
Organisational AI Readiness for Public Administration: A Comprehensive Review and Framework for Conceptual Modelling

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Abstract:

Purpose: The aim of this paper is to assess existing artificial intelligence (AI) readiness models and to propose foundational starting points for developing a comprehensive organisational AI readiness model specifically tailored to public administration.

Design/Methodology/Approach: An analysis of the models of organisational readiness for AI in 24 identified sources from the original database was conducted using the systematic literature review approach according to the PRISMA protocol. The analysis focused on identifying gaps in current AI readiness models and frameworks, with a particular focus on the requirements of public administration.

Findings: The systematic review revealed that the existing models largely ignore important elements such as strategies, products/services and the socio-political environment. The proposed framework integrates these dimensions and emphasises secure IT infrastructure, workforce adaptability, citizen engagement, transparency and collaboration between government sectors.

Practical Implications: The proposed framework provides a practical guide for integrating AI into organisational workflows. Public administrations can apply this model by aligning AI initiatives with strategic goals and ensuring the involvement of key stakeholders, including executives, IT experts, and policy makers.

Originality/Value: The study highlights the limitations of current models, extends the theoretical understanding of organisational AI readiness and provides a structured, human-centred approach for future AI applications in public administration. Further research should validate the framework for future model development in diverse administrative settings.

Keywords: Artificial intelligence, public administration, AI readiness, AI preparedness, organisation, systematic literature review.

JEL Classification: H83, O38.

Paper type: Literature review study.

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1. Introduction

Since the industrial revolution, technical innovations have replaced many manual activities. Similarly, today, artificial intelligence (AI), including machine learning, neural networks, natural language processing, deep learning, etc., can transform and potentially replace human tasks in various fields, providing opportunities for continuous innovation (Dwivedi *et al.*, 2021; Velinov *et al.*, 2023).

While technological developments in the field of AI are advancing rapidly, public administration remains at a certain distance from technological change (Aristovnik *et al.*, 2024), and although public administration is catching up with the private sector in the application of some (related) AI technologies (e.g. chatbots, big data analytics, machine learning), there is still a large gap between AI implementation in public administration and that in the private sector (Grima *et al.*, 2023).

Moreover, AI alone cannot add value to public administration unless material, human, organisational and other resources are combined for AI adoption (Tomažević *et al.*, 2024), which is highly dependent on AI readiness within public institutions, i.e. organisational AI readiness (Jöhnk *et al.*, 2021). Readiness is the state or fact of being ready or fully prepared, a state of preparedness (OED, 2024).

For the purposes of this article, we focus on organisational AI readiness, following Holmström's (2022) definition, which refers to an organisation's ability or preparedness to effectively implement AI technologies, i.e., to deploy and use AI in a way that adds value to the organisation.

In contrast to national AI readiness, which refers to a country's entire ecosystem, organisational AI readiness focuses on internal capabilities such as technological infrastructure, employee skills, leadership support and strategic alignment with public service goals, and compliance with legal and ethical standards (Paredes *et al.*, 2021; Selten and Klievink, 2024; Tehrani *et al.*, 2024).

As the technology brings both opportunities and challenges, often of an ethical and legal nature, and has the potential for positive and negative impacts on organisations, society and individuals, both levels of AI readiness should go hand in hand for successful AI adoption (Dwivedi *et al.*, 2023).

Compared to the private sector, AI adoption in public administration requires a special research focus on effectiveness, efficiency, equity, manageability and political feasibility (Young *et al.*, 2019). In this context, research to date shows that a comprehensive approach is required that goes beyond purely technological capabilities. Uren and Edwards (2023) argue that the successful adoption of AI requires a focus on people, processes and data.

This view is shared by van Noordt and Tangi (2023), who emphasise the importance

of a solid background in e-government development as well as technical and non-technical skills for effective AI adoption. Alami *et al.* (2021) emphasise the importance of a needs and benefits assessment and highlight the role of stakeholder involvement and alignment between technology and organisation. Selten and Klievink (2024) add that adapting AI to existing organisational structures, improving employee skills and ensuring strategic alignment are key to the successful integration of AI into public administration.

As shown, the transformative nature of AI in public administration requires preparation in several critical areas to fully realise the potential of AI to create public value (Deloitte, 2020). In this context, Wirtz *et al.* (2020) point out that with the rapid development of AI combined with strict institutional regulations, public administration is struggling to keep pace and ensure adequate governance.

It is not only important that the technical challenges are solved, but also that organisational planning is in place to manage AI-enabled change (Mikalef *et al.*, 2022). Not only is research on AI adoption in public administration much sparser than in the private sector (Pechtor and Basl, 2023) and there is a lack of research on the organisational mechanisms of AI adoption in public administration (Neumann *et al.*, 2024), but to our knowledge, no systematic reviews and evaluations have been conducted that focus on organisational AI readiness models.

To address this research gap, this article has two objectives. First, it aims to provide a comprehensive review of existing AI organisational models and identify key elements. Second, it critically evaluates the existing models and lays the foundations for the development of a detailed AI readiness model tailored to public administration. Closing this research gap is critical to advancing the adoption of AI in public administration.

