, and effective governance.	Public trust in AI governance
Saavedra-Bazaga (2024)	Navigating the EU regulatory landscape on artificial intelligence: Complexities and debates in public law.	EU AI regulatory landscape
Schiff (2023)	Looking through a policy window with tinted glasses: Setting the agenda for U.S. AI policy.	U.S. AI policy development
Schiff et al. (2025)	Institutional factors driving citizen perceptions of AI in government: Evidence from a survey experiment on policing.	AI in law enforcement

Table 1: Summary of included literature continued

Reference	Title	Focus Area
Senadheera et al. (2024)	Understanding chatbot adoption in local governments: A review and framework.	AI-powered chatbots in local governance
Sepasspour (2023)	A reality check and a way forward for the global governance of artificial intelligence.	Global AI governance challenges and pathways
Tallberg et al. (2023)	The global governance of artificial intelligence: Next steps for empirical and normative research.	Decentralized AI governance
Wadipalapa et al. (2024)	An ambitious artificial intelligence policy in a decentralised governance system: Evidence from Indonesia.	AI integration in local governments
Yigitcanlar et al. (2024)	Artificial intelligence and the local government: A five-decade scientometric analysis on the evolution, state-of-the-art, and emerging trends.	Trends in AI adoption in local governance
Zang et al. (2024)	Trustworthy artificial intelligence for social governance.	Ethical AI in social governance
Zhou et al. (2025)	Government adoption of generative artificial intelligence and ambidextrous innovation.	Gen-AI adoption and innovation

Data Analysis

A thematic analysis, as outlined by Braun et al. (2006), was used to review the 30 referenced articles. This process began with careful review of the selected articles, detailed note-taking, and identification of recurring patterns and aspects relevant to the research objectives. The initial codes captured elements such as ethics, governance differences, public trust, challenges, and applications. In the second phase, the initial codes were grouped into broader categories to identify overarching themes. This process involved analyzing the relationships between codes and organizing them into meaningful clusters that represented several areas of focus. For example, codes related to transparency and accountability were grouped under the theme of ethical AI governance, while codes related to regional approaches to AI regulation were categorized under regional variations. Next, in Reviewing Themes, subthemes were grouped into broader themes to provide a more nuanced understanding of the data, which were then refined to make the ideas clearer. A summary of this process is presented in Figure 1.

