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From Electronic Government to Artificial Intelligence Government: Redesigning Iran's Public Administration Architecture for Intelligent Governance

Mohammad Movahedinia[1]*

1. M.A. Graduate in Public Policy, Faculty of Law and Political Science, University of Tehran, Tehran, Iran

*Correspondence: Mo.movahedinia@ut.ac.ir

Abstract

This study aimed to identify and explain the key dimensions, components, and architectural requirements for redesigning Iran's public administration system in the transition from e-government to AI-government for the realization of intelligent governance. This applied qualitative study was conducted using an exploratory model-development approach. The study population consisted of experts, senior managers, university faculty members, digital transformation specialists, artificial intelligence experts, and public policy professionals based in Tehran. Using purposive sampling, 24 participants were selected according to their academic expertise, professional experience, familiarity with Iran's public administration system, and knowledge of e-government, smart government, digital governance, or AI-based administrative transformation. Data were collected through semi-structured interviews, document analysis, and expert validation. The interviews focused on the limitations of existing e-government architecture, requirements of AI-government, data governance, interoperability, ethical and legal considerations, intelligent public services, administrative process redesign, and institutional readiness. Data were analyzed through thematic analysis using open and axial coding. Credibility was strengthened through expert review, member checking, triangulation, and repeated comparison of codes and categories. The analysis inferred four major architectural dimensions for Iran's transition from e-government to AI-government: foundational digital and data infrastructure, intelligent administrative and service architecture, legal, ethical, and accountability architecture, and institutional and human capacity architecture. The most emphasized components were integrated data governance, inter-organizational interoperability, secure digital infrastructure, AI-based decision support, administrative process redesign, proactive and personalized public services, algorithmic transparency, explainability, privacy protection, human oversight, citizen trust, AI literacy, digital leadership, and continuous performance evaluation. The proposed model showed that AI-government is not the mere adoption of artificial intelligence tools, but a layered transformation requiring the alignment of technology, data, law, ethics, organization, and public value. The transition from e-government to AI-government in Iran requires comprehensive redesign of public administration architecture through integrated data systems, interoperable platforms, intelligent decision-support mechanisms, ethical and legal safeguards, skilled human resources, and citizen-centered accountability.

Keywords: AI-Government; E-Government; Intelligent Governance; Public Administration; Digital Transformation; Artificial Intelligence; Iran.

1. Introduction

Public administration is undergoing a profound architectural transformation as governments move beyond the digitization of administrative procedures toward data-driven, algorithmically supported, and artificially intelligent modes of governance. The first generation of e-government was primarily concerned with transferring public services from paper-based and face-to-face channels to electronic platforms, improving access to information, reducing transaction costs, and increasing administrative efficiency. However, the contemporary transformation of government is no longer limited to the online delivery of services. It increasingly involves the redesign of governance structures, decision-making systems, data infrastructures, institutional capacities, and accountability mechanisms. In this context, digital government has evolved from a service-delivery paradigm into a strategic governance paradigm in which public value is produced through the integration of technology, data, institutions, citizens, and policy processes. Reviews of digital government evolution and maturity models show that governments have gradually moved from basic information provision and transactional e-services toward more integrated, participatory, and intelligent forms of public administration (Abu Bakar et al., 2020). This development indicates that the next stage of public-sector transformation requires not merely technological modernization, but a reconfiguration of the administrative architecture through which the state collects data, processes information, makes decisions, delivers services, and remains accountable to citizens.

The concept of e-government has historically been associated with the use of information and communication technologies to improve public service delivery, administrative transparency, and interaction between government, citizens, businesses, and other institutions. Nevertheless, the limitations of traditional e-government models have become increasingly evident. Many e-government initiatives remain fragmented, organization-centered, portal-based, and insufficiently integrated with the deeper decision-making and policy functions of government. Digital transformation, in contrast, refers to a more comprehensive process of organizational and institutional change in which digital technologies reshape structures, routines, strategies, and service logics. Expert-based research on digital transformation has emphasized that transformation is not equivalent to digitization; rather, it requires changes in organizational processes, leadership, capabilities, culture, and value creation mechanisms (Mergel et al., 2019). Therefore, the transition from e-government to AI-government should be understood as part of a broader movement from electronic service provision to intelligent governance, where artificial intelligence, data science, and digital-era institutional design become central to public administration.

The global literature on digital-era governance suggests that the public sector is entering a new phase in which data science and artificial intelligence are becoming embedded in core governmental functions. Dunleavy and Margetts describe this development as a third wave of digital-era governance, in which data-intensive administrative systems, predictive analytics, platform-based coordination, and automated decision support change the operating logic of government (Dunleavy & Margetts, 2023). Similarly, studies of artificial intelligence in the public sector show that AI can be applied to citizen services, fraud detection, predictive regulation, resource allocation, risk management, public health, taxation, policing, social protection, and administrative decision-making (Wirtz et al., 2019). These applications suggest that AI-government is not simply an advanced form of e-government, but a qualitatively different administrative model in which the state gains the capacity to learn from data, anticipate needs, simulate policy outcomes, personalize services, and support complex decisions in real time.

Artificial intelligence has become a strategic concern for governments because it changes both the instruments and the institutional responsibilities of public administration. A systematic review of AI in public governance shows that AI has implications for efficiency, responsiveness, accountability, transparency, discretion, citizen participation, organizational capacity, and public value creation (Zuiderwijk et al., 2021). In practical terms, AI can support governments by improving decision accuracy, identifying patterns in large administrative datasets, detecting service needs before citizens submit requests, and enabling more adaptive public policies. At the same time, AI introduces new risks, including algorithmic bias, opacity, surveillance, privacy violations, unequal access, automation of discretionary power, and unclear responsibility for machine-supported decisions. Therefore, the transformation from e-government to AI-government requires a governance architecture that integrates technological capacity with legal safeguards, ethical standards, institutional accountability, and human oversight. The dark sides of AI in public administration have been widely discussed, particularly the risks related to discrimination,

manipulation, loss of control, lack of transparency, and threats to democratic legitimacy (Wirtz et al., 2020). Consequently, any model of AI-government must address both the opportunities and the risks of algorithmic administration.

Recent scholarship has increasingly emphasized that AI-enabled government should be examined across multiple levels of analysis. Criado, Sandoval-Almazan, and Gil-Garcia argue that artificial intelligence in public administration involves micro-level actors, meso-level organizational arrangements, and macro-level policy and governance frameworks (Criado et al., 2025). This perspective is important because AI-government cannot be reduced to software deployment or technical infrastructure. At the micro level, public employees, managers, citizens, data scientists, and policy specialists interact with AI systems and shape their use. At the meso level, public organizations must redesign workflows, build data capabilities, create interdisciplinary teams, and establish coordination mechanisms. At the macro level, governments must develop policies, standards, ethical rules, legal frameworks, and national strategies to regulate and guide AI adoption. Similarly, the notion of an algorithmic state architecture proposes an integrated framework for AI-enabled government, emphasizing that algorithmic systems require alignment among data infrastructure, institutional design, accountability mechanisms, and public-sector capabilities (Engin et al., 2025). These approaches show that AI-government must be conceptualized as an architecture rather than as a collection of independent technologies.

