

From Antecedents to Outcomes: A Structured Literature Review on AI Implementation in Public Sector Organizations

Anastasiya Henk
 Nord University Business School
Anastasiya.henk@nord.no

Oliver Henk
 Nord University Business School
Oliver.henk@nord.no

Abstract

This paper provides a comprehensive review of the literature on the AI implementation in the public sector. Using the ADO framework, it analyzes the antecedents, decisions, and outcomes of an implementation of AI. In particular, the review identifies key drivers for the adoption of AI, such as technological advancements, policy directives, and the need for efficiency and transparency. Decision-making processes include the selection of the right policies, technologies, and work practices. Finally, the outcomes show an effect on the workforce, socio-economic benefits, services offered, trust, and policy-formulations. As such, the paper contributes to a greater theoretical understanding of AI implementation in the public sector and highlights the current gaps in the literature. Practically, it offers insights and proposes a framework that will be useful for both policymakers and practitioners aiming to implement AI effectively in public sector organizations.

Keywords: artificial intelligence, implementation process, public sector, literature review

1. Introduction

The recent advancements in the technology and potential of Artificial Intelligence (AI) to improve performance of public sector organizations and enhance both citizen satisfaction with public services and overall well-being (Di Vaio et al., 2022; Wirtz et al., 2021) lead to a rapid growth of the studies in the field. However, despite significant scholarly interest, the knowledge in the field remains unstructured. Previous attempts to structure appear fragmented and focused on specific aspects of AI implementation within the public sector, such as its role in decision-making effectiveness (Di Vaio et al., 2022), meaning of AI (Wirtz et al., 2019), automation and technological outsourcing of governmental function, empowerment of political participation by the use of AI (Savaget et al., 2019), negative impacts of AI in the

public sector (Valle-Cruz et al., 2024), and cognitive computing systems (Makasi et al., 2021). Moreover, previous literature reviews are rather outdated (Barth & Arnold, 1999), or do not capture the latest advancements or the broadening landscape of AI applications in public sector context (Wirtz & Müller, 2019; Wirtz et al., 2019).

Responding to these gaps, this paper aims to provide a comprehensive review of the field with a focus on the process of AI implementation in the public sector organizations. To do that, we formulated the following research questions inspired by the ADO framework (Paul & Benito, 2018) (will be presented in the following section):

RQ1. What are the antecedents, decisions, and outcomes of AI implementation in the public sector?

RQ2. How can we extend our understanding of this topic in future?

The remaining part of the paper is structured in the following way: in the next section we introduce our methodological choices. Further, we present our findings, where we will first introduce a descriptive analysis of the research field, provide an in-depth analysis of the definitions, antecedents, decisions and outcomes, and outline directions for future research. In the final section, we summarize contributions of the study, indicate its limitations, and explain its implications for managers and policymakers.

2. Methodology

In order to conduct rigorous systematic review, we adhered to the SPAR-4-SLR protocol developed by Paul et al. (2021), which involves three consecutive phases: assembling, arranging, and assessing. The overview of the research methodology is depicted in Figure 1.

Our search started with the assembling stage, where we formed the initial dataset of papers positioned within the domain of AI implementation in the public sector in management, business, and public administration-related research fields. The search was