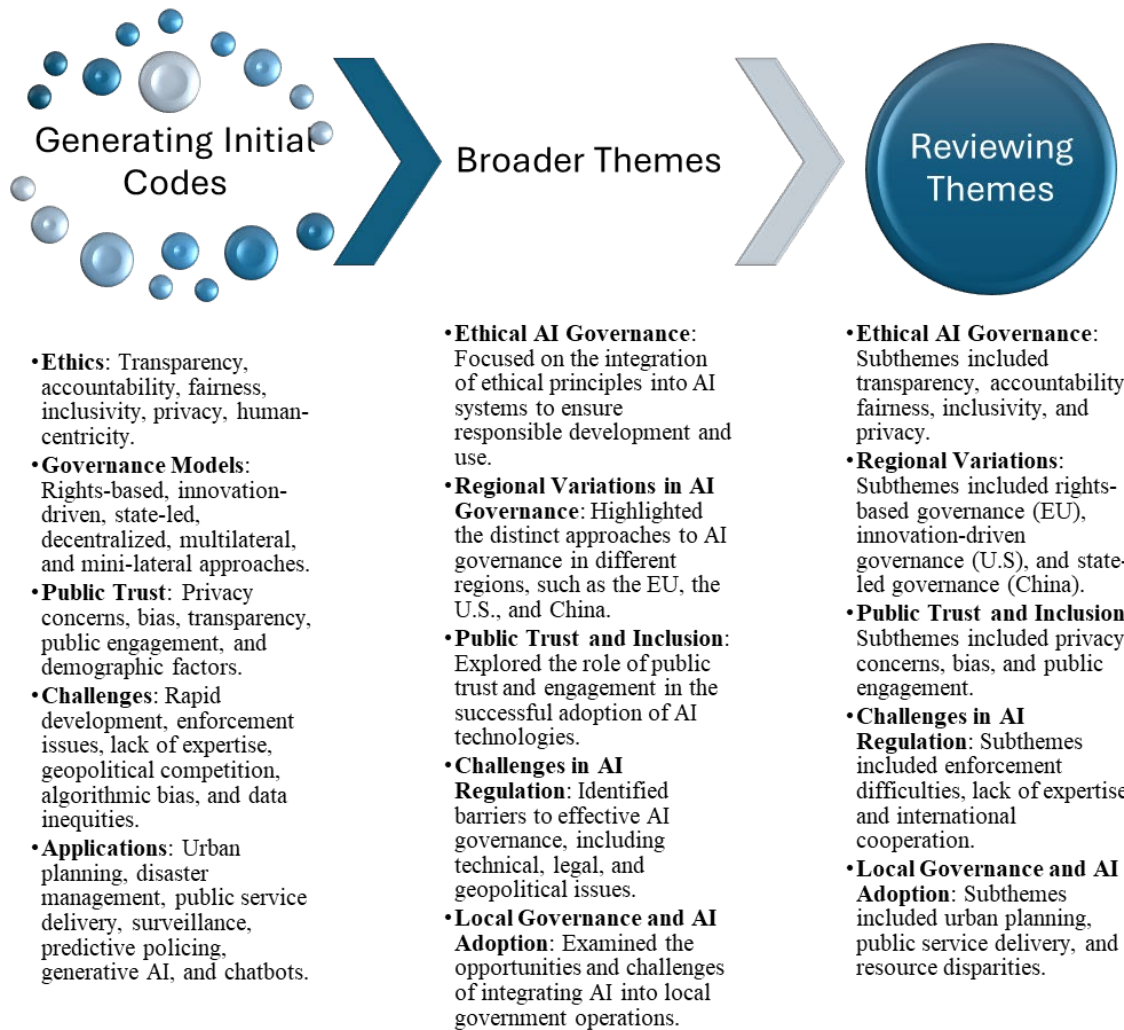


Figure 1: Summarizing the Thematic Analysis

Results

This section addresses the research questions by examining the main barriers to AI adoption in local governments and strategies to balance innovation with ethical oversight in AI governance. The analysis of the articles uncovered important themes regarding AI governance and its implementation across diverse contexts, emphasizing both the opportunities and challenges present in this fast-evolving field. The findings inspired the creation of a conceptual framework, illustrated as a pyramid. This framework not only addresses the identified challenges and opportunities but also outlines a clear roadmap for the ethical governance and adoption of AI in government systems moving forward.

Themes Identification

Ethical AI Governance

Ethical AI governance is built on important principles like fairness, accountability, transparency, inclusiveness, privacy, and security (Camilleri, 2024; Chesterman et al., 2024). To tackle the challenges of accountability in AI, researchers have suggested sociotechnical frameworks that enhance transparency and

promote explainable AI (Huang et al., 2024; Huo et al., 2024). In urban settings, approaches that put people at the center are increasingly important (Brand, 2023). Nevertheless, ethical issues are often sidelined in U.S. AI policy discussions, where the focus tends to be on economic growth and national competitiveness (Schiff, 2023).

Regional Variations

Different parts of the world approached AI governance in unique ways. For instance, the EU led with a well-defined, risk-based AI Act, while the U.S. opted for a more decentralized, innovation-driven approach. In contrast, China prioritized state-led innovation (Davtyan, 2024; Prenga, 2024; Regulatory Update, 2025; Saavedra-Bazaga, 2024). Singapore found a balance between fostering innovation and implementing regulations (Lim, 2024), and the ongoing competitive dynamics between the U.S. and China impacted global governance strategies (Garrido, 2025). Across various regions, there was growing concern about corporate discretion and the need for stronger public oversight (Levesque, 2024).

Public Trust and Inclusion

Building public trust was central to the widespread adoption of AI. This trust was influenced by factors such as privacy concerns, civil rights, cultural values, and demographic differences (Horowitz et al., 2021; O'Shaughnessy et al., 2023; Robles et al., 2025). A disconnect in trust between individuals and organizations can create barriers to societal acceptance, stressing the need for AI systems that are perceived as trustworthy (Zang et al., 2024). To ensure that policies align with societal values, participatory governance strategies that encourage public engagement are highly recommended (Schiff et al., 2025).

Challenges in AI Regulation

Regulating AI presented several challenges, including the fast pace of technological advancements, gaps in enforcement, and geopolitical pressures (Cyphert, 2025; Sepasspour, 2023). Legal issues arose around maintaining human oversight, ensuring transparency, and holding parties accountable (Fernandez, 2023). Many experts called for flexible regulatory frameworks that can balance innovation with ethical considerations (Lobel, 2024; Tallberg et al., 2023). Additionally, specific challenges like worker resistance and the complexity of technology required strong leadership support and appropriate policy incentives to overcome (Kim et al., 2024; Zhou et al., 2025).