Internationally, many governments are beginning to design AI-oriented strategies that move beyond conventional digital government programs. Comparative analysis of national AI strategies in Europe indicates that governments are increasingly adopting policy initiatives to integrate artificial intelligence into public-sector operations, although there are variations in strategic maturity, institutional coordination, ethical regulation, and implementation capacity (van Noordt et al., 2025). Landscaping research on the use of AI across the European Union also demonstrates that governments are experimenting with AI in areas such as public service delivery, internal administration, decision support, regulation, and citizen interaction (van Noordt & Misuraca, 2022). These developments are reinforced by international policy guidance emphasizing that AI is becoming relevant to core government functions, including policy design, regulation, budgeting, public employment, procurement, service delivery, and administrative performance management (Oecd, 2025). Some governments have already articulated AI-native government strategies, such as Abu Dhabi's Government Digital Strategy 2025–2027, which explicitly frames AI as a central component of future government operations and digital public-sector transformation (Department of Government Enablement - Abu, 2025). These examples demonstrate that AI-government is becoming a practical policy agenda, not merely a theoretical concept.

For countries such as Iran, the transition from e-government to AI-government is both necessary and complex. Iran has accumulated experience in e-government, electronic services, and digital administrative platforms, but the country continues to face structural, organizational, legal, technological, and cultural barriers that limit the realization of integrated digital governance. Early research on e-government service delivery in Iran identified major obstacles such as organizational resistance, inadequate infrastructure, weak coordination, limited managerial commitment, insufficient legal support, and low levels of user trust (Bigdeli & de Cesare, 2011). Later meta-analytic evidence on barriers to the establishment of e-government in Iran also emphasized the persistence of managerial, organizational, technical, legal, cultural, economic, and human-resource challenges (Ghorbanizadeh et al., 2014). These findings indicate that the problems of e-government in Iran are not merely technical; they are embedded in the wider architecture of public administration. Therefore, if AI-government is implemented without addressing the unresolved weaknesses of e-government, it may reproduce existing fragmentation, inefficiency, opacity, and inequality in more advanced technological forms.

Iranian scholarship has gradually moved from e-government toward smart government and intelligent government as more advanced models of public-sector transformation. A meta-synthesis-based model of smart government identified dimensions such as technology, governance, citizen participation, service quality, human resources, organizational readiness, and legal infrastructure as important components of smart government (Taghva et al., 2017). Research on the realization of electronic governance in Iran has also considered intelligent government as a developmental step beyond electronic governance, emphasizing that smart and intelligent public administration requires greater integration, participation, and technological maturity (Shojaan et al., 2018). More recent qualitative modeling of smart government development in Iranian public-sector

institutions has highlighted the importance of digital infrastructure, organizational support, leadership, policy-making, citizen orientation, and inter-institutional coordination (Fathi et al., 2024). Quantitative analysis of factors affecting the realization of smart government in Iran has further emphasized digital governance dimensions as key determinants of smart government development (Fathi et al., 2025). These studies provide an important foundation for examining AI-government in Iran, but they do not fully address how artificial intelligence changes the architecture of public administration.

Recent Iranian studies have also begun to examine AI governance more directly. Torabi and Eghbal proposed an artificial intelligence governance model for state administration in the Islamic Republic of Iran, indicating that the governance of AI requires institutional arrangements, policy coordination, ethical regulation, legal frameworks, and strategic oversight (Torabi & Eghbal, 2025). At the same time, analyses of digital transformation in the Iranian public sector show that the transformation process faces challenges such as fragmented policy implementation, weak inter-organizational coordination, insufficient digital skills, lack of integrated data governance, resistance to change, and gaps between policy design and administrative execution (Danaeefard et al., 2024). These findings are particularly relevant to AI-government because artificial intelligence depends heavily on data quality, interoperability, institutional readiness, and reliable administrative processes. Without these foundations, AI systems cannot support valid, fair, and accountable governance. Thus, the Iranian public sector requires not only AI tools, but a redesigned administrative architecture capable of governing data, algorithms, organizations, citizens' rights, and public value.

The position of Iran in international digital government assessments also reinforces the need for architectural redesign. Analyses of Iran's status in the 2024 E-Government Development Index point to the continuing importance of digital infrastructure, online services, human capital, and institutional capacity for improving national digital government performance (Shakhes Governance Think, 2024). Although such indices are not complete measures of intelligent governance, they provide a useful diagnostic perspective on the readiness of public administration for more advanced forms of digital transformation. AI-government requires a higher level of maturity than traditional e-government because it depends on integrated datasets, real-time administrative coordination, secure digital identity systems, algorithmic transparency, automated and semi-automated decision support, and continuous monitoring of outcomes. Therefore, a country's transition toward AI-government must be based on a staged and realistic understanding of its existing digital government capacities and institutional constraints.

The Iranian AI landscape also includes paradoxes that must be considered in public administration redesign. On the one hand, artificial intelligence is recognized as a strategic technology for innovation, national development, service modernization, and administrative efficiency. On the other hand, concerns have been raised regarding control over innovation, governance restrictions, regulatory uncertainty, infrastructural limitations, and tensions between technological development and institutional openness (Filterwatch, 2025). These tensions are highly relevant to AI-government because intelligent governance depends not only on technological investment, but also on trust, transparency, responsible regulation, data access, innovation ecosystems, and cooperation among government, academia, and the private sector. If AI development is driven only by control-oriented or fragmented administrative logics, it may fail to produce public value and may intensify distrust between citizens and the state. Therefore, AI-government in Iran must be framed around responsible intelligence, institutional accountability, service improvement, and citizen-centered governance.

A key conceptual challenge is that the transition from e-government to AI-government requires a new type of public administration architecture. In traditional bureaucratic administration, decision-making is hierarchical, rule-based, document-centered, and often slow. In e-government, many of these processes are digitized, but their underlying logic may remain unchanged. In AI-government, however, administrative architecture must become data-centered, interoperable, predictive, adaptive, and accountable. This means that public organizations must be able to share data securely, use AI-supported analytics, automate routine procedures, personalize services, monitor outcomes, and explain algorithmically supported decisions. The design of such an architecture requires conceptual clarity. Conceptual research is especially valuable when a field is emerging, fragmented, or in need of integrative frameworks, because it can clarify concepts, organize existing knowledge, develop typologies, and propose new theoretical relationships (Jaakkola, 2020). In the case of AI-government, a conceptual and qualitative approach can help identify the components that must be aligned for intelligent governance to become institutionally feasible.

Despite the growing literature on e-government, smart government, digital transformation, and AI in the public sector, there remains a need for a context-sensitive model that explains how Iran's public administration can move from e-government toward AI-government. Existing studies have separately examined barriers to e-government, dimensions of smart government, challenges of digital transformation, AI applications in the public sector, and AI governance frameworks. However, fewer studies have integrated these streams into a coherent administrative architecture for Iran. This gap is important because AI-government cannot be imported as a ready-made model from other countries. It must be adapted to Iran's institutional structure, legal environment, administrative culture, technological capacity, data infrastructure, and citizen-state relations. Therefore, redesigning Iran's public administration architecture for intelligent governance requires identifying the foundational, organizational, legal, ethical, technological, and human-capacity components that enable the transition from electronic to artificial intelligence-based government.

Accordingly, the aim of this study was to identify and explain the key dimensions, components, and architectural requirements for redesigning Iran's public administration system in the transition from e-government to AI-government for the realization of intelligent governance.