Without a clear understanding of organisational AI readiness, institutions risk an ineffective use of resources. A tailored AI readiness model for public administration is required to align organisational structures and strategies with AI technologies. This model would provide a basic framework for effective AI integration and benefit both academic research and practical policymaking. To this end, the following research questions were formulated in the study:

RQ1: To what extent do the existing models capture the multifaceted elements necessary for organisational AI readiness?

RQ2: Based on the elements they contain, do the models provide a standardised measure for assessing AI readiness in different sectors?

RQ3: In what specific ways do the current models of organisational readiness consider the specific challenges of AI adoption in public administrations?

Answering these research questions will contribute to the development of a more comprehensive framework for AI readiness and provide clearer guidance for

assessing organisational readiness and addressing the challenges of AI readiness in government structures.

2. Literature Review

In the field of AI research, terms such as AI readiness, AI preparedness and AI capability are often used as synonyms. Although they are closely related, their nuances deserve a closer look, especially in the context of public administration. AI readiness serves as a general indicator of an organisation's state of being ready to adopt and integrate AI, while AI preparedness and AI capability highlight specific facets of that readiness.

Sciberras and Dingli (2023) categorised the public administration's AI readiness into three levels: not yet ready, getting ready, and ready for implementation. AI preparedness as defined by Lee and Park (2023) includes aspects such as AI knowledge, replaceability, accountability and implementability and indicates an organisation's overall preparedness for AI adoption. This concept aligns with AI readiness, but does not directly address the complex, sector-specific challenges faced by public administrations, such as addressing ethical considerations and regulatory compliance.

Precursors of AI readiness such as "technology readiness", "digital readiness" and "digital maturity" provide basic insights into an organisation's capacity for technological change but have limited applicability to the specific requirements of AI in public administration. Digital readiness, defined as an organisation's preparedness to digitise (Nasution *et al.*, 2018; Soomro *et al.*, 2020), forms the basis for digital innovation.

Soomro *et al.* (2020) categorise digital readiness into four themes: digital systems and infrastructure, digital tools and applications, digital ecosystem and culture, and digital agents and capabilities. While this structured approach is beneficial for understanding digitalisation, it does not extend to the advanced infrastructural requirements of AI, such as autonomous decision making and comprehensive data governance (Russell and Norvig, 2016). In public administration, where AI must operate within a strict framework of accountability, transparency and ethical governance, models of digital readiness do not meet the more demanding requirements of AI adoption.

AI capability, defined as the ability to leverage organisational resources for AI deployment (Chowdhury *et al.*, 2023; Mikalef *et al.*, 2019; Mikalef and Gupta, 2021), is closely linked to the concept of readiness. Mikalef *et al.* (2019) describe AI capability as the use of organisational resources for tasks such as learning and reasoning, while Chowdhury *et al.* (2023) extend this to human resource management. Van Noordt and Tangi (2023) link AI capabilities in public administration to the development of e-government and emphasise the importance of

aligning AI with the goals of public administration.

However, this view often overlooks the critical distinction between technical capabilities and the broader organisational readiness required to ensure the ethical and effective implementation of AI in the public sphere. The dual meaning of AI capability, encompassing both organisational and technical aspects (OECD, 2021), highlights the need for models that can integrate these dimensions while meeting the specific challenges of public administration.

AI readiness indicates an organisation's preparedness to use AI, while AI maturity models assess the effective integration and use of AI to create public value (Alsheibani *et al.*, 2019; Saari *et al.*, 2019; Sadiq *et al.*, 2021). This distinction is particularly crucial in public administration, where the main objective is not only to implement AI, but also to improve the delivery of public services while complying with legal and ethical standards.

Existing models such as the Technology-Organisation-Environment (TOE) framework (Tornatzky and Fleischer, 1990), which focuses on technological, organisational and environmental factors, provide a useful lens for technology adoption, but they lack the depth necessary to address the specific challenges of AI in public administration. The TOE framework does not explicitly address issues such as data privacy, ethical considerations and the need for public transparency, all of which are of paramount importance in public administration.

The Diffusion of Innovations (DOI) model (Oliveira and Martins, 2011) explains how new technologies spread within organisations, but does not consider the complexity of integrating AI into existing public administration structures. Public administration faces additional layers of complexity, such as stakeholder engagement, regulatory oversight and managing public perception, which are not adequately addressed in the DOI model.

Similarly, the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al.*, 2003) emphasise user acceptance, which, while important, is only one aspect of the broader equation. These models do not fully consider the organisational readiness and policy alignment required for successful adoption of AI in public administration.

The Theory of Planned Behaviour (TPB) (Ajzen, 1991) adds another dimension by examining how attitudes, social norms and perceived control influence technology adoption. However, it remains limited in scope as it does not address the organisational and ethical complexities associated with the use of AI in public administration.

