

Artificial Intelligence in Public Information Systems: Transforming Digital Governance and Service Delivery

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ABSTRACT

Purpose: This study examines how Artificial Intelligence (AI) contributes to the transformation of public information systems, digital governance, and public service delivery in Vietnam while identifying the institutional factors that support sustainable AI adoption.

Subjects and Methods: A qualitative case study approach was employed involving government officials, public information system managers, information technology specialists, and citizens with experience using AI-enabled public services. Data were collected through semi-structured interviews, document analysis, and literature review, and analyzed using thematic analysis.

Results: The findings indicate that AI has significantly improved administrative efficiency through service automation, chatbot technology, machine learning, and integrated digital information systems. AI strengthened transparency, accountability, evidence-based decision making, and citizen-centered service delivery by improving accessibility, response speed, and service consistency. However, the study also identified persistent challenges, including unequal digital infrastructure, limited human resource capacity, regulatory adaptation, cybersecurity, data governance, and institutional coordination. These findings demonstrate that successful AI implementation requires organizational and governance transformation alongside technological innovation.

Conclusions: AI has become a strategic enabler of digital transformation in Vietnam by enhancing public information systems and governance performance. Nevertheless, the sustainability of AI adoption depends on balanced investments in technological capability, institutional readiness, regulatory support, human capital development, and collaborative governance to ensure transparent, accountable, inclusive, and responsive public administration.

INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the way governments operate, deliver services, and interact with citizens. Across the world, public sector organizations are increasingly adopting digital innovations to improve administrative performance, strengthen transparency, and provide more responsive public services (Balaji, 2025; Wirata et al., 2025). Among these innovations, Artificial Intelligence (AI) has emerged as one of the most influential technologies because of its ability to automate administrative processes, analyze large volumes of data, support evidence-based decision making, and enhance service efficiency. Consequently, AI is no longer viewed merely as a technological innovation but as a strategic instrument that enables governments to accelerate digital transformation and

improve public sector governance (Dunleavy et al., 2025; Alhosani & Alhashmi, 2024; Ubaldi et al., 2019; Androutsopoulou et al., 2025; Susar & Aquaro, 2019).

The growing adoption of AI has also reshaped the concept of public information systems. Traditionally, public information systems primarily functioned as repositories for government data and administrative records. Qin & Li (2024), Kalusivalingam et al. (2021), Phuangthuean & Nuansang (2024) said that, advances in AI have expanded their role into intelligent platforms capable of supporting predictive analytics, automating routine services, facilitating real time communication with citizens, and generating insights for policy formulation. This transformation aligns with the broader evolution from electronic government toward digital governance, where technology serves not only as a medium for delivering services but also as a mechanism for improving institutional effectiveness, accountability, transparency, and citizen participation (Djatkiko et al., 2025; McNutt, 2014; Rhamadhani & Edeh, 2024). Within this context, AI enables governments to process complex datasets more efficiently while providing personalized and data driven public services that better respond to citizens' evolving needs.

Governments worldwide have increasingly recognized the strategic value of AI in strengthening public administration (Hjaltalin & Sigurdarson, 2024; Marzdar, 2025; Trajkovski, 2024). AI based applications such as intelligent chatbots, machine learning algorithms, predictive analytics, and automated decision support systems have been implemented across various public sectors, including healthcare, population administration, taxation, transportation, and citizen complaint management. These technologies have demonstrated considerable potential to reduce bureaucratic complexity, accelerate administrative processes, minimize human error, and improve service accessibility. As governments continue to pursue digital transformation agendas, AI is becoming an essential component for building more adaptive, efficient, and citizen centered governance systems.

Among Southeast Asian countries, Vietnam has demonstrated a strong commitment to digital transformation through its National Digital Transformation Program launched in 2020. This national strategy places digital technologies, including Artificial Intelligence, at the center of public sector modernization by encouraging government agencies to integrate intelligent technologies into administrative services, public information systems, and policy implementation. The program aims to improve governmental efficiency, strengthen the digital economy, and enhance citizens' quality of life through integrated and responsive public services (Goloshchapova et al., 2023; Criado & Gil-Garcia, 2019; Wirata et al., 2025). As a result, AI applications have gradually expanded across several government sectors, including population administration, healthcare services, and digital complaint handling systems. AI powered chatbots have improved communication between citizens and government agencies by providing immediate responses to public inquiries, while machine learning technologies have supported data analysis for more evidence based policymaking.

Despite these encouraging developments, implementing AI in public information systems remains accompanied by substantial challenges. The successful deployment of AI depends not only on technological capability but also on institutional readiness, regulatory support, human resource capacity, and adequate digital infrastructure. Developing countries continue to face persistent barriers associated with uneven technological infrastructure, digital inequality, cybersecurity risks, and concerns regarding data privacy and ethical governance (Malik et al., 2025; Nosike, 2024; Omweri, 2024). In Vietnam, regional disparities in technological development further complicate efforts to establish inclusive digital governance, particularly in rural areas where digital infrastructure and institutional capacity remain relatively limited. These challenges indicate that AI implementation should be understood as a multidimensional governance issue rather than solely a technological initiative.