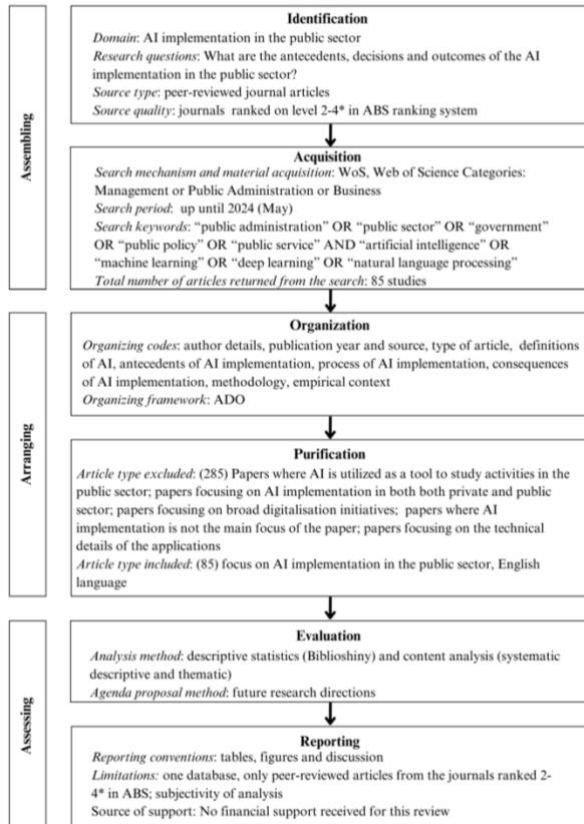


Figure 1. SPAR-4-SLR

guided by the two research questions: “What are the antecedents, decisions and outcomes of the AI implementation in the public sector” and “How can we extend our understanding of this topic in future?”. In order to answer the research questions, we focused on research contributions published in respected journals ranked at levels 2-4* ABS (2021) ranking system that contribute substantially to scholarly development (Paul et al., 2021) and ensure the high-quality of publications by implementing rigorous peer-review processes (Cooper, 2017). During the acquisition stage for the purpose of this conference and due to the time constraints, we have conducted an extensive keyword search across the Web of Science database. We applied keywords “public administration” OR public sector” OR “government” OR “public policy” OR “public service” similarly as Sousa et al. (2019), and “artificial intelligence” OR “machine learning” OR “deep learning” OR “natural language processing” as defined by Borges et al. (2021). Our search was not limited by a certain time period, which allowed us to include all available studies within the chosen domain and ensure that we provided a holistic overview of the developments within the field. However, it is worth noting that the topic is developing fast, and more research contributions are expected to arise in a short

period of time. The search resulted in an initial dataset of 370 papers.

Further, in the arranging stage we organized and purified our dataset. First, both authors screened all the abstracts and titles from the initial dataset, which resulted in a dataset of 145 papers. We created a review protocol to ensure the rigorousness and consistency of the reviewing process (Fink, 2019), and conducted a pilot review of 7 papers to ensure consistency in logic and adherence to the procedures outlined in the protocol (Cooper, 2017). Moreover, we developed a codebook to systematize the findings from the papers, the list of codes is presented in the figure 1. In order to be included in the dataset, a paper should be written in English and focus on the implementation of AI in any of the areas of the public sector. We excluded papers that utilize AI applications to study activities in the public sector; papers that investigate AI in both private and public sector unless the differences are clearly distinguished; papers that focus on broad digitalization initiatives that include various technologies that are also non-AI driven unless the differences are not clearly distinguished; and papers that focus on the technical details of the AI technology rather than on its actual implementation. After this stage, we formed a dataset of 85 papers, which were further read and analyzed within this paper.

In the assessing stage, we have conducted a descriptive bibliometric analysis using the web-based Biblioshiny software for Bibliometrics (Aria & Cuccurullo, 2017), in order to provide descriptive statistics and visualizations about the dataset, including the keyword clustering. Further, we used the Antecedents-Decisions-Outcomes (ADO) framework (Paul & Benito, 2018; Paul et al., 2023) in order to organize the findings from the dataset and conduct the content analysis within each element of the framework. In turn, the ADO framework allows to study constructs by understanding the motivation behind engagement with it (antecedents), processes of engagement with the construct (decisions), and consequences of the engagement (outcomes). The findings from the papers are presented in the following section, and the limitations of the study are outlined in the conclusions section.