Other frameworks, such as the Benefits, Organisational readiness, and External pressure (BOE) framework (Iacovou *et al.*, 1995) and the Institutional Theory model

(Teo *et al.*, 2003), extend the framework by considering external pressures and institutional norms. However, they still do not provide a comprehensive framework for understanding the ethical, legal and operational challenges associated with AI in public administration.

The BOE framework evaluates technology adoption based on benefits, organisational readiness and external pressures, but does not address the ethical dilemmas and public accountability associated with AI adoption in public administration. The Institutional Theory model examines how social structures influence technology adoption, but does not address the need for transparent and ethical AI governance in the public services.

The Resource-Based View (RBV) model (Barney, 1996) emphasises the importance of IT resources and organisational capabilities for performance improvement. Although this model is valuable for understanding how resources contribute to AI readiness, it does not specifically address the challenge of balancing these resources with the unique requirements of public administration, such as ethical considerations and adherence to public policy standards. The RBV model does not provide guidance on how to navigate the difficult balance between utilising AI capabilities and maintaining public trust and accountability.

The existing literature reveals a significant gap in models that address the unique challenges of AI readiness in public administration in depth. Many studies have focused on isolated aspects, such as human resource management (Chowdhury *et al.*, 2023), talent acquisition (Pillai and Sivathanu, 2020), or the impact on specific employee groups such as managers (Nasrollahi and Ramezani, 2020).

Some studies focus on the symbiosis of humans and AI in decision-making (Jarrahi, 2018), while others shed light on AI readiness in small and medium-sized enterprises (SMEs) and emphasise the need for agile strategies due to limited resources and smaller budgets (Baabdullah *et al.*, 2021; Bettoni *et al.*, 2021; Schkarin and Dobhan, 2022).

Sector-specific studies have also been conducted in areas such as healthcare (Alami *et al.*, 2021; Vuong *et al.*, 2019) and the exhibition sector (Hradecky *et al.*, 2022). However, these studies do not fully capture the broader, multidimensional nature of AI readiness in public administration, which must balance innovation with regulatory compliance, ethical considerations and public accountability.

As shown, while various models offer insights into different aspects of AI readiness, they have significant limitations when applied to the public administration context. A tailored model that integrates organisational, ethical, legal and societal dimensions of AI readiness is critical for guiding public administrations in the effective adoption of AI technologies. Such a model would not only fill current knowledge gaps, but also support the development of strategic frameworks that align AI adoption with

public administration values and legal frameworks, ensuring the effective and responsible integration of AI into public service delivery, internal operations and policymaking.

3. Research Methodology

A systematic literature review (SLR) was conducted to answer the research questions and achieve the research objectives of the study. This approach ensured an appropriate, thorough, transparent and reproducible method for identifying, selecting and analysing the scientific literature on the research topic (Fink, 2007; Page *et al.*, 2021). The study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol (Moher *et al.*, 2009).

The use of PRISMA checklists improved the reporting quality of SLR and provided considerable transparency in the selection of documents (Knobloch *et al.*, 2011). According to Moher *et al.* (2009), the PRISMA protocol involves four phases: (1) identification, in which a comprehensive search captures all potential studies; (2) screening, in which irrelevant studies are removed based on titles and abstracts; (3) eligibility, a detailed assessment of full texts to ensure they meet the inclusion criteria; and (4) inclusion, in which the final selected studies are analysed and synthesised to answer the research questions.

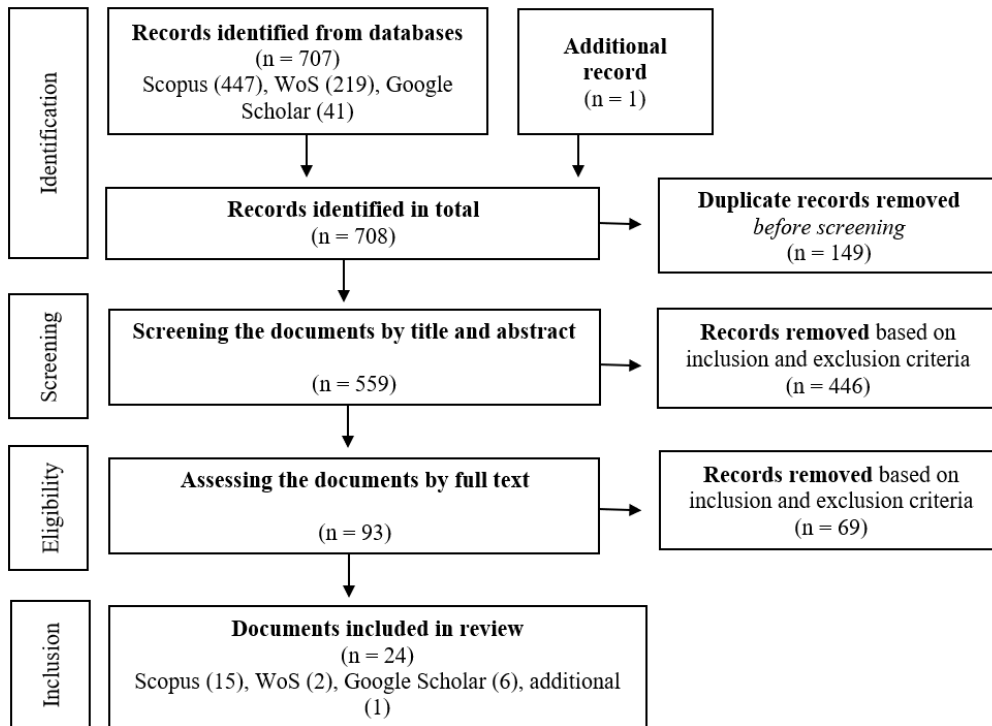
The scientific literature on organisational AI readiness was researched in Scopus, Web of Science (WoS) and Google Scholar. The databases listed were chosen because they are the most commonly used for searching academic literature in the social sciences and humanities, with Scopus being the world's leading bibliographic database for peer-reviewed literature in this field (Falagas *et al.*, 2008).