Existing literature has extensively discussed AI adoption in government, emphasizing technological innovation, administrative efficiency, and digital service automation (Samadovich & Yonghan, 2025; Neumann et al., 2024). Previous studies have highlighted the ability of AI to improve operational performance, reduce service delivery time, and strengthen data driven decision making (Wamba-Taguimdje et al., 2020; Zong & Guan, 2025; Siddiqui, 2025). Other studies have focused on digital transformation strategies, smart governance, and technological

readiness within public institutions. Relatively limited attention has been devoted to understanding how AI simultaneously transforms public information systems, digital governance practices, and public service delivery within an integrated analytical framework, particularly in developing countries such as Vietnam. Most previous research examines these dimensions separately, leaving insufficient understanding of their interrelationships during government digital transformation.

Addressing this gap, the present study investigates the implementation of Artificial Intelligence in Vietnam's public information systems by examining its contribution to digital governance transformation and public service delivery. Rather than viewing AI solely as a technological tool, this study conceptualizes AI as an institutional enabler that reshapes administrative processes, governance mechanisms, and interactions between government institutions and citizens. By employing a qualitative case study approach, this research contributes empirical evidence from Vietnam to enrich the growing literature on AI enabled digital governance. The findings are expected to provide theoretical insights into the relationship between artificial intelligence, public information systems, and governance transformation while offering practical recommendations for governments seeking to implement AI in a manner that is effective, inclusive, and sustainable.

METHODOLOGY

Research Design

This study employed a qualitative research approach using a case study design to examine the implementation of Artificial Intelligence (AI) in public information systems and its contribution to digital governance transformation and public service delivery in Vietnam. A qualitative case study was considered appropriate because it enables an in depth exploration of contemporary phenomena within their real world institutional context. Rather than measuring causal relationships statistically, this approach seeks to understand how AI is implemented, interpreted, and utilized by different stakeholders involved in public administration. The case study strategy also allows for a holistic examination of organizational processes, governance practices, and policy implementation that cannot be adequately captured through quantitative methods.

Research Setting and Participants

The study was conducted in Vietnam, which has emerged as one of Southeast Asia's leading countries in promoting digital transformation through its National Digital Transformation Program. The research focused on public information systems that have incorporated AI based technologies, including chatbot services, machine learning applications, and administrative automation platforms. Participants were purposively selected based on their direct involvement or experience with AI implementation in public administration. They consisted of government officials responsible for digital governance initiatives, public information system managers, information technology specialists, and citizens who had experience using AI enabled public services. This purposive sampling strategy ensured that the collected information reflected diverse perspectives regarding the opportunities and challenges associated with AI adoption.

Data Collection

Data were collected through three complementary techniques, namely semi structured interviews, document analysis, and literature review. Semi structured interviews served as the primary source of empirical data because they provided flexibility for participants to elaborate on their experiences while ensuring consistency across key research themes. Interviews explored participants' perceptions regarding AI implementation, governance transformation, institutional readiness, service quality improvement, and implementation challenges. Document analysis was conducted to strengthen empirical findings by examining official government policies, digital transformation strategies, AI implementation reports, institutional documents, and related public administration records. In addition, a literature review of recent scholarly publications, government reports, and publications from international organizations, including the United Nations and the World Bank, was undertaken to establish the theoretical foundation and contextualize the findings within broader discussions of AI driven digital governance.

Data Analysis

The collected data were analyzed using thematic analysis. The analysis began with data familiarization through repeated reading of interview transcripts and supporting documents to obtain a comprehensive understanding of the collected information. Relevant data were subsequently coded according to recurring patterns and organized into broader themes representing the implementation of AI, digital governance transformation, service delivery improvement, institutional readiness, and implementation challenges. The identified themes were then interpreted by integrating empirical evidence with relevant theoretical perspectives on digital governance and public information systems. This analytical process enabled the researcher to identify relationships among emerging themes while providing a comprehensive explanation of how AI contributes to governance transformation in the Vietnamese public sector.

Trustworthiness

To enhance the credibility and trustworthiness of the findings, this study applied data triangulation and method triangulation. Information obtained from interviews was systematically compared with official documents and relevant scholarly literature to ensure consistency across multiple sources. Method triangulation was achieved by combining interviews, document analysis, and literature review throughout the research process. In addition, member checking was conducted by confirming interview interpretations with selected participants to ensure that the findings accurately reflected their perspectives and experiences. These procedures strengthened the credibility, dependability, and overall trustworthiness of the qualitative findings.

Research Procedure

The research was conducted through a systematic sequence of activities beginning with identifying the research problem and reviewing relevant literature on Artificial Intelligence, public information systems, and digital governance. The subsequent stage involved selecting research participants and collecting empirical data through interviews, document analysis, and literature review. All collected data were then organized and analyzed using thematic analysis to identify major patterns and themes. The findings were interpreted in relation to existing theoretical perspectives before drawing conclusions regarding the contribution of AI to digital governance transformation and public service delivery in Vietnam.