2. Methods and Materials

This study was designed as an applied qualitative research project with an exploratory model-development approach. The purpose of the study was to identify the architectural requirements, institutional components, technological capacities, governance mechanisms, and implementation conditions necessary for the transition from e-government to AI-government in Iran's public administration system. Because the subject of the study required specialized knowledge of public administration, digital governance, artificial intelligence, public-sector transformation, policy design, and administrative reform, the study population consisted of experts, senior managers, university faculty members, and specialists working in Tehran. Tehran was selected as the research setting because it is the administrative and policy-making center of Iran and includes the main governmental institutions, national digital transformation bodies, universities, research centers, and technology-oriented public agencies involved in the design and implementation of e-government and intelligent governance initiatives. The participants included 24 experts selected through purposive sampling based on their professional experience, academic background, and practical involvement in public administration modernization, e-government development, information technology governance, artificial intelligence applications, public policy, and administrative systems reform. Inclusion criteria consisted of having at least five years of relevant professional or academic experience, familiarity with Iran's public administration structure, knowledge of digital government or artificial intelligence governance, and willingness to participate in an in-depth interview. Sampling continued until theoretical saturation was reached, meaning that the last interviews did not generate substantially new concepts, categories, or analytical insights. The final participants included university professors in public administration and information systems, senior managers from governmental organizations, experts in digital transformation and information technology, and policy specialists familiar with the legal, organizational, and technical challenges of redesigning administrative architecture for intelligent governance.

Data were collected using a semi-structured interview protocol, a document analysis checklist, and an expert validation form. The semi-structured interview protocol was developed based on the objectives of the study and the conceptual scope of e-government, AI-government, intelligent governance, public administration architecture, data-driven decision-making, algorithmic governance, interoperability, public service redesign, transparency, accountability, and institutional readiness. The interview protocol included open-ended questions designed to elicit expert views regarding the limitations of Iran's existing e-government architecture, the requirements for transition toward AI-based public administration, the role of data infrastructure and inter-organizational integration, the legal and ethical prerequisites of artificial intelligence in government, the organizational capacities required for intelligent governance, and the mechanisms needed to ensure accountability, citizen trust, privacy protection, and administrative efficiency. Follow-up and probing questions were used during the interviews to obtain deeper explanations and clarify the participants' perspectives. The content validity of the interview protocol was reviewed and confirmed by three faculty members specializing in public administration, digital governance, and qualitative research methodology. Before the main data collection phase, two pilot interviews were conducted to examine the clarity, relevance,

and logical sequence of the questions, and minor revisions were made accordingly. The interviews were conducted individually, recorded with participants' permission, and transcribed verbatim for analysis.

The document analysis checklist was used to examine relevant national policies, administrative transformation documents, digital government programs, regulations, strategic plans, and organizational reports related to e-government, smart government, public-sector digitalization, data governance, and artificial intelligence policy in Iran. This checklist was designed to support triangulation and to compare the interview findings with formal policy and administrative documents. The checklist focused on major analytical domains, including legal and regulatory foundations, technological infrastructure, data management, inter-agency interoperability, human resource capacity, service delivery models, citizen-centered governance, cyber security, ethical principles, and evaluation mechanisms. The use of document analysis helped the researcher identify gaps between official policy intentions and the practical requirements expressed by experts. It also strengthened the credibility of the findings by allowing the extracted categories from interviews to be compared with existing institutional and policy evidence.

An expert validation form was also used after the initial extraction of concepts, categories, and dimensions. This form was prepared to assess the relevance, clarity, comprehensiveness, and applicability of the proposed components of AI-government architecture in Iran's public administration system. The form was provided to a selected group of participating experts who had the highest level of familiarity with digital government, administrative reform, and artificial intelligence governance. Experts reviewed the preliminary structure and provided feedback on whether the identified dimensions accurately represented the requirements of transition from e-government to AI-government. Their comments were used to refine the final model, merge overlapping categories, clarify ambiguous concepts, and improve the conceptual coherence of the proposed architecture. To ensure trustworthiness, the study used member checking, expert review, prolonged engagement with the data, peer debriefing, and maximum variation in participant selection. Reliability was strengthened through systematic coding procedures, repeated review of transcripts, comparison of codes across interviews, and documentation of analytical decisions throughout the research process.

Data analysis was conducted using thematic analysis with an inductive-deductive orientation. After each interview was transcribed, the text was read several times to obtain a comprehensive understanding of the participants' views. In the first stage, open coding was performed by identifying meaningful statements, key concepts, and initial codes related to the transition from e-government to AI-government. These codes included issues such as fragmented data systems, weak interoperability, limited algorithmic readiness, lack of integrated administrative platforms, legal uncertainty, insufficient digital skills among public employees, weak public trust, cyber security concerns, ethical risks, and the need for citizen-centered intelligent services. In the second stage, similar codes were compared, merged, and organized into broader subcategories. In the third stage, axial coding was used to identify relationships among subcategories and to develop main categories representing the essential dimensions of Iran's AI-government architecture. These categories were then interpreted in relation to the research objective and the broader logic of intelligent governance.

The analysis proceeded through continuous comparison among interviews, documents, and expert validation feedback. Data from document analysis were used to confirm, supplement, or contrast the themes extracted from interviews. This triangulation made it possible to distinguish between formal policy priorities and practical implementation challenges. The final analytical process led to the identification of major architectural dimensions, including data governance and interoperability, intelligent public service delivery, AI-based decision support, legal and ethical governance, organizational capacity building, digital infrastructure, citizen participation and trust, transparency and accountability, cyber security, and performance evaluation. To improve the dependability of the analysis, the coding process was reviewed several times, and disagreements or ambiguities in code classification were resolved through discussion with qualitative research experts. The credibility of the findings was enhanced through member checking, whereby selected participants reviewed the preliminary categories and confirmed their consistency with their experiences and professional judgments. The final model was developed by integrating the coded interview data, documentary evidence, and expert validation results into a coherent framework for redesigning Iran's public administration architecture for intelligent governance.

3. Findings and Results

The findings of the study were obtained from the analysis of semi-structured interviews with 24 experts based in Tehran who had specialized academic, managerial, technological, or policy-related experience in the fields of public administration, e-government, digital transformation, artificial intelligence, data governance, and administrative reform. The participants consisted of 16 men and 8 women. In terms of educational level, 14 participants held doctoral degrees and 10 participants held master's degrees in public administration, information technology management, public policy, computer engineering, management, law, and related disciplines. Regarding professional position, 8 participants were university faculty members, 7 were senior or middle-level managers in public-sector organizations, 5 were experts in information technology, digital transformation, and artificial intelligence systems, and 4 were policy specialists or legal-administrative consultants involved in governance reform and public-sector modernization. The participants' age ranged from 34 to 62 years, with an average age of approximately 46 years. Their professional experience ranged from 6 to 28 years, and most participants had more than 10 years of experience in administrative, academic, or technological domains related to public-sector transformation. The diversity of participants made it possible to examine the transition from e-government to AI-government from multiple perspectives, including institutional, technological, legal, ethical, managerial, and citizen-centered viewpoints. The analysis showed that participants generally considered the movement toward AI-government not merely as a technological upgrade, but as a structural redesign of Iran's public administration architecture based on data integration, intelligent decision-making, algorithmic accountability, administrative interoperability, and citizen-oriented service delivery.