In addition, searching multiple databases helps to achieve comprehensive coverage of studies in the field. Based on previous studies in the relevant literature, an online database search was conducted using the following search query to collect the relevant studies: "AI readiness" OR "AI preparedness" OR "AI maturity" OR "AI capacity" OR "AI capability" OR "AI adoption" AND "organisation*" OR "organization*".

The mentioned keywords were searched in the titles, keywords and abstracts of the analysed documents. The identification of documents was not limited to specific subject areas or the period of publication, but only articles, conference papers, book chapters and books published in English were included in the search.

As shown in Figure 1, the search thus defined yielded 447 documents in the Scopus database, 219 documents in Wos and 41 documents in the Google Scholar database. At this stage, one document (Deloitte, 2020) that was not included in any of the databases used was also added to the database, bringing the original database to 708 documents.

Figure 1. Flow chart for determining the database according to the PRISMA protocol



Source: Own analysis.

Subsequently, 149 duplicates were removed from the database, leaving 559 records for further analysis. In the next step, the following eligibility criteria were used for preliminary screening based on the titles and abstracts of the documents: Inclusion criteria (that address AI readiness of organisations, regardless of sector; that make clear statements about models or frameworks on AI readiness; that elaborate, evaluate, improve or extend existing models; that comprehensively cover the investigated topic) and exclusion criteria (that do not refer to AI readiness of organisations; that refer to too narrow organisational aspects; that do not analyse models or frameworks for AI readiness; that mainly focus on technological aspects of AI in organisations).

After excluding 446 irrelevant records, 93 documents (52 from Scopus, 29 from Wos, 11 from Google Scholar and 1 additional document) remained in the database that were eligible for full-text analysis. Based on the full-text analysis of the articles, 24 documents (15 from Scopus, 2 from Wos, 6 from Google Scholar and 1 additional document) were finally included in the review based on content analysis, as shown in Figure 1.

The identified documents were retrieved and stored using NVivo14 software, which enabled systematic coding based on the research framework. Qualitative content analysis according to Schreier (2012) was chosen due to its structured yet adaptable approach suitable for the complexity of organisational AI readiness. It included thematic and relational analyses.

4. Research Results and Discussion

4.1 Comprehensive Review of Organisational AI Readiness Models

For this study, the Work System Framework by Alter (2013) was used to analyse the existing AI readiness models. This framework, supported by Tehrani *et al.* (2024), effectively categorises AI readiness into a multidimensional construct comprising nine essential elements: Processes, Participants, Information, Technologies, Products/Services, Customers, Environment, Infrastructure and Strategies (Table 1).

The decision to use this framework over others was based on its holistic view of organisational systems and its ability to detail how different components interact in the context of AI readiness, making it particularly suitable for the objectives of this study in the context of public administration. The coding framework was developed based on these nine elements and provides a structured means of categorising the data. By using this framework, the study enabled a thorough examination of both the individual elements and their interrelationships, ensuring a nuanced understanding of organisations' AI readiness.

Table 1. Elements of Alter's Work System Theory

Element	Description
Processes	All processes in connection with tangible or intangible products or services.
Participants	All persons interacting with the system, including IT users and non-users.
Information	Data and knowledge used, created or processed within the work system, from raw data to processed information and knowledge.
Technologies	Tools, hardware and software used by the participants in the work system and the automated agents.
Products/services	Goods or services that the work system produces or provides to customers, including design, development, production and delivery.
Customers	Individuals or organisations that receive or benefit from the products or services produced by the work system.
Environment	The broader context in which the work system operates, e.g. external factors such as regulations, market conditions and competitors that influence and interact with the work system.
Infrastructure	Human, technical and other essential resources required to support and be utilised by the work system.
Strategies	Overarching goals, objectives and plans that guide the operation and decision-making of the work system.

Source: Alter, 2013; Tehrani *et al.*, 2024.

In the search for models of organisational AI readiness, 24 suitable sources were found, which are listed in Table 2. The models presented in Table 2 cover several

elements of AI readiness in organisations, indicating a multidimensional nature of this phenomenon. Almost all (23) models analysed include the element of technology, processes (20) and participants (17) are also very important. On the other hand, products/services (6), strategies (13) and the environment (13) are the least present in the models analysed.