RESULTS AND DISCUSSION

This section presents the empirical findings derived from semi structured interviews, document analysis, and supporting literature, as outlined in the research methodology. The findings are organized according to the major themes that emerged from the thematic analysis to provide a comprehensive understanding of how Artificial Intelligence (AI) contributes to the transformation of public information systems and digital governance in Vietnam. Rather than examining AI solely as a technological innovation, the findings emphasize its practical role in reshaping administrative processes, improving public service delivery, and strengthening governance practices within government institutions. The presentation of the findings is divided into two main themes. The first theme examines the implementation of AI across public information systems, highlighting the adoption of AI based applications, perceived operational benefits, and implementation challenges identified by participants. The second theme explores the implications of AI for digital governance, focusing on transparency, accountability, efficiency, and data driven decision making. Throughout this section, interview findings are systematically complemented by documentary evidence obtained from official government publications and policy documents to strengthen the credibility of the analysis while maintaining the interview data as the primary source of empirical evidence.

AI Implementation in Public Information Systems

The thematic analysis identified that the implementation of Artificial Intelligence (AI) in Vietnam's public information systems has become an essential component of the country's digital transformation strategy. Across the interviews, participants consistently described AI as a practical instrument that enhances administrative efficiency, improves public access to

government information, and supports evidence-based decision making. Rather than functioning as an independent technological innovation, AI has been incorporated into existing public information systems to strengthen government operations while improving the quality and responsiveness of public services.

The interview findings indicate that three interconnected themes characterize the current implementation of AI in Vietnam's public sector. The first relates to the increasing use of AI enabled service automation through chatbot technology and automated administrative processes. The second concerns the utilization of machine learning to improve data management and support administrative decision making. The third theme highlights several implementation challenges, particularly infrastructure inequality, institutional readiness, digital competencies, and data protection. Together, these themes demonstrate that AI implementation represents both a technological and organizational transformation within public administration.

Table 1. Major Themes of AI Implementation in Vietnam's Public Information Systems

Theme	Interview Findings	Documentary Evidence
AI enabled service automation	Chatbots improve response speed and simplify public access to government information.	National Public Service Portal expands online administrative services and digital interaction with citizens.
Data driven administration	Machine learning supports population data management, demand prediction, and administrative analysis.	National Digital Transformation Program promotes integrated digital databases and intelligent public administration.
Implementation challenges	Participants identified infrastructure disparities, digital literacy, and data privacy as continuing concerns.	Government digital transformation reports emphasize investment in infrastructure, cybersecurity, and institutional capacity development.

Source: Interview findings (2025); Government of Vietnam documentation reviewed by the researcher, including the National Digital Transformation Program and National Public Service Portal reports.

AI implementation is perceived by participants as contributing primarily to service automation. Government agencies increasingly utilize AI powered chatbots to provide immediate responses to frequently requested public information, reducing dependence on conventional face to face administrative services. Participants explained that this technology enables citizens to obtain administrative guidance more efficiently while allowing government employees to concentrate on tasks requiring professional judgement. AI is viewed not as a replacement for public officials but as a supporting technology that improves administrative productivity and service consistency.

Machine learning enables government institutions to analyse administrative data, identify service demand patterns, and generate analytical insights for public management. Simultaneously, digital integration strengthens interoperability among government databases, allowing information to be exchanged more efficiently across ministries and public agencies. These three components operate synergistically to enhance the overall performance of public information systems, supporting more efficient administrative processes and improving institutional coordination.

The second stage of the framework demonstrates that improvements in public information system performance generate broader governance outcomes beyond operational efficiency. Enhanced administrative efficiency enables government institutions to optimize resource utilization and reduce procedural delays, while improved public service delivery increases citizens' access to government information through integrated digital platforms. Furthermore, AI supported data analytics strengthen evidence-based decision making by providing timely and comprehensive administrative information for policy formulation and service planning. The convergence of these outcomes ultimately contributes to digital governance transformation,

characterized by greater transparency, accountability, institutional responsiveness, and citizen oriented public administration. Accordingly, the framework confirms that AI should not be understood merely as a technological innovation but as a strategic governance enabler that connects digital infrastructure, administrative modernization, and public value creation within Vietnam's ongoing digital transformation agenda.

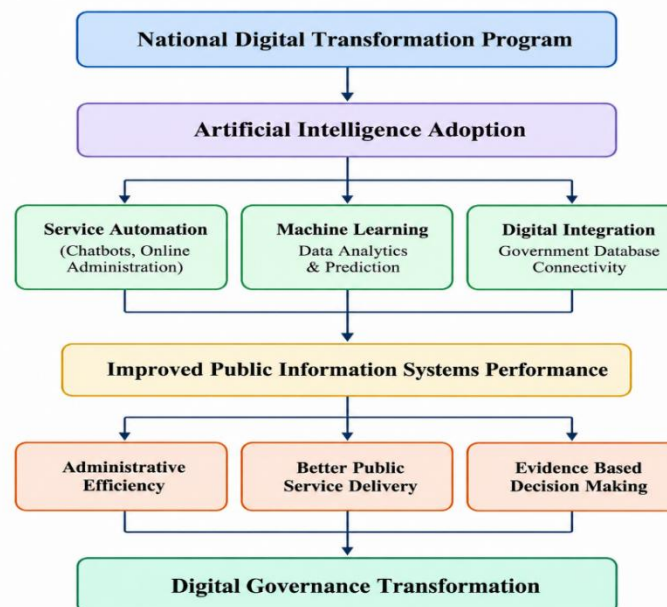


Figure 1. AI Driven Transformation of Vietnam's Public Information Systems

Source: Developed by the researcher based on interview findings (2025) and documentary analysis