Local Governance and AI Adoption

Local governments played a key role in the adoption of AI, especially in decentralized systems. Research pointed to trends in decision support, automation, and service delivery at the local level (Yigitcanlar et al., 2024). Proposed frameworks advocate for decentralized governance, collaboration among stakeholders, and readiness within institutions to tackle ethical issues and enhance efficiency (Choi et al., 2023; Senadheera et al., 2024). However, significant barriers, such as resource limitations and resistance to change, still pose challenges (David et al., 2024; Wadipalapa et al., 2024).

Cross-Study Comparison

The comparative analysis of the studies revealed the similarities, differences, and contradictions in AI governance and adoption across regions:

Contradictions Between EU and U.S. Governance Outcomes

The EU's risk-based AI Act pointed out strict regulations and risk management to mitigate high-risk applications, such as biometric identification (Prenga, 2024; Saavedra-Bazaga, 2024). While this approach prioritized ethical oversight, critics argue that its complexity may stifle innovation (Saavedra-Bazaga, 2024). In contrast, the U.S. adopted a decentralized model that relies on voluntary guidelines and sector-specific policies, which fosters innovation but risks inconsistent implementation and weaker ethical oversight (Davtyan, 2024; Schiff, 2023). These divergent approaches highlighted a trade-off between

innovation and regulation, with the EU focusing on minimizing risks and the U.S. prioritizing technological advancement.

Convergence on Governance Mechanisms

Despite regional differences, studies converged on the importance of certain governance mechanisms. Transparency, accountability, and public trust are universally recognized as necessary for effective AI governance (Camilleri, 2024; Chesterman et al., 2024; Robles et al., 2025). Mechanisms such as independent oversight bodies, algorithmic registers, regular audits, and participatory governance strategies are consistently recommended across studies (Brand, 2023; Huang et al., 2024; Schiff et al., 2025).

Consistent Barriers Across Regions

Common barriers to AI governance and adoption included algorithmic bias, privacy concerns, enforcement gaps, and resistance to change (Cyphert, 2025; Fernandez, 2023; Kim et al., 2024; Sepasspour, 2023). Resource limitations are particularly pronounced in local governments, which often lack the financial and technical capacity to implement AI systems effectively (David et al., 2024; Wadipalapa et al., 2024). Additionally, the fast pace of technological advancements and geopolitical pressures complicated the development of governance frameworks (Garrido, 2025; Tallberg et al., 2023).

Drivers of Local Government AI Adoption

The analysis suggested that local government AI adoption is influenced by both resource availability and public trust. While resource limitations were a major barrier (David et al., 2024; Wadipalapa et al., 2024), trust-driven factors such as transparency, accountability, and public engagement were equally important (Robles et al., 2025; Zang et al., 2024). Studies highlighted that without public trust, even well-funded AI initiatives may face resistance and fail to achieve widespread adoption.

Proposed Conceptual Framework

The findings from both thematic and comparative analyses have greatly influenced the development of an all-encompassing conceptual framework for ethical governance and the responsible adoption of AI in government systems. Each layer of this framework is designed to build on the foundation established by the previous one, ultimately fostering sustainable and ethically-minded AI systems. This section delves into a thorough operationalization of each layer, providing an explanation of the relationships that guide them. The framework is structured as a pyramid, as shown in Figure 2, and consists of the following layers:

Ethical Principles (Base Layer)

At the very foundation of this framework lie fundamental ethical principles that prioritize human needs, as discussed by Chesterman et al. (2024), Camilleri (2024), and Huang et al. (2024). These principles are fundamental to ensuring the responsible utilization of AI technologies, tackling ethical concerns that may arise, including issues of bias, discrimination, and potential violations of privacy, highlighted by Lim (2024) and Zang et al. (2024).

Governance Strategies (Second Layer)

The subsequent layer stresses the necessity for adaptable regulatory frameworks, independent oversight mechanisms, active public engagement, and investments in both digital infrastructure and AI education (Chesterman et al., 2024; Huang et al., 2024; Robles et al., 2025). To enhance transparency and accountability, mechanisms such as algorithmic registers, regular audits, and clear compliance guidelines should be implemented (Brand, 2023; Huo et al., 2024; Lobel, 2024). Furthermore, participatory governance strategies that actively involve citizens in the policymaking process are important to ensure that AI initiatives resonate with societal values (Robles et al., 2025; Schiff et al., 2025).