Looking at the individual models, the models containing 7 elements each are the most comprehensive. Among the general models, there is one by Dasgupta and Wendler (2019) and four such business models (Nortje and Grobbelaar, 2020; Pumplun *et al.*, 2019; Tehrani *et al.*, 2024; Yang *et al.*, 2024). Models that address AI readiness in public administration are Mikalef *et al.* (2022) and Pechtor and Basl (2023).

Table 2. Review of organisational AI readiness models based on the elements of the work system framework

No.	Model/ framework	Source	Processes	Participants	Information	Technologies	Products/services	Customers	Environment	Infrastructure	Strategies
General models											
1	Organisational AI readiness	Jöhnk <i>et al.</i> (2021)	x		x	x		x		x	x
2	Organisational readiness for dig. transformation	Lokuge <i>et al.</i> (2019)	x		x	x	x	x			x
3	Organisational AI readiness	Youssef <i>et al.</i> (2023)		x	x					x	x
4	Extended TOE	Alsheibani <i>et al.</i> (2018)		x		x		x		x	x
5	AI readiness for dig. transformation	Holmström (2022)	x		x	x				x	x
6	Technology, organisation, people (TOP)	Tursunbayeva and Gal (2024)	x	x	x	x		x			
7	Functionality, availability, complexity, cost (FACC)	Dasgupta and Wendler (2019)	x	x		x	x		x	x	x
Business sector models											
8	Digital organisational readiness	Machado <i>et al.</i> (2021)	x		x	x					x
9	AI capability	Mikalef and Gupta (2021)	x	x	x	x				x	x
10	Extended TOE	Najdawi (2020)	x	x		x		x	x		
11	TOE + Diffusion of innovations (DOI)	Nguyen <i>et al.</i> (2022)	x	x		x		x	x	x	
12	Business AI readiness	Nortje and Grobbelaar (2020)	x	x	x	x	x			x	x
13	Extended and deepened TOE	Pumplun <i>et al.</i> (2019)	x	x	x	x		x	x	x	

14	Eight dimensions of AI readiness	Tehrani <i>et al.</i> (2024)	x	x	x	x		x	x	x	
15	Extended TOE	Yang <i>et al.</i> (2024)	x			x	x	x	x	x	x
16	Organisational AI readiness	Aboelmaged (2014)		x		x		x		x	
17	Technology acceptance model (TAM)+TOE	Chatterjee <i>et al.</i> (2021)	x		x	x	x		x		
18	Technology, organisation, environment (TOE)	Gupta <i>et al.</i> (2022)	x	x		x			x	x	
19	Perceived characteristics innovating (PCI)	Issa <i>et al.</i> (2022)		x	x	x				x	x
Public administration models											
20	TOE	Madan and Ashok (2023)	x	x		x		x	x		
21	AI capability in government	Mikalef <i>et al.</i> (2022)	x	x	x	x		x	x		x
22	TOE	Neumann <i>et al.</i> (2024)	x	x		x		x	x		
23	Extended TOE	Pechtor and Basl (2023)	x		x	x	x	x	x	x	
24	AI readiness for government	Deloitte (2020)	x	x	x	x			x		x

Source: *Own analysis.*

Among the model groups, the general models contain fewer elements than business models and the public administration models, which are more comprehensive. This suggests that the model's specialisation in the specific area of AI readiness contributes to its thoroughness. While general models emphasise strategic aspects of AI readiness that are often overlooked in more specialised models, they tend to focus less on processes and the environment, elements that are covered in detail in business and public administration models.

4.2 Content Analysis of the Elements of Organisational AI Readiness Models

The following sections present the key characteristics and assessment of the organisational models for AI readiness based on the selected elements. The analysis focuses on the groups of elements listed in Table 2, namely general models (nos. 1–7), business models (nos. 8–19) and models specialised in public administration (nos. 20–24).

The **Processes** element in AI readiness models emphasises the need to standardise organisational processes for effective integration. Key aspects include securing IT infrastructure (Jöhnk *et al.*, 2021), fostering an adaptable workforce (Lokuge *et al.*, 2019) and managing change through reengineering (Dasgupta and Wendler, 2019; Tursunbayeva and Gal, 2024). Successful integration requires risk assessment, stakeholder analysis and data management (Machado *et al.*, 2021; Mikalef and

Gupta, 2021) as well as cost, quality and iterative development management (Nortje and Grobbelaar, 2020; Tehrani *et al.*, 2024).

In public administration, the focus is on strategic planning, redesigning processes and setting up monitoring systems (Madan and Ashok, 2023; Mikalef *et al.*, 2022; Neumann *et al.*, 2024; Deloitte, 2020). These models could be improved by incorporating citizen participation, ethical considerations and regulatory compliance to ensure alignment with broader societal needs.