The overall process through which Artificial Intelligence (AI) contributes to the transformation of Vietnam's public information systems within the framework of the National Digital Transformation Program. The diagram demonstrates that AI adoption represents the central mechanism linking national digital policies with operational improvements across public administration. The implementation of AI is manifested through three interconnected components, namely service automation, machine learning, and digital integration. Service automation facilitates routine administrative activities through chatbot services and online administrative platforms, thereby improving service responsiveness and reducing manual workloads.

This interpretation is supported by documentary evidence. The Government of Vietnam reported that the National Public Service Portal continues to expand integrated online public services through digital platforms connected with ministries and provincial governments. The implementation of these platforms has strengthened digital interaction between government institutions and citizens while supporting broader objectives under the National Digital Transformation Program. Such institutional developments provide important contextual evidence that AI implementation is embedded within a comprehensive digital governance strategy rather than isolated technological initiatives.

One government official responsible for managing public information systems emphasized the operational benefits of AI implementation by stating:

"Since AI based chatbots were introduced into our public information system, the speed of responding to citizens' inquiries has improved considerably. Previously, many requests had to be handled manually by administrative staff, which often resulted in delays during busy periods. Now, routine questions regarding administrative procedures, required documents, application status, and public services can be answered almost instantly. This has reduced the workload of frontline officers and allowed them to focus on more complex cases that require professional judgement."

Citizens also receive more consistent information because the chatbot follows standardized government guidelines. In our experience, AI has not replaced civil servants, but it has become an effective tool for supporting daily administrative operations and improving overall service quality."
(Participant P1, Government Information System Manager)

Although concise, this statement reflects a significant operational change identified throughout the interviews. Faster response times reduce administrative delays while improving citizens' overall experience when interacting with government institutions. The finding also indicates that AI contributes to increasing institutional responsiveness, which represents one of the principal objectives of public sector digital transformation.

Another important finding concerns the growing role of machine learning in supporting administrative management. Participants explained that AI applications are increasingly used to analyse population information, identify service demand patterns, and facilitate evidence-based planning. Rather than relying solely on manual administrative records, government institutions are gradually utilizing integrated digital information to support more informed operational decisions. This development strengthens coordination among agencies while enabling public institutions to respond more effectively to changing community needs.

From the perspective of public service users, AI implementation has significantly improved service accessibility. Participants described digital public services as more convenient because administrative information can be obtained remotely without visiting government offices. This reduces travel time, administrative costs, and procedural complexity, particularly for routine public services that previously required direct interaction with government personnel.

One participant explained:

"The availability of AI supported public services has made government information much easier to access. Previously, I often needed to visit government offices or wait for office hours just to ask about administrative procedures or document requirements. Now I can obtain the same information through online platforms at any time without travelling. The responses are generally quick and provide sufficient guidance for routine administrative matters. This has reduced both the time and costs associated with accessing government services. Although some complicated cases still require direct communication with officials, AI based services have significantly simplified everyday interactions between citizens and government institutions."
(Participant P2, Public Service User)

This finding illustrates that AI implementation extends beyond improving organizational efficiency. It also transforms how citizens interact with public institutions by creating more accessible and user-oriented service delivery. Documentary evidence likewise indicates continued expansion of digital public services and integrated government platforms, reflecting the government's commitment to increasing accessibility through digital transformation initiatives.

Despite these positive developments, thematic analysis also revealed persistent implementation challenges. Participants consistently acknowledged that technological advancement alone cannot ensure successful AI adoption. Limited technological infrastructure in certain regions, unequal digital capabilities among public employees, and concerns regarding personal data protection continue to influence implementation outcomes. These challenges demonstrate that successful AI adoption depends on institutional readiness as much as technological availability.

An information technology expert expressed this concern during the interview:

"Artificial Intelligence offers substantial opportunities to improve public administration, but successful implementation depends on much more than technology itself. As government agencies increasingly rely on digital platforms, protecting personal data and ensuring cybersecurity become critical priorities. AI systems require access to large volumes of administrative information, making clear governance frameworks and regulatory safeguards essential. At the same time, government institutions need continuous investment in technical infrastructure and employee

capacity building to ensure that these technologies are used responsibly. Without strong regulations and institutional readiness, the potential benefits of AI could be undermined by public concerns regarding privacy, security, and the misuse of information."
(Participant P3, Information Technology Expert)

This statement highlights that sustainable AI implementation requires comprehensive governance mechanisms capable of balancing innovation with accountability. Participants viewed regulatory clarity, cybersecurity, and institutional capacity as equally important as technological development. Accordingly, the findings suggest that AI implementation in Vietnam should be understood as a socio technical transformation that integrates technological innovation with governance reform, organizational learning, and public trust. The convergence between interview findings and documentary evidence demonstrates that AI has substantially strengthened public information systems while simultaneously revealing institutional challenges that remain critical for achieving sustainable digital transformation.