Table 1. Main Dimensions, Categories, and Subcategories Extracted from the Qualitative Analysis

Macro dimension	Main category	Subcategories	Representative analytical meaning
Foundational digital and data infrastructure	Integrated data governance	National data architecture, data ownership, data quality, data standardization, data sharing protocols, metadata management	AI-government requires reliable, standardized, and interoperable data systems; without integrated data governance, artificial intelligence cannot produce valid administrative decisions or intelligent services.
Foundational digital and data infrastructure	Interoperability of public organizations	Inter-agency platforms, unified databases, shared service infrastructure, elimination of data silos, real-time administrative exchange	Fragmented systems and isolated organizational databases were identified as major barriers to intelligent governance; AI-government depends on connected organizations and machine-readable administrative processes.
Foundational digital and data infrastructure	Secure digital infrastructure	Cloud infrastructure, cyber security, identity management, digital authentication, secure data exchange, system resilience	Participants emphasized that the transition to AI-government must be based on secure and resilient infrastructure capable of protecting sensitive citizen and organizational data.
Intelligent administrative and service architecture	AI-based public service delivery	Personalized services, predictive service provision, automated service routing, proactive government, 24-hour digital service access	AI-government should move beyond online service portals and provide intelligent, anticipatory, personalized, and need-based public services.
Intelligent administrative and service architecture	Algorithmic decision support	Predictive analytics, intelligent dashboards, risk assessment systems, evidence-based policy support, automated administrative recommendations	Artificial intelligence was viewed as a tool for improving the quality, speed, and evidence base of administrative and policy decisions, while final accountability should remain institutionally defined.
Intelligent administrative and service architecture	Process redesign and automation	Administrative process mining, reduction of bureaucratic steps, robotic process automation, intelligent workflow management, service simplification	Participants stated that AI should not be added to inefficient bureaucratic processes; rather, administrative processes must first be redesigned, simplified, and then intelligently automated.
Legal, ethical, and accountability architecture	Algorithmic transparency and explainability	Explainable AI, auditability, traceable decisions, transparency of automated procedures, public justification of algorithmic outputs	The experts emphasized that AI-government will not be legitimate unless algorithmic decisions are explainable, reviewable, and understandable to both institutions and citizens.
Legal, ethical, and accountability architecture	Ethical and legal regulation	Privacy protection, data protection law, legal responsibility, ethical AI standards, prevention of discrimination, human oversight	The use of AI in government requires clear legal frameworks to determine responsibility, protect citizens' rights, and prevent biased or unlawful automated decision-making.
Legal, ethical, and accountability architecture	Trust, legitimacy, and citizen rights	Citizen consent, public trust, digital inclusion, complaint mechanisms, right to appeal, protection against administrative opacity	Participants considered public trust and citizen rights as central components of AI-government, especially because algorithmic systems can affect access to services, benefits, and administrative decisions.
Institutional and human capacity architecture	Administrative capacity building	Digital leadership, AI literacy of managers, institutional learning, change management, inter-sectoral coordination	Successful AI-government requires capable managers and institutions that understand artificial intelligence and can govern organizational transformation strategically.

Institutional and human capacity architecture	Human capital and professional competencies	Data specialists, AI experts, public-sector analysts, interdisciplinary teams, continuous training, ethical awareness	Participants noted that public administration requires new professional roles and competencies, including data science, AI ethics, cyber security, and digital policy analysis.
Institutional and human capacity architecture	Evaluation and adaptive governance	Performance indicators, continuous monitoring, impact assessment, feedback loops, adaptive policymaking, model updating	AI-government should be governed through continuous evaluation because artificial intelligence systems require monitoring, correction, updating, and institutional learning over time.

As shown in Table 1, the qualitative analysis led to the identification of four macro dimensions that together explain the architecture required for transition from e-government to AI-government in Iran's public administration system. The first macro dimension refers to foundational digital and data infrastructure and indicates that intelligent governance cannot be achieved without integrated data governance, organizational interoperability, and secure digital infrastructure. The second macro dimension concerns intelligent administrative and service architecture and shows that AI-government must be understood as a transformation in the logic of public service delivery, administrative decision-making, and process design. The third macro dimension refers to legal, ethical, and accountability architecture and demonstrates that the use of artificial intelligence in government cannot be separated from transparency, explainability, privacy protection, responsibility, and citizens' rights. The fourth macro dimension concerns institutional and human capacity architecture and indicates that technological transformation requires organizational readiness, skilled human resources, digital leadership, and continuous evaluation. Overall, the findings show that AI-government is a multidimensional administrative model in which technology, law, ethics, management, and public value must be integrated into a coherent governance architecture.

Table 2. Frequency and Consensus Level of Extracted Components among Participants

Extracted component	Number of participants referring to the component	Approximate code frequency	Consensus level	Interpretation
Integrated data governance	24	61	Very high	All participants emphasized that integrated, standardized, and high-quality data is the foundation of AI-government.
Interoperability among public organizations	23	54	Very high	Most participants identified institutional fragmentation and lack of data exchange as one of the most serious barriers to intelligent governance.
Legal and ethical regulation of AI	22	49	Very high	Participants strongly emphasized the need for clear legal responsibility, privacy protection, and ethical standards before expanding AI use in government.
AI-based decision support	21	46	High	Experts considered AI useful for improving administrative decisions, but stressed the need for human oversight and institutional accountability.
Cyber security and secure infrastructure	21	43	High	Participants viewed cyber security and infrastructure resilience as essential because AI-government increases dependence on connected digital systems.
Administrative process redesign	20	41	High	Many participants stated that AI cannot be effective if applied to outdated, complex, and inefficient bureaucratic procedures.
Citizen trust and digital inclusion	20	38	High	Participants emphasized that intelligent governance must increase public trust and prevent exclusion of citizens with limited digital access.
Human capital and AI literacy	19	36	High	The need for specialized human resources, AI-aware managers, and continuous training was repeatedly emphasized.
Algorithmic transparency and explainability	18	34	High	Participants considered explainability necessary for preventing administrative opacity and protecting citizens' right to challenge decisions.
Intelligent and proactive public services	18	31	High	Experts stated that AI-government should shift services from reactive request-based models to predictive and proactive service provision.
Performance evaluation and adaptive governance	17	28	Moderate to high	Participants highlighted the need for continuous monitoring, evaluation indicators, and revision of AI systems after implementation.
Public-private and academic collaboration	15	24	Moderate	Some participants emphasized cooperation between government, universities, technology companies, and research centers to develop AI-government capacities.

Table 2 presents the frequency and consensus level of the main extracted components. The highest level of consensus was related to integrated data governance, which was mentioned by all 24 participants and appeared most frequently in the coding process. This finding indicates that experts considered data not as a technical by-product of administration, but as the central resource of intelligent governance. Interoperability among public organizations was also strongly emphasized, showing that participants viewed fragmented databases, unconnected systems, and organizational resistance to data sharing as major obstacles to AI-government. Legal and ethical regulation of AI ranked among the most important components, reflecting participants' concern that artificial intelligence may create risks related to privacy, discrimination, lack of accountability, and unclear legal responsibility if implemented without a proper governance framework. AI-based decision support, cyber security, administrative process redesign, citizen trust, and human capital also showed high levels of consensus, suggesting that the transition to AI-government requires simultaneous attention to technological capacity, administrative reform, legal safeguards, and organizational learning. Components such as performance evaluation and public-private-academic collaboration had slightly lower but still meaningful levels of agreement, indicating that while they were not always mentioned first by participants, they were considered necessary for sustainability and long-term implementation.