3. Findings

3.1. Descriptive analysis of the analyzed literature

This section presents a detailed analysis of the descriptive statistics derived from the literature on the implementation of artificial intelligence (AI) in the

public sector. Examination of the collected literature's trends, characteristics, and collaborative patterns allowed us to understand the evolution and current state of research in the field. Interestingly, the dataset we analyzed includes papers published between 1999 and 2024, with the majority of them written after 2020. As depicted in Figure 2, there was a notable rise in publications starting around 2019, with a peak observed in 2023 (the data for 2024 is not fully available yet). The annual growth rate of 13.36% indicates a rapidly growing interest and investment in this research area. Such an upward trend highlights the increasing recognition of AI's potential to transform public sector operations and services and aligns with the increasing adoption of AI technologies globally (MorningConsult, 2023).

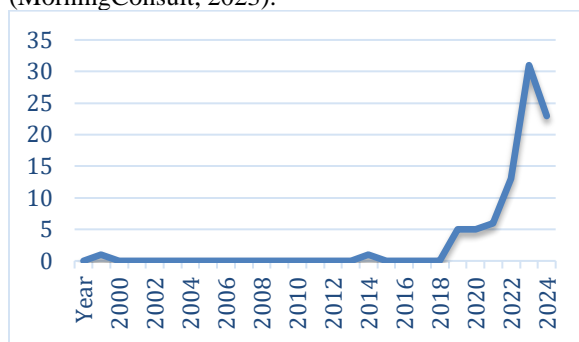


Figure 2. Publications trend on AI implementation in the public sector

3.1.1. Trends in the field

A comprehensive keyword analysis was conducted to identify the primary themes and topics addressed in the literature. The analysis revealed 229 Keywords Plus (ID) and 290 Author's Keywords (DE), allowing us to clearly identify clusters within the literature based on the interest within the field. Particularly, the field is interested in "artificial intelligence" and how it works, e.g. in terms of frameworks that allow users to apply the technology in the work processes, how they can collaborate, and ethical implications of the use of AI in the public sector. In addition to that, the field is interested in AI from the perspective of discretion and trust. Public data should be handled with care, and it is not always transparent in how far the data that AI handles is stored securely. As such, the governance of the AI implementation is clearly an avenue of interest. Finally, there are several articles that discuss the AI implementation in the public sector from the perspective of the challenges that are involved in this process. This relates to both the technical challenges of implementation and advancements towards new services and developments in the future.

In addition to the different clusters in the literature, it is interesting to see how the interest in the field develops over time. For the analyzed articles in the sample, there appears to be a clear shift from a more technical perspective of artificial intelligence that was trending in 2022 (information technology, performance, and systems) towards more practical perspectives of the challenges involved with implementation and what this means from a perspective of governance, towards the topic of trust that has started to become more prevalent in 2024.

3.1.2. Geographic coverage of empirical studies

According to the global OECD repository on AI policies (OECD.AI, 2021), there are currently 69 countries, in addition to the African Union and the European Union that have official policies towards AI in place. These policies highlight the importance of AI frameworks and allow those countries to establish themselves as trustworthy, or global leaders towards the implementation of AI in both private and public sectors. At the same time, the literature that was analyzed for this paper shows that most of the academic articles are focused on Northern America, the EU, China, and Australia, leaving much room for future research to analyze AI adoption in the public sector of other countries: US (13), Netherlands (5), Australia (4), China (4), UK (4), Norway (3), India (2), Mexico (2), Brazil (2), Germany (2), Austria (1), Belgium (1), (Canada (1), Switzerland (1), Denmark (1), Finland 1, Ghana (1), Pakistan (1), Sweden (1). It is also noteworthy that several of the studies analyzed the adoption of AI in larger regions such as the EU, or different territories that cross national boundaries, such as Eastern Europe, Northern Europe, etc. Interestingly, two of the analyzed articles explored the implementation of AI in the countries without formal AI policies: Ghana and Pakistan. The findings from such articles can significantly contribute to the current discussion on AI implementations, further research is needed to understand the importance of the development of tailored strategies and policies that address unique national challenges countries face (McKinsey, 2024).

3.2. Conceptualization of AI in public sector organizations

While all the analyzed articles position their research within the domain of artificial intelligence, the conceptualization of artificial intelligence varies in different contexts. The variation reflects diverse perspectives on how AI is understood and applied in the public sector that led us to identification of five

distinct conceptualizations that shape the current discourse around AI.