AI and Digital Governance Transformation

The second theme emerging from the thematic analysis demonstrates that Artificial Intelligence (AI) has contributed to the transformation of digital governance by strengthening transparency, accountability, administrative efficiency, and evidence-based decision making. Participants consistently described AI as more than an operational technology, emphasizing its role in reshaping governance processes through integrated digital information systems. The findings suggest that AI enables government institutions to improve internal coordination while simultaneously creating more transparent and responsive interactions with citizens. Rather than replacing existing governance structures, AI functions as an enabling mechanism that enhances institutional performance through continuous data processing and digital monitoring.

The interviews further revealed that digital governance transformation is characterized by a gradual transition from conventional bureaucratic procedures toward integrated digital administration. Participants explained that AI facilitates the management of large volumes of administrative information, allowing government agencies to monitor service performance, identify operational inefficiencies, and respond more rapidly to emerging public needs. The increasing integration of AI within government information systems also supports evidence-based policymaking by providing more comprehensive and timely information for administrative decision making.

Table 2. Major Findings on AI and Digital Governance Transformation

Governance Dimension	Interview Findings	Documentary Evidence
Transparency	AI digitally records administrative processes and improves public access to government information.	National Digital Transformation Program promotes integrated digital platforms and transparent public administration.
Accountability	Digital documentation enables service monitoring and improves institutional responsibility.	Expansion of interoperable government databases strengthens administrative traceability and performance evaluation.
Data driven decision making	AI supports analysis of administrative information for more informed policy decisions.	Government initiatives encourage the use of integrated digital data to improve public sector planning and decision making.
Administrative efficiency	Automation reduces manual procedures and accelerates service delivery.	National Public Service Portal continues expanding fully online administrative services across government institutions.

Source: Interview findings (2025); Government of Vietnam documentation reviewed by the researcher, including National Digital Transformation Program documents and National Public Service Portal reports.

Transparency emerged as one of the most significant governance outcomes associated with AI implementation. Participants explained that AI based information systems automatically document administrative activities, allowing government institutions to maintain more complete digital records while improving the accessibility of public information. The availability of digitally documented administrative processes also enables greater institutional oversight because operational activities can be monitored more consistently than under conventional paper based systems.

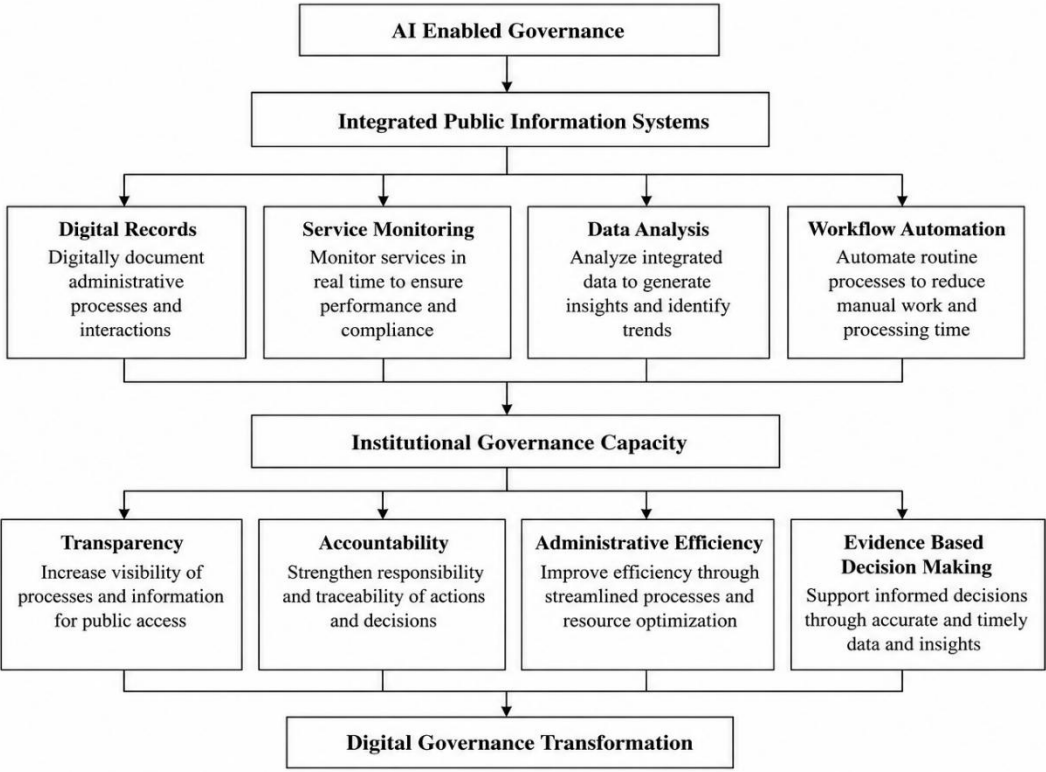


Figure 2. AI Driven Digital Governance Transformation Framework in Vietnam
Source: Developed by the researcher based on interview findings (2025) and documentary analysis