Table 3. Proposed Transition Architecture from E-Government to AI-Government in Iran's Public Administration

Architectural layer	Existing limitation in e-government	Required redesign for AI-government	Expected governance outcome
Data layer	Fragmented organizational databases, inconsistent data formats, incomplete data exchange, weak data quality control	Establishment of national data governance standards, integrated data repositories, data quality protocols, and legal mechanisms for secure data sharing	Reliable, machine-readable, and interoperable data foundation for intelligent services and evidence-based policy decisions
Infrastructure layer	Uneven digital infrastructure across public organizations, limited cloud capacity, weak cyber resilience, dependence on isolated systems	Development of secure government cloud, unified identity infrastructure, cyber security architecture, and resilient digital platforms	Secure, scalable, and stable technological environment for AI-based public administration
Service layer	Online but mostly reactive services, repetitive citizen requests, limited personalization, lack of proactive service delivery	Design of intelligent service portals, predictive service systems, automated eligibility assessment, and personalized citizen-centered services	Faster, simpler, more proactive, and more equitable access to public services
Decision-making layer	Experience-based and hierarchical decisions, weak evidence integration, limited use of real-time administrative data	Deployment of AI-based decision support systems, intelligent dashboards, predictive analytics, and policy simulation tools	More accurate, timely, and evidence-informed administrative and policy decisions
Process layer	Complex bureaucratic procedures, duplication of documents, manual approvals, redundant administrative steps	Process mining, workflow automation, robotic process automation, simplification of administrative procedures, and redesign before automation	Reduced bureaucracy, lower administrative costs, shorter service delivery time, and increased organizational efficiency
Legal and ethical layer	Lack of specific AI governance rules, unclear responsibility for algorithmic decisions, weak privacy and data protection mechanisms	Adoption of legal frameworks for AI use, algorithmic accountability, privacy protection, explainability, human oversight, and appeal mechanisms	Lawful, transparent, fair, and rights-based use of artificial intelligence in public administration
Human capacity layer	Limited AI literacy among managers and employees, shortage of data specialists, resistance to organizational change	Training of public employees, recruitment of AI and data experts, creation of interdisciplinary teams, and development of digital leadership	Increased administrative readiness, institutional learning, and effective adoption of intelligent governance systems
Accountability layer	Limited transparency of digital procedures, weak performance monitoring, insufficient feedback from citizens	Establishment of algorithmic audit systems, performance dashboards, citizen feedback channels, impact assessment, and continuous evaluation	Greater transparency, public trust, institutional accountability, and adaptive improvement of AI-government systems

Table 3 shows the proposed transition architecture from e-government to AI-government in Iran's public administration. The findings indicate that e-government has mainly focused on digitizing services, creating online portals, and transferring some administrative interactions to electronic platforms; however, AI-government requires a deeper redesign of administrative architecture. In the data layer, the transition requires a movement from fragmented organizational databases toward integrated data governance. In the infrastructure layer, AI-government depends on secure, scalable, and resilient digital platforms capable of supporting intelligent systems. In the service layer, the model shifts from reactive service delivery to proactive and personalized service provision. In the decision-making layer, artificial intelligence is expected to support evidence-based and predictive administrative decisions, while maintaining human oversight. In the process layer, the findings show that automation should be preceded by administrative simplification and process redesign; otherwise, AI may only reproduce existing inefficiencies in a digital form. In the legal and ethical layer, the transition requires explicit rules for privacy, accountability,

transparency, explainability, and the right to appeal. In the human capacity layer, participants emphasized that AI-government cannot be implemented only through software acquisition and requires trained employees, digital leaders, and interdisciplinary teams. Finally, the accountability layer highlights the necessity of continuous monitoring, public feedback, algorithmic auditing, and adaptive evaluation. Therefore, the proposed architecture presents AI-government as an integrated governance system rather than a single technological intervention.

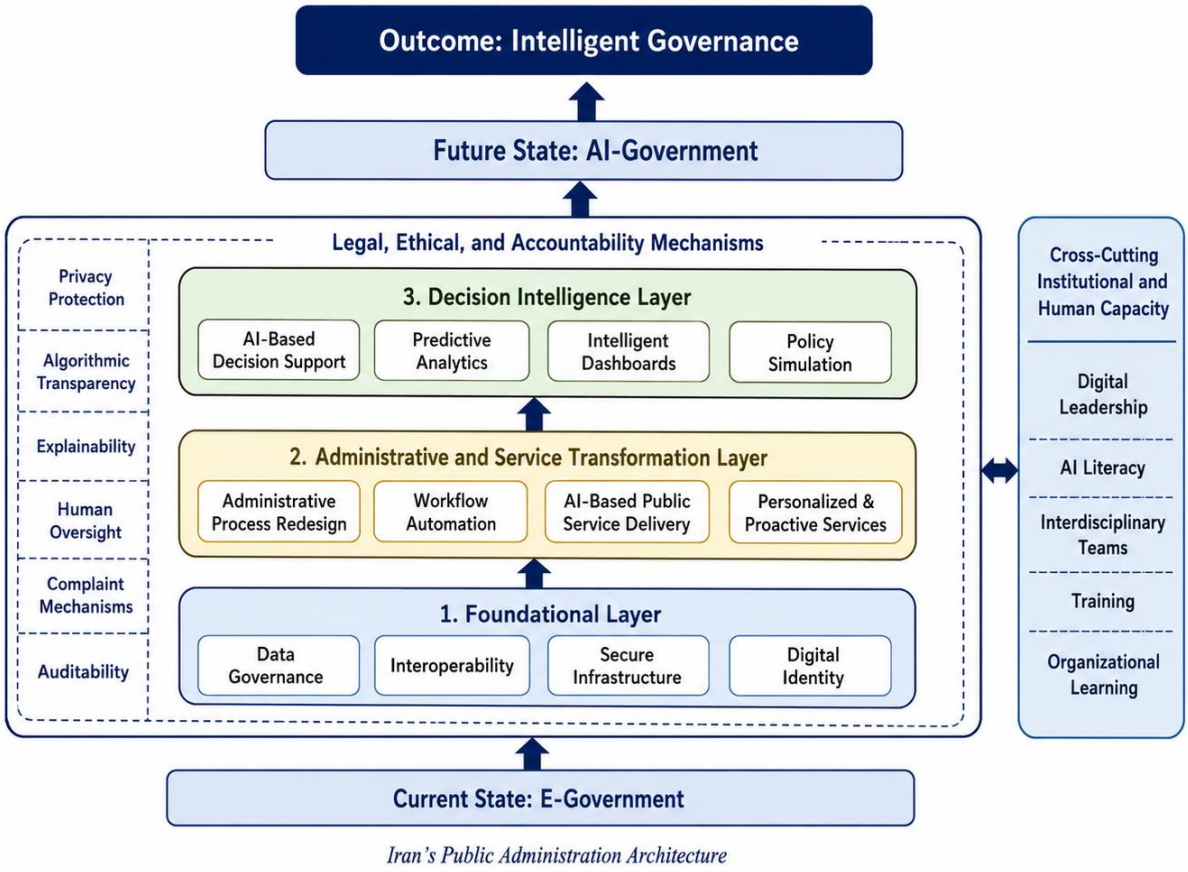

Figure 1. Conceptual Model of Iran's Transition from E-Government to AI-Government for Intelligent Governance

The conceptual model derived from the findings explains the transition from e-government to AI-government as a layered and evolutionary process. At the base of the model are data governance, interoperability, secure infrastructure, and digital identity, which create the technical and informational foundation for intelligent public administration. Above this foundation, administrative process redesign and AI-based service delivery enable public organizations to move from traditional bureaucratic workflows to intelligent, simplified, and citizen-centered processes. The next level of the model includes AI-based decision support, predictive analytics, and intelligent policy tools, which strengthen the capacity of government to anticipate social and administrative needs, allocate resources more efficiently, and make evidence-informed decisions. Surrounding these technical and administrative layers are legal, ethical, and accountability mechanisms, including privacy protection, algorithmic transparency, explainability, human oversight, complaint mechanisms, and auditability. These mechanisms ensure that AI-government remains legitimate, rights-based, and publicly accountable. The model also includes institutional and human capacity as a cross-cutting element, because the implementation of AI-government requires leadership, training, professional competencies, organizational coordination, and a culture of learning and innovation. Overall, the conceptual model shows that intelligent governance is achieved when data, technology, law, ethics, organizational capacity, and citizen trust are aligned within a coherent public administration architecture.