AI as an augments: This perspective views AI as technological enhancer and transformative force in automation technology that has the potential to significantly affect the labor and capital incomes in the future (see e.g. Iuga & Socol, 2024; Jacobs, 2024; Zhu et al., 2022). For instance, examples such as robotic and cognitive automation in the government demonstrate how AI actively generates insights and engages with citizens (Iuga & Socol, 2024).

AI as a self-learning and adaptive systems: AI is understood as a set of systems capable of learning and adapting through the use of advanced and sophisticated algorithms. Several articles discuss for example machine learning (ML) as a subset of AI where algorithms are developed to learn from the data and make predictions (see e.g., Alon-Barkat & Busuioac, 2023; Dunleavy & Margetts, 2023; Misra et al., 2023; Twumasi & Twumasi, 2022).

AI as an enabler: AI is understood as a technology designed to perform humane tasks and deliver value directly to the consumers. For instance, Wang et al. (2024) present a case of AI-powered humanoid robots that can carry out tasks traditionally carried out by humans and look like humans. Inherently, there are many other AI applications like chatbots and wearable devices that provide personal benefits (Maragno et al., 2023), while social personal AI extends these benefits to community contexts, such as self-driving buses and remote patient monitoring (Dorotic et al., 2024).

AI as a regulator and enhancer: AI serves a regulatory function that ensures compliance and security through, for example, monitoring technologies such as smart closed-circuit television (CCTV) and facial recognition (Dorotic et al., 2024). Particularly, “AI-exposure estimates” and “automation potential estimates” are used to assess the impact on job displacement (Jacobs, 2024). Similarly, AI might be used to improve public infrastructure, like air quality monitoring and smart traffic lights (Dorotic et al., 2024). Finally, predictive policing tools can utilize machine learning to forecast potential criminal activity (Aviram et al., 2024).

Finally, AI is conceptualized as **an intelligent decision-making partner** in cognitive systems and decision support, where it significantly enhances and facilitates decision-making processes. For instance, cognitive computing systems (CCSs) interact with humans to provide context-sensitive, confidence-weighted recommendations (Makasi et al., 2021). Similarly, algorithmic decision-making (ADM) autonomously processes large datasets and contributes to decision-making by offering scalability and high

speed of processing that surpass human capabilities (Rinta-Kahila et al., 2022).

3.3. Antecedents of the AI implementation in the public sector

During our analysis, we identified several groups of antecedents that explain the increasing implementation of AI in the public sector. We categorized them into technological, economic, political and regulatory, social, and organizational drivers. Technological advancements in artificial intelligence, machine learning, and big data analytics have fundamentally enhanced the capability to process and analyze large volumes of data efficiently. This technological progression is a primary driver in modernizing public administration systems, facilitating more informed decision-making and improved service delivery (Dunleavy & Margetts, 2023; Maragno et al., 2023). Concurrently, economic imperatives, such as the need for cost reduction and efficiency improvements, are also critical drivers for adopting AI solutions. The pursuit for economic viability, particularly in contexts of limited public sector budgets, calls for the adoption of technologies that can improve the sector’s efficiency and productivity while still aligning technological investments with fiscal prudence (Schiff et al., 2023).

Politically and regulatory, the adoption of AI technologies in the public sector is profoundly influenced by the governing environments. Regulatory strategies and policies enable and define the course of AI implementation. These frameworks directly affect the allocation of resources for AI projects and ensure that budgeting aligns with technological advancement needs (Zhu et al., 2022). The push towards digital sovereignty in policies reflects a strategic commitment to controlling and building a digital infrastructure necessary for AI development (Mügge, 2024). Furthermore, there is an increasing trend in the establishment of regulations aimed at protecting vulnerable groups of the population. Such legal stipulations ensure that AI applications adhere to high standards of accountability and transparency, foster trust among citizens, protect public interests and enhance the legitimacy of AI initiatives in public services (Hermann et al., 2023).