The governance transformation mechanism emerging from the implementation of Artificial Intelligence (AI) within Vietnam's public information systems. The framework demonstrates that AI enabled governance is operationalized through integrated public information systems that facilitate digital records, service monitoring, data analysis, and workflow automation as complementary organizational functions. These technological capabilities collectively strengthen institutional governance capacity by improving administrative coordination, information management, and operational control across government institutions. Enhanced governance capacity subsequently contributes to four interconnected governance outcomes, namely transparency, accountability, administrative efficiency, and evidence-based decision making, which represent the principal dimensions identified through the thematic analysis. The interaction among these governance dimensions ultimately supports the broader process of digital governance transformation by enabling government institutions to deliver more responsive, transparent, and data informed public administration. Accordingly, the framework reinforces the interview findings by demonstrating that AI contributes not only to technological modernization but also to institutional governance reform, thereby establishing the organizational foundation necessary for sustainable digital transformation in Vietnam.

Documentary analysis similarly indicates that Vietnam continues expanding integrated digital government platforms to improve information accessibility and strengthen transparent public administration.

A government official described this transformation as follows:

"The application of AI has significantly improved transparency within our administrative processes because almost every stage of service delivery is now digitally documented and recorded automatically. This allows supervisors and relevant institutions to monitor ongoing activities in real time without relying solely on manual reports. The availability of digital records also makes it easier to trace administrative decisions whenever clarification or evaluation is required. From our perspective, AI creates a more transparent working environment because information is stored systematically and can be accessed by authorized stakeholders whenever necessary. As a result, citizens experience greater confidence in public services, while government institutions are able to strengthen internal oversight and ensure that administrative procedures are implemented more consistently."
(Participant P4, Government Official)

This statement demonstrates that participants associate transparency not only with information disclosure but also with the government's ability to systematically document administrative activities. Digital documentation reduces procedural ambiguity, facilitates institutional monitoring, and creates a more reliable administrative record that can support both internal supervision and public accountability. Consequently, AI contributes to strengthening governance by making administrative processes more visible and traceable.

Another important finding concerns the contribution of AI to evidence-based decision making. Participants emphasized that AI enables government institutions to analyse extensive administrative information more efficiently than conventional manual approaches. Rather than relying primarily on individual judgement or fragmented information, government agencies increasingly utilize AI supported analytical systems to identify trends, anticipate service demand, and improve policy planning. This transformation reflects a broader institutional shift toward data informed governance, where administrative decisions are increasingly supported by integrated digital information.

One public policy analyst explained:

"One of the greatest advantages of AI is its ability to analyse large volumes of administrative data much faster than conventional methods. Instead of relying only on experience or fragmented reports, policymakers now have access to integrated information that provides a more comprehensive picture of public needs and service performance. AI helps identify emerging trends, detect recurring problems, and predict future service demands, allowing government agencies to prepare more appropriate policy responses. This evidence based approach reduces the likelihood of subjective decision making and improves the quality of public policies. In my opinion, AI does not replace human judgement, but it provides stronger analytical support that enables government decisions to become more accurate, objective, and responsive."
(Participant P5, Public Policy Analyst)

The interview findings indicate that participants perceive AI as improving not only the speed of decision making but also its analytical quality. Comprehensive data analysis enables public institutions to identify community needs more effectively, allocate resources more appropriately, and reduce the possibility of administrative errors arising from incomplete information. Documentary evidence also supports this interpretation by demonstrating the government's continuing efforts to integrate national databases and digital public services under the National Digital Transformation Program, thereby providing a stronger information foundation for administrative planning and policy implementation.

Despite these positive developments, participants consistently emphasized that successful digital governance transformation depends on institutional readiness as much as technological capability. While AI offers substantial opportunities for improving governance performance, the interviews revealed continuing concerns regarding regulatory adaptation, organizational change management, and institutional capacity. Participants argued that digital transformation requires

coordinated development of technology, governance frameworks, and human resources to ensure that technological innovation can be implemented responsibly and sustainably.

An information technology expert highlighted this issue during the interview:

"The biggest challenge in digital governance is no longer the availability of AI technology itself, but whether government institutions are fully prepared to adopt it effectively. Successful implementation requires clear legal frameworks, strong cybersecurity measures, and organizational readiness to adapt to new digital workflows. Many institutions still need continuous training so that public officials understand how to utilize AI responsibly while protecting sensitive public information. In addition, coordination among government agencies remains essential because AI systems depend on integrated and reliable data. Without sufficient institutional capacity, regulatory support, and public trust, the benefits of AI cannot be fully realized despite rapid technological progress." (Participant P6, Information Technology Expert)

This observation indicates that AI driven governance transformation extends beyond technological modernization. Effective implementation requires regulatory clarity, institutional coordination, and continuous organizational learning to ensure that digital innovations remain aligned with principles of transparency, accountability, and public trust. Overall, the convergence of interview findings and documentary evidence suggests that AI has strengthened Vietnam's digital governance by improving administrative transparency, supporting evidence-based decision making, and enhancing institutional efficiency, while simultaneously highlighting the importance of governance capacity for sustaining long term digital transformation.