Risk Mitigation (Middle Layer)

This middle layer is dedicated to navigating the challenges linked to AI adoption. It seeks to reduce bias, safeguard privacy, ensure accountability from tech vendors, allocate resources wisely, and manage organizational change effectively (Cyphert, 2025; Fernandez, 2023; Zhou et al., 2025). Research highlighted the importance of robust risk assessment frameworks and the need for continuous monitoring to mitigate potential harms (Huo et al., 2024; Lobel, 2024).

Public Trust and Societal Alignment (Upper Layer)

Fostering public trust and ensuring that AI initiatives are in line with societal values are key components for successful AI adoption. Strategies such as engaging stakeholders, promoting a better understanding of AI technologies, and conducting thorough ethical reviews can greatly facilitate public acceptance (Robles et al., 2025; Schiff et al., 2025; Zang et al., 2024). Public trust holds particular significance for local governments, where transparency and accountability play pivotal roles in overcoming any resistance to change (David et al., 2024; Horowitz et al., 2021).

Implementation and Outcomes (Peak Layers)

At the peak of the pyramid, the top layer describes the implementation process, which involves setting clear, actionable goals, standardizing methods, defining roles for all involved, and closely monitoring adherence to established standards (Camilleri, 2024; Chesterman et al., 2024; Huo et al., 2024). The expected outcomes of this implementation include the establishment of ethical AI systems, enhancement of public trust, improvement of public services, international collaboration, and overall sustainable development (Garrido, 2025; Robles et al., 2025).

Feedback Loops

Interwoven throughout all layers of this conceptual framework are feedback loops that play a central role in fostering continuous improvement in AI governance and adoption practices (Huang et al., 2024; Huo et al., 2024). These feedback mechanisms emphasize the necessity for ongoing communication, thorough evaluation, and the ability to adapt in response to emerging challenges and opportunities in the fast-evolving landscape of AI governance (Sepasspour, 2023; Tallberg et al., 2023).

This structured approach provides governments with a roadmap for navigating the complexities of AI adoption while ensuring ethical integrity, public trust, and sustainable development.



Figure 2: Conceptual Framework Illustration

Discussion

Summary of findings and implications

This study reveals the complex and urgent need for effective governance frameworks that find the right balance between innovation, ethical considerations, public trust, and societal values. The proposed conceptual framework for AI governance seeks to address these issues by providing structured strategies for integrating these technologies in an ethical, transparent, and accountable manner.

Addressing Ethical Challenges in AI Governance

A key theme that emerges from the research is the importance of ethical principles such as transparency, accountability, fairness, inclusivity, privacy, and security in AI governance (Camilleri, 2024; Chesterman et al., 2024). These principles are foundational for building public trust and ensuring that technology is adopted responsibly. However, the study finds that these principles are not consistently applied across regions and sectors. For example, while the EU has put in place a rights-based framework through its AI Act, the U.S. tends to prioritize innovation and sector-specific policies, often sidelining ethical concerns (Schiff, 2023). The conceptual framework looks to fill this gap by highlighting the necessity for customized governance strategies that resonate with local values and regulatory contexts.

Regional Variations and Global Cooperation

This study reveals the regional differences in AI governance, shaped by geopolitical factors and local priorities. For instance, the EU focuses on consumer protection and managing high-risk systems (Levesque, 2024; Prenga, 2024; Saavedra-Bazaga, 2024), while the U.S. concentrates on maintaining its technological edge and ensuring national security (Davtyan, 2024; Regulatory Update, 2025). In contrast, China aligns its AI development with broader cybersecurity strategies (Garrido, 2025). These various approaches complicate efforts for international cooperation in AI governance. The framework encourages collaboration on a global scale and alignment with international ethical standards by working with organizations like UNESCO and the OECD.

Building Public Trust and Inclusion

Establishing public trust is key to the successful adoption and governance of AI technologies. The research points out that engaging the public and addressing concerns regarding privacy, bias, and accountability are essential for fostering this trust (Horowitz et al., 2021; O'Shaughnessy et al., 2023; Robles et al., 2025; Zang et al., 2024). The proposed framework includes strategies such as involving stakeholders, conducting public consultations, and offering educational initiatives to incorporate societal values into AI governance. By being mindful of demographic and cultural differences, the framework seeks to create governance strategies that resonate with a diverse range of communities (Schiff et al., 2025).