Social and organizational drivers also significantly influence the implementation of AI within the public sector. Public expectations and the demand for improved customer experience motivate governments to adopt AI technologies that enhance service delivery and efficiency (Misra et al., 2023). Organizational culture and corporate interests further drive this adoption, where entities with a proactive, innovative

culture are more likely to integrate advanced technologies to meet service demands (Behl et al., 2022). Additionally, the increasing need to handle vast amounts of data and make data-driven decisions made AI an indispensable tool in the public sector, enabling better resource allocation and more effective governance (Anastasopoulos & Whitford, 2019; Di Vaio et al., 2022).

3.4. Decisions on the AI implementation in the public sector

The analyzed literature highlights several critical decision points that influence the success and impact of AI initiatives. These decisions concern the entire organization as they span both strategic levels with more long-term considerations, as well as the operational and tactical levels where employees work with the technology on a daily basis. In particular, several of the analyzed articles highlight that these decisions are often strongly influenced by various socio-economic, political, and ethical considerations that the managers who want to implement AI technology in their organizational processes need to be aware of. To address these issues, the literature highlights three key areas that are essential for the decision to implement AI in the public sector: (1) formulating strategic policies and setting clear ethical standards; (2) ensuring that the workforce has the necessary capabilities for working with AI; (3) choosing the right model and ensuring data validity and security.

3.4.1 Policy strategy and ethical standards

Strategic policy formulation and establishment of ethical standards are foundational decisions in AI implementation. Governments need to develop comprehensive AI policy frameworks that address socio-economic impacts such as job displacement and economic inequality while ensuring ethical use and data transparency.

Several of the studied articles discuss the negative impacts of AI implementation concerning potential significant declines in employment as well as adverse economic effects that can impact budgets of the government. To address these issues, Zhu et al. (2022) suggest that governments temporarily relax constraints on their budgets and increase governmental spending. Moreover, the authors suggest that rather than trying to reduce expenditures to regain balance in the budgets, the government should consider new approaches such as “taxing robots”, i.e. introducing taxes on the work that is produced through automation, as well as increasing the funding for improved

regulations that support the development of introducing AI in the work processes.

In addition to the potential adverse effects on the budget balance, the literature is also concerned with different policy choices that can affect how AI in the public sector will develop in the future.

Well-formulated policies will have the additional benefit of improving concerns with data transparency and ethical standards that organizations and employees need to adhere to in their work processes. In their study on the role of Big Data and advanced analytics in the public sector, they find that public organizations often accumulate data that contains “*individually identifiable information*” (p.35) that can potentially be attributed to the original user, even if the data is anonymized. As such, implementing strong policies for data validation, transparency, and ethical standards will help secure the work processes and increase trust towards the citizens.

One way of improving the policies and identifying potential shortcomings that fail to address implementation challenges is through hierarchical frameworks that systematically address those challenges. Misra et al. (2023) show that frameworks such as *Interpretative Structural Modelling* (ISM) can help policymakers in their efforts to understand the challenges that are related to the implementation of AI in the public sector and find solutions towards more robust policies.

3.4.2 Human workforce capabilities

Combining the capabilities of a human workforce with AI systems can, in practice, result in an improved workforce that leverages human qualities while leveraging machine precision and efficiency to deliver public services. The decision to implement more AI technologies in the work processes should, therefore, not lead to a replacement of the human workforce but a complimentary service that improves the delivery of services for citizens (Wirtz & Müller, 2019). In their study of a public library in Australia, Wang et al. (2024) show that the integration of a service robot fundamentally changes the way how the employees need to act in their working environment. In turn, the service robot has immediate contact with the customers and delivers information services. The human employees need to react to this new environment by perceiving the AI-powered machine as their “teammate” rather than being supervisors to the robot in order to ensure customer satisfaction. This is not only true in the case of public libraries but also in the operational environment of policework (Aviram et al., 2024), where an efficient embedding of technological tools that can assist police offers in their

work processes to become overall more efficient. Failure to leverage the strength of both the human capabilities and the strength of the machine would lead to adverse outcomes that are naturally not intended.