The findings demonstrate that the implementation of Artificial Intelligence (AI) has become a significant driver of public sector digital transformation in Vietnam. The integration of AI into public information systems has contributed to improving administrative efficiency, expanding public access to government services, and strengthening evidence-based decision making. The findings indicate that AI supports the development of more transparent and accountable governance by enabling digital documentation, enhancing institutional monitoring, and facilitating more responsive public service delivery. At the same time, participants consistently acknowledged that the sustainability of AI implementation depends not only on technological advancement but also on institutional readiness, regulatory adaptation, digital competencies, and effective data governance. The convergence between interview findings and documentary evidence suggests that Vietnam has established a strong foundation for AI enabled digital governance while continuing to address structural and organizational challenges associated with large term digital transformation. These empirical findings provide the basis for the subsequent discussion, which interprets the findings in relation to existing theories and recent studies on Artificial Intelligence, digital governance, and public information systems.

AI Driven Public Service Delivery Improvement

Beyond improving internal administrative processes and governance practices, the thematic analysis demonstrates that Artificial Intelligence has substantially enhanced public service delivery in Vietnam. Participants consistently emphasized that AI has transformed the way government services are provided by making them more accessible, efficient, and responsive to citizens' needs. Rather than merely digitizing existing procedures, AI has contributed to creating a more citizen centered service model in which administrative interactions become faster, more consistent, and available through multiple digital channels. These improvements have increased both institutional efficiency and public satisfaction with digital government services.

Interview findings further indicate that AI supported public services improve service quality through several interconnected mechanisms. First, AI enables continuous service availability, allowing citizens to access information regardless of office hours. Second, intelligent automation reduces waiting times and administrative burdens for both citizens and public officials. Third, integrated AI systems improve service consistency by providing standardized administrative guidance across different government agencies. Finally, AI generated analytical insights allow institutions to identify service bottlenecks and continuously improve service performance based on user demand and operational data. Collectively, these findings suggest that AI contributes to

a gradual transformation from process oriented public administration toward citizen oriented digital service delivery.

Table 3. AI Contributions to Public Service Delivery in Vietnam

Service Dimension	Interview Findings	Documentary Evidence
Service accessibility	Citizens access government information anytime through AI supported digital platforms.	National Public Service Portal provides integrated online public services accessible nationwide.
Response efficiency	Automated systems significantly reduce waiting times for administrative information and routine inquiries.	Government digital transformation reports emphasize automation to accelerate public service delivery.
Service consistency	AI provides standardized administrative guidance across agencies, reducing information discrepancies.	National Digital Transformation Program promotes standardized digital public services through interoperable platforms.
Citizen satisfaction	Participants reported greater convenience, lower administrative costs, and improved user experience.	Government reports indicate continuous expansion of citizen oriented digital services and online administrative procedures.

Source: Interview findings (2025); Government of Vietnam documentation reviewed by the researcher, including the National Digital Transformation Program and National Public Service Portal.

The interviews reveal that one of the most visible impacts of AI is the improvement of service accessibility. Participants explained that citizens are no longer constrained by office hours or geographical distance when seeking government information. AI powered digital platforms provide immediate responses to routine administrative inquiries, enabling users to complete preliminary administrative procedures remotely. As a result, citizens experience greater convenience while government agencies are able to serve a larger number of users simultaneously without proportionally increasing administrative resources.

One citizen representative explained:

"Digital public services supported by AI have made government services much easier to use. Whether we need information about administrative requirements, application procedures, or service status, the system is available at almost any time. This has reduced unnecessary visits to government offices and shortened the overall administrative process. Even when additional assistance is required, citizens already have sufficient preliminary information before contacting public officials, making the entire service process more efficient for both sides." (Participant P7, Citizen Representative)

This statement illustrates that AI contributes not only to administrative efficiency but also to improving citizens' overall service experience. Participants consistently associated service quality with accessibility, responsiveness, and the ability of government institutions to provide accurate information through integrated digital platforms.

Another important finding concerns the role of AI in improving service responsiveness. Government officials explained that automated information systems reduce repetitive administrative tasks, enabling employees to allocate greater attention to complex cases requiring human judgement. Rather than replacing frontline personnel, AI functions as an operational support system that improves institutional productivity while maintaining service quality.

A public administration officer explained:

"Since AI has taken over many repetitive administrative functions, our staff can dedicate more time to handling complicated cases that require direct communication and

professional judgement. This balance between automation and human interaction has improved service quality because citizens receive faster responses for routine matters while still obtaining personalized assistance when necessary. In our experience, AI has strengthened rather than diminished the role of public officials in delivering high quality public services." (Participant P8, Public Administration Officer)

Participants also emphasized that continuous data collection enables government institutions to improve services over time. AI generated operational data help identify recurring service problems, frequently requested information, and areas requiring organizational improvement. Consequently, public services become increasingly adaptive because institutional decisions are informed by real time evidence regarding citizens' needs rather than relying exclusively on periodic administrative evaluations.