The **Participants** element of AI readiness models includes stakeholders from academia, government, non-profits, the private sector and key decision makers (Youssef *et al.*, 2023). It also includes individuals from digital innovation fields, managers, employees and technical staff who are critical to AI integration (Alsheibani *et al.*, 2018; Dasgupta and Wendler, 2019; Tursunbayeva and Gal, 2024). Business models also include IT professionals, business analysts and executives who drive digital transformation (Mikalef and Gupta, 2021; Najdawi, 2020; Nguyen *et al.*, 2022).

In public administration, this extends to managers, technology managers and data scientists (Mikalef *et al.*, 2022; Neumann *et al.*, 2024; Deloitte, 2020). The involvement of ethics and legal experts and the promotion of cross-departmental collaboration could strengthen these models and ensure a more comprehensive ethical framework, especially in public organisations.

The **Information** element in AI readiness models focuses on the availability, quality, flow and knowledge management of data (Jöhnk *et al.*, 2021; Lokuge *et al.*, 2019). It emphasises the sharing, quality and protection of data (Holmström, 2022; Tursunbayeva and Gal, 2024; Youssef *et al.*, 2023) as well as the creation, processing and dissemination of structured information (Machado *et al.*, 2021). Business models emphasise AI training data and information networks (Mikalef and Gupta, 2021; Nortje and Grobbelaar, 2020).

In public administration, data is critical for training algorithms, making decisions and ensuring quality, availability and protection (Mikalef *et al.*, 2022; Pechtor and Basl, 2023). Extending the models to include system interoperability, enhanced security, real-time processing and feedback mechanisms would improve their adaptability to the evolving AI requirements in public administration.

The **Technologies** element in AI readiness models includes IT infrastructure, cloud services, business analytics and secure digital technologies (Jöhnk *et al.*, 2021; Lokuge *et al.*, 2019; Alsheibani *et al.*, 2018). It also includes machine learning algorithms, AI tools and technology management (Dasgupta and Wendler, 2019; Tursunbayeva and Gal, 2024; Machado *et al.*, 2021).

In business models, AI products and sector-specific systems drive growth (Mikalef and Gupta, 2021; Tehrani *et al.*, 2024). In public administration, AI tools optimise operations and service delivery (Madan and Ashok, 2023; Mikalef *et al.*, 2022). While the technology aspects are well addressed, related issues such as staff training, regulatory compliance and cross-departmental collaboration are often overlooked.

The **Products/Services** element in AI readiness models drives digital innovation and focuses on AI-driven products and services that improve efficiency and customer satisfaction (Lokuge *et al.*, 2019; Dasgupta and Wendler, 2019). In business models, it promotes digital innovations, customer partnerships and AI-supported services that improve quality and productivity (Nortje and Grobbelaar, 2020; Yang *et al.*, 2024; Chatterjee *et al.*, 2021).

In public administration, AI improves service delivery, automates tasks and manages resources (Pechtor and Basl, 2023). However, many models ignore crucial factors such as citizen-centricity, scalability and transparency, which are key to improving service delivery, efficiency and public trust.

The **Customers** element in AI readiness models emphasises the importance of understanding customer knowledge and acceptance of AI solutions (Jöhnk *et al.*, 2021) as well as fostering partnerships for collaborative innovation (Alsheibani *et al.*, 2018; Lokuge *et al.*, 2019). Business models focus on how external organisations benefit from AI innovations and improve service quality for stakeholders (Najdawi, 2020; Nguyen *et al.*, 2022).

In public administration, the focus is on end users, customer feedback and satisfaction (Madan and Ashok, 2023; Mikalef *et al.*, 2022; Neumann *et al.*, 2024; Pechtor and Basl, 2023). While these models address customer knowledge and service quality, they could be improved if they focused more on citizen engagement, transparency and trust in AI. Citizen engagement, although often emphasised, is rarely operationalised; readiness frameworks could address this by including structured feedback, consultation, and co-design practices as assessable elements.

The **Environment** element in AI readiness models focuses on regulatory frameworks, market conditions and competitive pressures that influence AI integration (Dasgupta and Wendler, 2019). Business models extend this to socio-economic factors and industry-specific regulations (Najdawi, 2020; Nguyen *et al.*, 2022; Yang *et al.*, 2024).

In public administration, the models consider regulatory requirements, sector-specific conditions, citizen pressure, data protection laws and ethical concerns (Madan and Ashok, 2023; Mikalef *et al.*, 2022; Neumann *et al.*, 2024; Deloitte, 2020; Pechtor and Basl, 2023). Including factors such as economic impact, cybersecurity threats and cultural norms would provide a more comprehensive view of the environment for AI readiness.

The **Infrastructure** element in AI readiness models includes resources such as funding, specialised personnel and IT systems (Alsheibani *et al.*, 2018; Jöhnk *et al.*, 2021; Lokuge *et al.*, 2019). It also includes data sharing, ethical considerations and maintaining a stable IT environment (Youssef *et al.*, 2023; Holmström, 2022; Dasgupta and Wendler, 2019). In organisations, the focus is on computing resources, skilled personnel and advanced data management (Mikalef and Gupta, 2021; Nguyen *et al.*, 2022; Yang *et al.*, 2024).