In order to leverage these benefits of a combined workforce, it is essential that employees have the right training and are aware of the way how the information that the AI delivers is generated. As such, investing in training programs to enhance public sector employees' capabilities helps reduce reliance on external partners and improves AI deployment efficiency (Dunleavy & Margetts, 2023; Wilson & Broomfield, 2023).

3.4.3 Model selection and data security

When making the decision to integrate AI technologies into the existing work processes, choosing appropriate models for various applications, such as forecasting and data management, is a critical operational decision (Desiere & Struyven, 2021). While this is inherently true for all public services, it is especially important in such areas as healthcare (Kannelonning, 2023) or surveillance (e.g., Doberstein et al., 2022; Dorotic et al., 2024). Here, AI technologies hold significant promises for the much-improved delivery of services (Twumasi & Twumasi, 2022). However, at the same time, the integrity of the data that are handled in the system is critical, and it has to remain private for the public to believe and trust in the system. Kannelonning (2023) explores this issue in the context of Norwegian hospitals, where the goal is to use AI for "more accurate diagnostics, better treatment, and more effective use of resources". Here, an open culture of knowledge-sharing across different healthcare services and the development of new technologies in cooperation with the private sector (see also Li et al., 2023) are vital decisions that facilitate the implementation of AI in the provided services and gain public acceptance and trust.

3.4.4. Suggestions for future research

The previous discussion leads to several areas of interest for future research. First, there is a need for more research on different governance models and how these affect the quality and pace of AI adoption in the public sector. In addition, the current literature misses a focus on more rural areas where, e.g., broadband availability might significantly impact the decision to implement AI in the work processes. Finally, there is a need for more research on integrating human qualities with machine precision in AI systems to investigate further how this synergy can be further improved and what skills are required from the human workforce in the future to deliver better public services and better efficiency.

3.5. Outcomes of the AI implementation in the public sector

While analyzing the outcomes, we identified key areas that are influenced the most by the implementation:

3.5.1. Human workforce

AI enhances the capabilities of the human workforce by automating repetitive and mundane tasks, which makes employees available for more strategic and engaging work and fosters job creation in new tech-driven sectors (Zhu et al., 2022). Such a shift could increase job satisfaction and productivity among public employees (Di Vaio et al., 2022). However, the implementation of AI is also accompanied by significant downsides, such as job displacement and the emergence of skill gaps. As routine tasks become automated, highly automatable jobs are at risk, leading to layoffs and a workforce that may lack the requisite skills for newly created roles (Wirtz et al., 2020). Taking into consideration these dynamics, there is a need for comprehensive retraining and development programs that will equip employees with the necessary skills to adapt to an increasingly digitized working environment. Further studies are needed to explore the long-term effects of AI on job security and employment quality in the public sector.

3.5.2. Delivery of services

AI technologies significantly enhance the capabilities of public services by improving their quality, accessibility, and responsiveness (Chen et al., 2024; Iuga & Socol, 2024). For example, applications such as predictive policing and personalized healthcare utilize AI to customize services to individual needs and ensure that assistance is available round-the-clock and more accurately aligned with citizen requirements (Aviram et al., 2024). However, AI implementation also has some negative impacts on the delivery of services and public accessibility, such as the emergence of service disparities and social exclusion, which particularly affect underserved communities (Misra et al., 2023). Unintended biases embedded in AI algorithms can worsen these disparities, which might lead to unequal access to such technologically enhanced services (Wang et al., 2024). Moreover, the reliability of AI diagnostics and decision-making systems entails significant risks. For instance, in healthcare, inaccuracies in AI-driven diagnostics and the potential deskilling of physicians pose risks to their employment and the quality of care,

requiring additional competencies and caution against overreliance on these systems (Kannelonning, 2023).