The overall findings of the study indicate that the transition from e-government to AI-government in Iran should not be interpreted as the simple addition of artificial intelligence tools to existing administrative systems. Rather, it requires a comprehensive redesign of public administration architecture. Participants repeatedly emphasized that many current e-

government initiatives remain limited to electronic forms, online portals, digital correspondence, and partial automation of traditional procedures. Although these developments have improved access to some public services, they have not necessarily produced intelligent, integrated, predictive, or citizen-centered governance. The findings show that AI-government requires a shift from document-centered administration to data-centered administration, from fragmented organizational systems to interoperable governance platforms, from reactive service delivery to proactive service provision, from individual managerial judgment to evidence-informed decision support, and from opaque bureaucratic procedures to transparent and accountable algorithmic governance.

Another important finding was that the experts did not view artificial intelligence as a substitute for public administration, public managers, or legal responsibility. Instead, they understood AI as a decision-support and service-enhancement capacity that must remain embedded within a clearly regulated administrative system. Participants warned that if artificial intelligence is implemented without legal safeguards, ethical principles, and accountability mechanisms, it may intensify existing administrative problems, including discrimination, unequal access, lack of transparency, and concentration of power in technical systems. Therefore, the findings suggest that the legitimacy of AI-government depends on the extent to which citizens can understand, challenge, and trust the decisions generated or supported by intelligent systems. In this regard, explainability, human oversight, right to appeal, privacy protection, and algorithmic auditing were identified as central requirements of intelligent governance.

The findings also showed that organizational and human factors are as important as technological factors. Participants stated that many public organizations may not be ready for AI-government because of weak data culture, limited AI literacy, resistance to data sharing, shortage of specialized personnel, and persistence of hierarchical decision-making patterns. Therefore, the transition to AI-government requires a gradual but systematic program of administrative capacity building. This includes training managers and employees, creating interdisciplinary teams, recruiting data and AI specialists, developing digital leadership, and strengthening cooperation among government institutions, universities, research centers, and technology companies. The findings indicate that without such institutional preparation, AI systems may remain symbolic, fragmented, or underused.

In summary, the findings provide a comprehensive framework for understanding how Iran's public administration can move from e-government toward AI-government. The extracted model emphasizes that intelligent governance is not achieved through technology alone, but through the alignment of data infrastructure, interoperable systems, redesigned administrative processes, AI-supported decision-making, legal and ethical safeguards, skilled human resources, public trust, and continuous evaluation. The transition to AI-government therefore represents a strategic transformation of the state's administrative architecture and requires coordinated reforms at the technical, institutional, legal, managerial, and societal levels.

4. Discussion and Conclusion

The present study aimed to identify and explain the architectural requirements for redesigning Iran's public administration system in the transition from e-government to AI-government for intelligent governance. The findings showed that this transition is not a simple technological progression from electronic portals to artificial intelligence tools, but a comprehensive transformation in the structure, logic, and operating architecture of public administration. The qualitative analysis led to the identification of four major architectural dimensions: foundational digital and data infrastructure, intelligent administrative and service architecture, legal, ethical, and accountability architecture, and institutional and human capacity architecture. These dimensions indicate that AI-government requires a systemic redesign of public administration based on integrated data governance, interoperability, secure infrastructure, AI-based decision support, process redesign, proactive public service delivery, algorithmic transparency, privacy protection, human oversight, and continuous institutional learning. This result is consistent with the broader evolution of digital government maturity models, which show that public-sector digitalization develops from basic information provision and electronic transactions toward integrated, intelligent, and citizen-centered governance models (Abu Bakar et al., 2020).

One of the most important findings of this study was the centrality of integrated data governance. All participants emphasized that AI-government cannot be realized without standardized, reliable, interoperable, and legally governed data. This finding supports the argument that the new generation of digital-era governance is increasingly shaped by data science,

artificial intelligence, and the capacity of governments to use large-scale administrative data for prediction, coordination, and policy learning (Dunleavy & Margetts, 2023). It also aligns with studies showing that AI in the public sector depends on access to high-quality data, technical infrastructure, institutional coordination, and the ability to integrate data across administrative boundaries (van Noordt & Misuraca, 2022; Zuiderwijk et al., 2021). In the Iranian context, this result is especially significant because earlier studies identified fragmentation, weak inter-organizational coordination, and infrastructural limitations as persistent barriers to e-government development (Bigdeli & de Cesare, 2011; Ghorbanizadeh et al., 2014). Therefore, the present study extends previous findings by showing that these unresolved e-government barriers become even more critical in the AI-government stage, because artificial intelligence systems are structurally dependent on data quality, data exchange, and machine-readable administrative processes.

The second major finding concerned interoperability among public organizations. Participants repeatedly described organizational data silos, incompatible systems, fragmented platforms, and weak data-sharing mechanisms as major barriers to intelligent governance. This finding is aligned with Iranian research on digital transformation challenges in the public sector, which has emphasized that digital transformation is constrained by fragmented implementation, weak inter-agency coordination, and gaps between policy intentions and administrative execution (Danaeefard et al., 2024). It is also consistent with studies of smart government in Iran that identify institutional integration, digital governance, and organizational readiness as core requirements for smart public administration (Fathi et al., 2024, 2025). The result confirms that AI-government must be built on an interoperable administrative architecture rather than isolated organizational initiatives. In this sense, AI-government requires the redesign of public administration as a connected ecosystem in which data, services, platforms, and decision-making processes are integrated across institutional boundaries.

Another important result was the identification of intelligent administrative and service architecture as a core dimension of AI-government. Participants argued that artificial intelligence should not merely be added to existing bureaucratic procedures; rather, public services and administrative processes must first be redesigned. This finding supports the distinction between digitization and digital transformation. Mergel, Edelmann, and Haug emphasize that digital transformation involves organizational change, process redesign, strategic adaptation, and new forms of value creation, rather than the simple conversion of analog procedures into digital formats (Mergel et al., 2019). Similarly, the present findings indicate that many e-government systems remain limited to online access, digital correspondence, and electronic forms, while AI-government requires predictive, personalized, proactive, and automated service models. This result is also consistent with Wirtz, Weyerer, and Geyer, who argue that AI applications in the public sector can improve administrative efficiency, public service delivery, and decision quality, but only when they are properly embedded in administrative structures and governance processes (Wirtz et al., 2019).