For public administration, scalable computing, data management systems and specialised hardware are crucial (Pechtor and Basl, 2023). To improve these models, aspects such as the integration of legacy systems, cybersecurity, interoperability and public-private partnerships should be considered.

The **Strategies** element in AI readiness models focuses on aligning AI initiatives with organisational goals and ensuring top management support (Jöhnk *et al.*, 2021). This includes clear communication of goals, coordination of data sharing, management support, alignment of resources, ethical considerations and fostering a culture of experimentation (Lokuge *et al.*, 2019; Alsheibani *et al.*, 2018; Dasgupta and Wendler, 2019).

Business models emphasise the role of AI for operational efficiency, innovation and market advantage (Machado *et al.*, 2021; Mikalef and Gupta, 2021), while public administration strategies focus on defining an AI vision, managing capabilities and allocating resources (Deloitte, 2020; Mikalef *et al.*, 2022). These models could be improved by focusing more on stakeholder engagement, sustainability, performance evaluation, adaptability, risk management and inclusivity.

4.3 Discussion

This study identifies critical gaps in current organisational AI readiness models for public administration, particularly in the integration of technical infrastructure, organisational factors and public governance. Existing models, such as those by Jöhnk *et al.* (2021) and Holmström (2022), focus heavily on technology and internal processes, but this approach is insufficient for public administration, where social, political and ethical considerations also play an important role, as emphasised by Selten and Klievink (2024).

The study emphasises that AI readiness must include not only internal efficiency, but also external engagement, ethical governance and citizen-centric services (Tangi *et al.*, 2024). A key finding is the underrepresentation of cross-departmental collaboration and stakeholder engagement in existing models. While many studies focus on technical aspects, they often neglect the challenges that arise for humans, such as ethics and employee adaptation (Mikalef *et al.*, 2022).

To ensure AI readiness, the motivation, capacities and innovation-related skills of public servants must be considered (Scaccia *et al.*, 2015), as Sienkiewicz-Małyjurek (2023) also found that social and organisational barriers are often cited as greater challenges than technical ones. AI readiness should therefore be seen as a broader organisational capability that includes cultural change and the development of social ties (Wilson and Broomfield, 2023). This study argues that public administration needs a broader framework than the Technology-Organisation-Environment (TOE) framework (Tornatzky and Fleischer, 1990) or models such as the Digital Readiness Model (Soomro *et al.*, 2020), which focus mainly on technology and processes.

It should incorporate citizen participation, transparency and open government practices and be consistent with studies such as Leikas *et al.* (2022) and Maditinos and Sidiropoulou (2020), which argue for a human-centred approach to AI. Current models ignore citizen feedback and ethical issues and are therefore too narrow for public administration, where trust and accountability are crucial.

The literature on the macro, meso and micro levels of governance (Criado *et al.*, 2024) provides a useful framework to understand why current AI readiness models for public administration are inadequate. At the macro level, the policy and regulatory environment determines how AI technologies are deployed and influences national strategies and policy frameworks.

However, the results of this study show that existing models often neglect macro-level constraints and instead focus on technical readiness at the meso-level (internal processes) without considering the policy-level integration required for cross-sector collaboration. As van Noordt and Misuraca (2022) found, AI applications vary significantly between different governance functions, with different types of AI technologies required for service delivery, internal management and policymaking.

These findings suggest that future models for public administration need to consider the heterogeneity of AI applications and their impact at multiple levels. The ethical implications of AI adoption in public administration are another critical aspect that is neglected in current models.

This study emphasises the need for a robust ethical framework for AI, especially given the findings that transparency, explainability and accountability are essential for AI readiness in public administration.

As Radclyffe *et al.* (2023) noted, while steps have been taken to establish an ethical governance framework, public organisations still face significant challenges in embedding these principles into their AI systems.

The findings of this study confirm that ethics and transparency must not be treated as peripheral issues but should be central elements of AI readiness models to ensure

that AI systems interact with public employees and citizens in a way that promotes trust, responsibility and public accountability.

The cognitive engagement aspect of AI investigated by Mikalef *et al.* (2023) raises further concerns. Their findings suggest that cognitive engagement has a negative impact on organisational performance, primarily because it disrupts established bureaucratic workflows. This is consistent with the findings of this study, which suggest that AI systems implemented without careful consideration of their impact on human roles and decision-making processes can lead to reduced efficiency and increased resistance from public servants.

Ethical concerns about AI systems making autonomous decisions without human oversight, as discussed by De Cremer and Narayanan (2023), also complicate the adoption of cognitive technologies in public governance. The findings suggest that a hybrid approach is needed, where AI supports, but does not replace, human decision-making.

Given the limitations of existing models, this study calls for a comprehensive, multidimensional framework for AI readiness in public administration. The framework should go beyond improving internal processes and consider the broader social, ethical and political context. As Criado and Gil-Garcia (2019) and Sun and Medaglia (2019) emphasise, AI can create public value through collaborative governance and social inclusion.