Moreover, AI systems were involved in severe systemic failures, such as the wrongful denial of benefits or incorrect fraud accusations, leading to vast social and personal distress (Longoni et al., 2023; Newman & Mintrom, 2023). The analysis of this outcome highlights the need for careful consideration of both the design and implementation of AI systems in public services that ensure the promotion of inclusivity and fairness. Further research should focus on identifying and mitigating biases in AI algorithms, studying the long-term impact of AI on service accessibility, and developing mechanisms to ensure equitable distribution of benefits from AI implementation and mitigation of systemic risks that lead to significant legal and ethical violations.

3.5.3. Trust and ethical dilemmas

Enhanced transparency and accountability, driven by AI's capacity for data-driven decision-making, can substantially increase public trust by making government processes more visible and comprehensible to the citizens (Adobor & Yawson, 2023). However, this raises profound privacy concerns and ethical challenges. Extensive AI deployment for surveillance and data handling can lead to the misuse of personal data and significantly violate individual privacy rights (Schiff et al., 2022; Wang et al., 2023). Moreover, reliance on algorithmic decision-making can generate ethical conflicts, particularly when such decisions impact individual rights or outcomes in ways that may diverge from established societal values or legal norms (Valle-Cruz et al., 2024). The efficacy of AI systems can foster trust in public services when implemented ethically; however, poor management of these systems can lead to misuse, unintended biases, and public distrust (Li et al., 2023). Such a two-sided nature of AI necessitates the integration of ethical considerations into innovation policies, which are often overshadowed by economic and geopolitical goals and result in a limited translation of these critical issues into actionable policy solutions (Schiff et al., 2023). Future research should focus on the development of a governance framework that will entail mechanisms and procedures for AI certification, ensure the following of ethical standards, guarantee transparency and accountability of AI, and incorporate adequate human oversight.

3.5.4. Policy development and administrative processes

AI improves decision-making by facilitating the analysis of extensive datasets, which can significantly streamline policy formulation and administrative procedures and improve its efficiency and efficacy (Di Vaio et al., 2022). AI-driven tools such as predictive analytics and automated risk assessments enable more precise forecasting and backcasting, which aid in better planning (Twumasi & Twumasi, 2022), data management (Maragno et al., 2023), and risk monitoring and assessment (Zhao & Su, 2022). However, the reliance on AI also introduces significant risks, particularly concerning policy simplification and the potential for error. The automation of policy analysis can lead to an overreliance on algorithmic outputs, which might oversimplify complex social issues or fail to seize the needs of vulnerable and disadvantaged citizens, and lead to policy decisions that do not adequately address the real challenges (Casey, 2024). Furthermore, AI systems can produce shallow or inaccurate outputs, severely impacting public policy development and disproportionately affecting marginalized communities (Anastasopoulos & Whitford, 2019). Risks such as data bias, lack of transparency, algorithmic opacity, errors due to faulty data inputs, and undermining accountability pose further challenges to the integrity of public administration (Roehl & Crompvoets, 2023). Further research should focus on the development of methods to improve the interpretability and transparency of AI systems and explore the long-term impacts of AI-driven policy changes on societal equity and fairness in order to mitigate risks and enhance the positive outcomes of AI in the public sector.

3.5.5. Socio-economic outcomes

AI technologies optimize the efficiency of public service delivery and, as a result, improve the availability and quality of services such as healthcare, education, and public safety (Chen et al., 2024). In turn, such advancements contribute to increased public value and can significantly strengthen community welfare by providing more personalized and responsive services (Dickinson & Yates, 2023). Moreover, the improvements in service delivery, resource allocation, and heightened capabilities in handling complex civic issues enhance the overall quality of life for citizens (Zhu et al., 2022).