The finding that AI-based decision support is a key component of AI-government is also supported by previous studies. Participants considered AI useful for predictive analytics, intelligent dashboards, policy simulation, risk assessment, and evidence-based decision-making. This is consistent with the view that artificial intelligence can support public governance by processing complex datasets, identifying patterns, forecasting needs, and informing policy decisions (Zuiderwijk et al., 2021). The OECD also emphasizes that AI is increasingly relevant to core government functions, including policy design, regulation, budgeting, procurement, human-resource management, and public service delivery (Oecd, 2025). However, the participants in the present study did not frame AI as a replacement for public managers or administrative responsibility. Instead, they emphasized that AI should support, inform, and improve decision-making while remaining subject to human oversight and legal accountability. This interpretation is consistent with recent public administration literature that understands AI-enabled government as a multi-level governance phenomenon involving actors, organizations, policy frameworks, and institutional responsibilities (Criado et al., 2025).

The findings also showed that legal, ethical, and accountability mechanisms are not peripheral elements of AI-government but central architectural requirements. Participants emphasized privacy protection, algorithmic transparency, explainability, auditability, complaint mechanisms, and the right to appeal as essential conditions for legitimate AI-government. This result strongly aligns with Wirtz, Weyerer, and Sturm's integrated AI governance framework, which highlights the dark sides of AI in public administration, including opacity, discrimination, privacy risks, manipulation, and loss of accountability (Wirtz et

al., 2020). It also supports the argument that AI-enabled government must be designed through an integrated algorithmic state architecture in which technical systems, legal rules, ethical safeguards, organizational roles, and accountability mechanisms are jointly configured (Engin et al., 2025). In the Iranian context, this finding is particularly important because the transition to AI-government may generate new forms of administrative opacity if algorithmic systems are implemented without transparent decision rules, legal responsibility, and citizen protection mechanisms.

The emphasis on citizen trust and digital inclusion also represents an important contribution of the study. Participants argued that AI-government must increase public trust rather than deepen mistrust or exclusion. This finding is consistent with earlier Iranian studies that identified low trust, cultural barriers, user acceptance problems, and weak citizen engagement as barriers to successful e-government implementation (Bigdeli & de Cesare, 2011; Ghorbanizadeh et al., 2014). It also corresponds with smart government models that emphasize citizen orientation, participation, service quality, and responsiveness as major elements of intelligent public administration (Shojaan et al., 2018; Taghva et al., 2017). The present study extends these findings by showing that, in the AI-government stage, citizen trust depends not only on access to digital services but also on the perceived fairness, explainability, accountability, and rights-based governance of algorithmic systems. Therefore, intelligent governance must be designed around public value and citizen rights, not merely administrative efficiency.

The institutional and human capacity dimension was another major finding. Participants emphasized digital leadership, AI literacy, interdisciplinary teams, continuous training, organizational learning, and change management. This finding supports previous research showing that digital transformation depends on leadership, organizational culture, professional competencies, and institutional readiness (Mergel et al., 2019). It is also consistent with Iranian studies on smart government and digital transformation, which identify managerial support, human-resource capacity, policy coordination, and organizational readiness as important determinants of successful implementation (Danaeefard et al., 2024; Fathi et al., 2024, 2025). In this regard, the findings indicate that AI-government cannot be created only through technology procurement or software deployment. It requires a professional transformation of the public sector, including the development of new roles such as data analysts, AI ethics officers, cyber security specialists, digital transformation managers, and policy simulation experts.

The proposed model also corresponds with recent international developments in AI-enabled government. Comparative analysis of national AI strategies in Europe shows that governments are increasingly formulating AI policy initiatives for the public sector, but that successful implementation depends on institutional coordination, ethical governance, strategic capacity, and administrative readiness (van Noordt et al., 2025). Similarly, the Abu Dhabi Government Digital Strategy 2025–2027 frames the transition toward AI-native government as a strategic administrative transformation that connects digital services, artificial intelligence, institutional enablement, and future-oriented governance (Department of Government Enablement - Abu, 2025). These international examples support the present study's argument that Iran's transition to AI-government must be guided by an architectural model rather than fragmented technological experimentation. However, unlike generic global models, the findings of the present study are grounded in Iran's administrative context and therefore respond to specific challenges such as fragmented e-government systems, uneven digital maturity, legal uncertainty, weak interoperability, and the need for institutional coordination.

The findings further suggest that Iran's current position in e-government development should be understood as a starting point for AI-government, not as a completed foundation. Analysis of Iran's status in the 2024 E-Government Development Index indicates that improvement in digital infrastructure, online services, and human capital remains necessary for strengthening digital government performance (Shakhes Governance Think, 2024). This finding is compatible with the present results because the experts emphasized that AI-government requires a higher level of maturity than conventional e-government. Artificial intelligence systems need integrated data, secure infrastructure, interoperable platforms, skilled human resources, and transparent regulatory mechanisms. Therefore, weaknesses in e-government maturity can constrain the feasibility of AI-government. At the same time, the transition to AI-government creates an opportunity to redesign public administration more fundamentally, moving from fragmented electronic service provision toward intelligent, adaptive, and citizen-centered governance.

The study's results also relate to emerging discussions on AI governance in Iran. The proposed AI governance model for state administration in the Islamic Republic of Iran emphasizes the need for institutional arrangements, policy coordination,

legal regulation, and ethical governance (Torabi & Eghbal, 2025). The present study complements this perspective by specifying the administrative architecture through which such governance can be operationalized. Moreover, discussions about Iran's paradoxical AI development show that innovation, regulation, control, and institutional openness remain in tension within the national AI environment (Filterwatch, 2025). The findings of the present study suggest that these tensions should be addressed through responsible AI-government design. If artificial intelligence is implemented mainly as an instrument of control, surveillance, or administrative centralization, it may weaken trust and legitimacy. In contrast, if AI-government is designed around transparency, accountability, service improvement, and citizen rights, it can support intelligent governance and public value.

From a conceptual perspective, the study contributes to the literature by integrating e-government, smart government, digital transformation, AI governance, and public administration architecture into a single explanatory model. Conceptual research is valuable when a field requires theoretical clarification, integration of fragmented knowledge, and development of new frameworks (Jaakkola, 2020). The present study responds to this need by showing that AI-government should be understood as a layered architecture consisting of foundational infrastructure, administrative transformation, decision intelligence, legal-ethical accountability, and human-institutional capacity. This architecture explains why artificial intelligence cannot be successfully implemented in government without prior and simultaneous reforms in data governance, organizational processes, legal frameworks, human capital, and accountability systems. Therefore, the main theoretical contribution of the study is that it reframes AI-government from a technological phenomenon into an integrated administrative architecture for intelligent governance.

Overall, the findings demonstrate that the transition from e-government to AI-government in Iran requires a strategic redesign of public administration. The results are consistent with both international and Iranian studies showing that digital and intelligent government depend on technological infrastructure, organizational readiness, data governance, legal regulation, ethical safeguards, and citizen-centered service delivery (Abu Bakar et al., 2020; Danaeefard et al., 2024; Dunleavy & Margetts, 2023; Oecd, 2025). The study also shows that the Iranian public sector cannot move directly to AI-government by deploying isolated AI applications. Instead, it must build an integrated architecture that connects data, platforms, administrative processes, decision-support systems, legal accountability, institutional learning, and public trust. In this sense, intelligent governance is not the automatic outcome of artificial intelligence adoption; it is the result of deliberate administrative design, responsible governance, and coordinated institutional transformation.