To achieve this, it is necessary to balance government mandates with internal efficiency (Novachenko *et al.*, 2020; Wirtz *et al.*, 2019) and adopt a people-centric approach (Leikas *et al.*, 2022; Wilkens *et al.*, 2023) that emphasises stakeholder engagement, cross-departmental collaboration and continuous learning. The proposed holistic framework, shown in Figure 2, encompasses these dimensions and focuses on citizen-centric services, risk management, policy integration and ethical governance (European Commission, 2024).

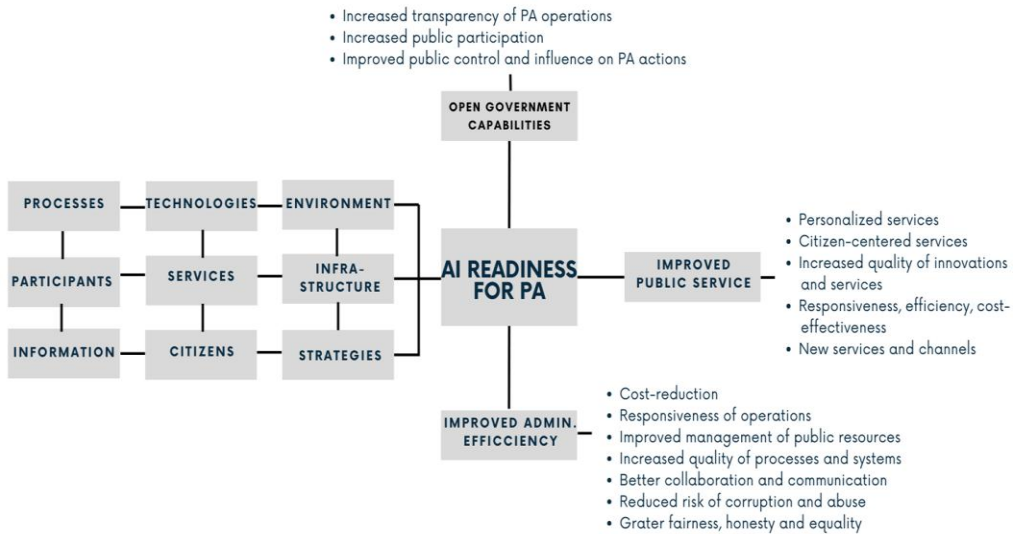
Building on Tomažević *et al.* (2024) and Bracci *et al.* (2021), the model emphasises transparency, fairness and inclusivity and ensures that AI is aligned with public values. The inclusion of open governance features is critical to building trust and accountability as it makes AI decisions accessible and accountable and supports efficient, cost-effective public services (van Noordt and Misuraca, 2022).

This study highlights the need for a holistic framework for AI readiness that integrates technological, organisational and societal dimensions and is guided by the principles of good governance (Durman *et al.*, 2020). Current models are insufficient to address the complex challenges of AI in public administration.

The proposed framework fills these gaps by incorporating cross-departmental collaboration, citizen participation and a human-centred approach to AI governance

(Wilkens *et al.*, 2023). It goes beyond existing models by focusing on open government, ethical governance and the co-creation of public value (Criado and Gil-Garcia, 2019; van Noordt and Tangi, 2023) and ensuring that AI technologies are transparent, accountable and focused on public value (Valle-Cruz, 2019).

Figure 2. Proposal for an initial basis for an organisational AI readiness model for public administration



Source: Own analysis, adapted from Alter, 2013; European Commission, 2024.

5. Conclusion

This PRISMA-based SLR article fills a gap in AI readiness models for public administration by proposing a context-specific approach that incorporates strategies, services and the socio-political environment. It integrates operations, service delivery and policymaking and focuses on a secure IT infrastructure, an empowered workforce and continuous digital innovation.

The study extends the theory of AI readiness by incorporating citizen engagement, policy alignment and regulatory compliance. It introduces multi-level governance, ethical, social and transparency aspects and provides a holistic, people-centric approach. The framework helps practitioners to align AI initiatives with strategic goals, engage stakeholders and overcome barriers such as resistance to change. It emphasises citizen participation, transparency and open government to build trust, and advocates for clearer regulatory frameworks, innovation support and cybersecurity measures.

The present work has limitations as it follows the PRISMA-based SLR protocol and may not have considered all relevant sources. Despite thorough analysis, some aspects may have been overlooked. While the paper provides a basis for developing

an AI readiness model in public administration, further research is needed to validate and refine the framework. Empirical studies are required to test the applicability of the model at different levels of government and governance contexts, while comparative studies could explore global differences in AI readiness and contextual success factors.

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Specifically, ChatGPT was employed to assist with grammar checks, enhance clarity, and polish language in certain sections of the article. It is crucial to emphasise that the role of ChatGPT was minor and purely supportive in nature. The core content of the article, including all scientific interpretations, conclusions, and critical revisions, was exclusively conducted by the human authors. The AI tool did not contribute to the article's intellectual content or scientific insights.

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