However, the deployment of AI can also lead to unintended socio-economic consequences. Automation may lead to job displacement, especially among less skilled labor sectors, and lead to widening income disparities (Zhu et al., 2022). Such economic shifts can increase socio-political polarization, where

communities diverge over perceived economic benefits and losses, which leads to ideological clashes and challenges to social cohesion (Jacobs, 2024). Failures in AI decision-making can cause widespread citizen distress and lead to inaccurate estimations and decisions, resulting in legal actions and financial and reputational damage to the government (Rinta-Kahila et al., 2022). Public skepticism concerning the equity and fairness of automated decisions is increasing and raises concerns over whether AI systems can truly respect societal values (Gaozhao et al., 2024). Furthermore, there is a notable loss of interest in services delivered by non-human decision-makers, particularly in such contexts as employment decision-making, which may affect public acceptance and trust in AI technologies (Keppeler, 2024). Future research should explore strategies to mitigate the risks of polarization and to utilize AI's potential for fostering inclusive and diverse economic development and community engagement. Furthermore, future studies should address the long-term socio-economic impacts of AI, particularly how it affects different demographic groups and the resultant social changes, in order to better understand and manage the societal transformations caused by AI implementation in the public sector (Dorotic et al., 2024).

The following framework (Figure 4) presents the state of the research related to AI implementation in the public sector.

4. Conclusions

With this literature review, we contribute to the existing debates on AI implementation in public sector organizations by introducing a framework that demonstrates the holistic approach to the implementation process, which includes antecedents (drivers that contribute to the implementation), decisions (activities that are performed for the implementation), and outcomes (consequences of the implementation). Besides, we identify key research gaps within the framework and show the areas for future studies.

Our literature review has several limitations. First, we limited it to a single database and categories of “business”, “management”, and “public administration. Taking into consideration the interdisciplinary nature of both public sector and AI, we potentially overlooked contributions from other research fields like computer science or ethics or more context-specific ones like police, healthcare, local administration, etc. Besides, for the purpose of the paper, we used content analysis, which inherently carries a degree of subjectivity that could influence the interpretation of the results.

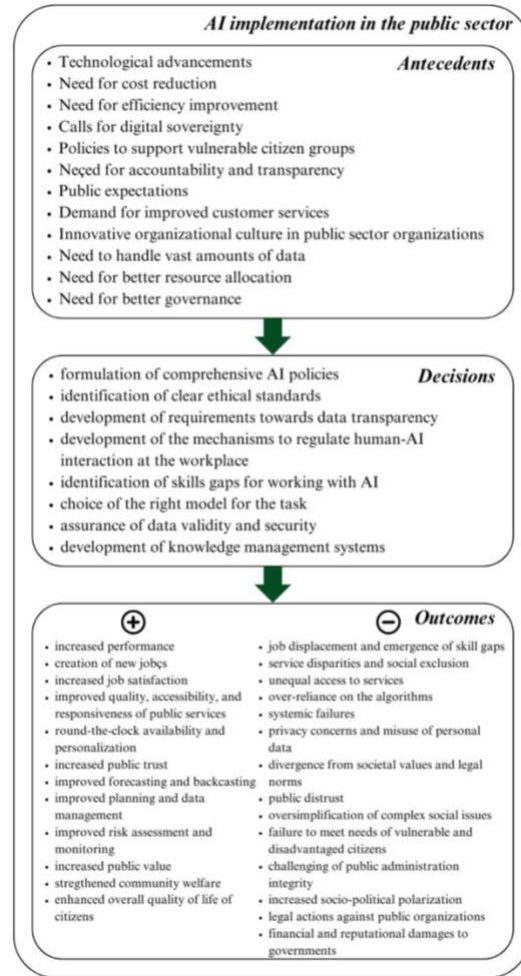


Figure 4. ADO of AI implementation in the public sector

The findings of our study offer critical insights for managers of both public and private organizations as well as for policymakers. Our framework presents a comprehensive approach to AI implementation that could guide managers through every process phase. This includes the initial decision-making — assessing whether the necessary conditions for implementation are met, managing the implementation itself — identifying potential challenges and strategizing responses, and evaluating the outcomes—anticipating both the positive and negative consequences. For policymakers, this framework is particularly relevant as it can help understand the entire AI adoption process and ensure that public acceptance is secured. Furthermore, it can aid policymakers in regulating the process effectively and preemptively addressing any potential legal implications that might arise.

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