The present study has several limitations. First, the study was conducted qualitatively and relied on the perspectives of 24 experts based in Tehran; therefore, although the participants had relevant expertise and the sampling continued until theoretical saturation, the findings may not fully represent the experiences of public organizations in other provinces, municipalities, or local administrative units. Second, the study focused on expert perceptions and documentary analysis rather than direct observation of AI implementation projects in public organizations. Third, because AI-government is still an emerging field in Iran, some participants discussed architectural requirements in prospective and conceptual terms rather than based on mature operational experience. Fourth, the study did not quantitatively test the relationships among the extracted dimensions, and the proposed model should therefore be interpreted as an exploratory and conceptual framework that requires further empirical validation.

Future research should examine the proposed model using quantitative and mixed-method designs with larger samples of public managers, employees, policy-makers, technology experts, and citizens. Future studies can develop and validate measurement instruments for assessing AI-government readiness, data governance maturity, algorithmic accountability, public-sector AI literacy, and citizen trust in intelligent public services. Comparative research across ministries, municipalities, public agencies, and provinces can also help identify differences in institutional readiness and implementation barriers. In addition, future research should investigate specific AI use cases in Iran's public sector, such as intelligent licensing, predictive welfare services, smart taxation, digital identity, automated complaint management, and AI-supported policy evaluation. Longitudinal studies are also recommended to examine how AI-government initiatives evolve over time and how legal, organizational, technical, and social factors affect their success or failure.

From a practical perspective, public-sector decision-makers should approach AI-government as a comprehensive administrative transformation rather than a technology acquisition program. The first priority should be the creation of

integrated data governance standards, interoperable platforms, secure digital identity systems, and clear rules for data sharing among public organizations. At the same time, legal and ethical frameworks should be developed before the large-scale deployment of algorithmic decision systems, especially in areas affecting citizens' rights, access to services, welfare benefits, taxation, licensing, and administrative justice. Public organizations should redesign administrative processes before automating them and should invest in AI literacy, digital leadership, interdisciplinary teams, and continuous training for public employees. Finally, every AI-government initiative should include mechanisms for transparency, human oversight, citizen feedback, complaint handling, auditing, and performance evaluation so that intelligent governance strengthens public trust, administrative fairness, and service quality.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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References

Abu Bakar, K., Ibrahim, R., & Yunus, Y. (2020). Digital government evolution and maturity models: A review. *Open international journal of informatics*, *8*(2), 1-15.

Bigdeli, A. Z., & de Cesare, S. (2011). Barriers to e-government service delivery in developing countries: The case of Iran. In A. Carugati & C. Rossignoli (Eds.), *Emerging Themes in Information Systems and Organization Studies* (pp. 313-325). Physica-Verlag. https://doi.org/10.1007/978-3-7908-2739-2_24

Criado, J. I., Sandoval-Almazan, R., & Gil-Garcia, J. R. (2025). Artificial intelligence and public administration: Understanding actors, governance, and policy from micro, meso, and macro perspectives. *Public Policy and Administration*, *40*(2), 234-251. https://doi.org/10.1177/09520767241272921

Danaeefard, H., Kazemi, S. H., & Karimi, M. (2024). Exploring the challenges of digital transformation in the Iranian public sector: A qualitative study. *Public Organization Review*, *24*(3), 1077-1103. https://doi.org/10.1007/s11115-024-00776-y

Department of Government Enablement - Abu, D. (2025). Abu Dhabi Government Digital Strategy 2025-2027 accelerates AI-native government journey. https://www.dge.gov.ae/en/news/adg-digital-strategy-update-2025

Dunleavy, P., & Margetts, H. (2023). Data science, artificial intelligence and the third wave of digital era governance. *Public Policy and Administration*. https://doi.org/10.1177/09520767231198737

Engin, Z., Treleaven, P., Batty, M., Bosetti, N., & Voss, A. (2025). The algorithmic state architecture (ASA): An integrated framework for AI-enabled government. https://doi.org/10.48550/arXiv.2503.08725

Fathi, B., Rahimi, G., & Nejhad Haji Ali Irani, F. (2024). Modeling the development of smart government in Iranian public sector institutions: A qualitative study. *Journal of Resource Management and Decision Engineering*, *3*(4), 39-46.

Fathi, B., Rahimi, G., & Nejhad Haji Ali Irani, F. (2025). Quantitative analysis of factors affecting the realization of smart government in Iran with emphasis on the dimensions of digital governance. *Digital Transformation and Administration Innovation*, *3*(1), 1-11. https://doi.org/10.61838/dtai.3.1.8

Filterwatch. (2025, 2025/09/30). Control over innovation: Iran's paradoxical AI development. https://filter.watch/english/2025/09/30/investigative-report-september-2025-control-over-innovation/

Ghorbanizadeh, V., Roudsaz, H., & Abbaspour, J. (2014). Meta-analysis of barriers to the establishment of e-government in Iran. *Journal of Business Intelligence Management Studies*, *2*(8), 1-32.

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review*, *10*, 18-26. https://doi.org/10.1007/s13162-020-00161-0

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, *36*(4), 101385. https://doi.org/10.1016/j.giq.2019.06.002

Oecd. (2025). *Governing with Artificial Intelligence: The State of Play and Way Forward in Core Government Functions*. OECD Publishing. https://doi.org/10.1787/795de142-en

Shakhes Governance Think, T. (2024). EGDI 2024: Analysis and review of the Islamic Republic of Iran's status in the 2024 E-Government Development Index. https://shakhestt.ir

Shojaan, A., Taghavifard, S. M. T., Elyasi, M., & Mohammadi, M. (2018). The realization of electronic governance in Iran: A step to the intelligent government. *Journal of Executive Management*. https://www.joem.ir/article_36656.html

Taghva, M. R., Taghavifard, S. M. T., Moeini, A., & Zynoddini, M. R. (2017). A smart government model: Dimensions of smart government using meta-synthesis method. *Journal of Business Intelligence Management Studies*, *6*(21), 135-197. https://ims.atu.ac.ir/article_8515.html

Torabi, M. A., & Eghbal, H. (2025). Proposing an artificial intelligence governance model for state administration in the Islamic Republic of Iran. *State Studies of Contemporary Iran*, *10*(4), 11-42. https://irsj.ihu.ac.ir/article_209594.html

van Noordt, C., Medaglia, R., & Tangi, L. (2025). Policy initiatives for artificial intelligence-enabled government: An analysis of national strategies in Europe. *Public Policy and Administration*, *40*(2), 215-253.

van Noordt, C., & Misuraca, G. (2022). Artificial intelligence for the public sector: Results of landscaping the use of AI in government across the European Union. *Government Information Quarterly*, *39*(3), 101714. https://doi.org/10.1016/j.giq.2022.101714

Wirtz, B. W., Weyerer, J. C., & Geyer, C. (2019). Artificial intelligence and the public sector: Applications and challenges. *International Journal of Public Administration*, *42*(7), 596-615. https://doi.org/10.1080/01900692.2018.1498103

Wirtz, B. W., Weyerer, J. C., & Sturm, B. J. (2020). The dark sides of artificial intelligence: An integrated AI governance framework for public administration. *International Journal of Public Administration*, *43*(9), 818-829. https://doi.org/10.1080/01900692.2020.1749851

Zuiderwijk, A., Chen, Y. C., & Salem, F. (2021). Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda. *Government Information Quarterly*, *38*(3), 101577. https://doi.org/10.1016/j.giq.2021.101577