Overcoming Challenges in AI Regulation

The fast-paced development of AI technology, along with its global nature, poses specific challenges for regulation. The study identifies barriers like fragmented regulations, gaps in enforcement, and a lack of technical expertise among policymakers (Cyphert, 2025; Fernandez, 2023; Sepasspour, 2023; Tallberg et al., 2023). To overcome these challenges, the framework proposes flexible regulatory strategies, such as creating independent oversight bodies, conducting regular audits, and providing clear compliance guidelines (Brand, 2023; Lobel, 2024). Incorporating feedback loops for continuous improvement can also

help ensure that governance remains relevant as technology evolves and societal needs change (Sepasspour, 2023; Tallberg et al., 2023).

Local Governance and AI Adoption

Local governments are in a unique position to leverage AI for improving public services, urban planning, and disaster management (Brand, 2023; Yigitcanlar et al., 2024). However, challenges such as resource disparities, regulatory gaps, and public skepticism are major barriers to effective adoption (David et al., 2024; Wadipalapa et al., 2024). The conceptual framework stresses the importance of being ready at the institutional level, collaborating with stakeholders, and addressing ethical concerns to overcome these hurdles. For example, it advocates for capacity-building initiatives, such as AI literacy programs and training for public officials, to help local governments effectively implement these technologies (Choi et al., 2023; Senadheera et al., 2024).

Implications for Policymakers

The conceptual framework developed in this study offers actionable strategies for navigating the complexities of AI governance and adoption. It provides a structured approach to tackling the ethical, legal, and societal challenges posed by these technologies while fostering sustainable development and public trust. By prioritizing these findings, governments can ensure that AI technologies are introduced responsibly and equitably. Additionally, the framework highlights the necessity of international collaboration and interdisciplinary research to effectively address the evolving and multifaceted nature of AI governance.

Conclusion

AI governance is an evolving field that is increasingly important as governments around the world begin to explore and implement AI technologies. Despite its potential to revolutionize sectors like healthcare, transportation, and public services, its rapid development and deployment often outpace the creation of effective governance frameworks. Many researchers have pointed out gaps in current regulations and guidelines that hinder the ethical and responsible use of AI in government (Garrido, 2025; Sepasspour, 2023; Wadipalapa et al., 2024).

One of the main challenges is the lack of cohesive, standardized governance structures. Numerous studies indicated that while it can greatly improve efficiency and decision-making, its implementation can lead to unintended consequences, such as algorithmic bias and privacy concerns. For instance, without proper oversight, these systems may inadvertently reinforce existing inequalities or result in discriminatory practices, particularly towards marginalized groups (Robles et al., 2025). Also, as governments navigate the complexities of their integration, the need for transparency and accountability becomes even more pressing. Citizens are increasingly concerned about how their data is collected, used, and protected. Research has shown that public trust is paramount; when citizens feel uninformed or powerless regarding AI governance, it can lead to resistance and skepticism towards government initiatives (Huang et al., 2024).

Additionally, there is a growing recognition that the ethical governance of AI cannot be achieved in isolation. Collaboration across various stakeholders, including government entities, private sectors, and civil society, is needed to develop comprehensive strategies that prioritize ethical considerations alongside technological innovation (Yigitcanlar et al., 2024).

While the promise of AI in government operations is substantial, the literature indicates that without proactive measures to establish robust governance frameworks, the risks posed by these technologies could overshadow their benefits.

Limitations

This study offers important insights into AI governance and adoption in government systems, but it also faces several limitations. Firstly, reliance on secondary data from the existing literature may limit the ability to reflect real-time developments in governance practices. Secondly, although the review considers global perspectives, most of the analysis derives from studies based in developed regions such as the EU, the U.S., and China, which may skew the findings and limit their applicability to developing countries. Lastly, while this study discusses sector-specific applications of AI, it does not provide a comprehensive analysis of all sectors facing AI adoption challenges in government systems.

Future Research

The fast-changing world of this technology and governance brings its own set of challenges, making some findings quickly outdated. Future research should focus on long-term studies to track these changes and adjust existing governance models to fit different cultures and political contexts while including various stakeholders. Although the framework emphasizes transparency and public participation, we need more evidence to see how these elements help build public trust. Access to technology is also a significant issue, as not everyone has the same level of access to advanced tools. To make AI governance more effective, we should consider how to implement solutions in areas with few resources and ensure regular updates to keep up with advancements. Practical pilot projects are important for testing these ideas in real-world situations. We also need to pay more attention to the role of non-state actors, such as private companies and community groups, which are fundamental to successful governance. By addressing these issues, we can strengthen the framework for better AI governance and adoption.

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