The convergence between interview findings and documentary evidence indicates that AI has become an important driver of citizen centered public service delivery in Vietnam. By improving accessibility, reducing response times, increasing service consistency, and enabling continuous service evaluation, AI supports the government's broader objective of creating more efficient, inclusive, and responsive digital public services. These findings further demonstrate that the value of AI extends beyond administrative modernization, contributing directly to the quality of interactions between government institutions and citizens.

Institutional Readiness for Sustainable AI Adoption

The final theme emerging from the thematic analysis highlights that the long-term success of Artificial Intelligence (AI) implementation depends not only on technological innovation but also on institutional readiness. Across the interviews, participants consistently emphasized that sustainable AI adoption requires coordinated improvements in regulatory frameworks, organizational capacity, human resource competencies, digital infrastructure, and data governance. While Vietnam has made significant progress in integrating AI into public administration through its National Digital Transformation Program, participants acknowledged that institutional preparedness remains uneven across government agencies and administrative levels. Consequently, AI implementation should be understood as an organizational transformation that requires continuous adaptation rather than a one-time technological investment.

Participants further explained that institutional readiness consists of several interconnected dimensions. The first concerns the availability of adequate digital infrastructure capable of supporting AI applications across national and local government institutions. The second involves strengthening the digital competencies of civil servants through continuous education and professional development. The third dimension relates to governance capacity, including the establishment of clear regulatory frameworks, cybersecurity standards, and mechanisms for protecting personal data. Finally, institutional collaboration among ministries, provincial governments, and technology providers was identified as essential for ensuring interoperability and effective utilization of AI supported public information systems. These findings demonstrate that institutional readiness extends beyond technological preparedness and encompasses broader organizational and governance reforms.

Table 4. Institutional Readiness Factors Supporting Sustainable AI Adoption in Vietnam

Institutional Dimension	Interview Findings	Documentary Evidence
Digital infrastructure	Uneven technological infrastructure affects AI implementation across regions.	National Digital Transformation Program prioritizes nationwide digital infrastructure development.
Human resource capacity	Continuous training is required to improve AI competencies among civil servants.	Government digital transformation strategies emphasize digital skills development for public employees.
Regulatory framework	Participants highlighted the importance of AI governance, data protection, and cybersecurity regulations.	Government policies promote legal frameworks for digital governance, cybersecurity, and personal data protection.

Interagency collaboration	AI implementation requires integrated databases and coordination among government institutions.	National interoperability initiatives encourage integrated digital government platforms and shared administrative databases.
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Source: Interview findings (2025); Government of Vietnam documentation reviewed by the researcher, including the National Digital Transformation Program, Digital Government Strategy, and cybersecurity policy documents.

The interviews indicate that digital infrastructure remains one of the principal determinants of successful AI implementation. Although central government agencies have achieved substantial progress in digital modernization, participants explained that differences in technological capacity continue to exist across provinces and local government institutions. These disparities influence the speed and consistency of AI adoption because advanced digital applications require reliable internet connectivity, integrated information systems, and adequate computing resources. Consequently, participants regarded infrastructure development as a prerequisite for achieving equitable digital governance throughout Vietnam.

A senior government administrator explained:

"The implementation of AI cannot be equally effective across all government institutions because infrastructure capacity still differs between regions. Large cities generally possess better digital facilities and stronger technical support, while some local administrations continue to face limitations in connectivity, system integration, and technological resources. To achieve sustainable digital transformation, investment in infrastructure must continue alongside the expansion of AI applications so that all citizens receive comparable levels of digital public services regardless of their location." (Participant P9, Senior Government Administrator)

This statement demonstrates that participants perceive infrastructure development as a strategic investment that directly influences the inclusiveness of digital governance. Without adequate technological capacity, the benefits of AI may remain concentrated within institutions possessing greater financial and technical resources.

Another recurring finding concerns the importance of developing human resource capacity. Participants consistently argued that AI technologies cannot deliver optimal outcomes unless civil servants possess sufficient digital competencies to operate, supervise, and evaluate AI supported systems. Rather than replacing public employees, AI requires government personnel to perform new responsibilities involving digital monitoring, analytical interpretation, and technology management. Therefore, institutional learning was viewed as an indispensable component of sustainable AI adoption.

A digital transformation coordinator explained:

"Technology alone is never sufficient to transform public administration. Government employees need continuous training to understand how AI systems operate, how analytical results should be interpreted, and how digital tools can support public decision making responsibly. Building these competencies requires long term organizational commitment because digital transformation is fundamentally a process of developing people as much as developing technology. In our experience, institutional learning has become one of the most important investments for sustaining AI implementation." (Participant P10, Digital Transformation Coordinator)

Participants also emphasized that regulatory adaptation remains equally important. The expansion of AI applications requires clear governance mechanisms that define institutional responsibilities, data sharing procedures, ethical standards, and cybersecurity protocols. Several interviewees noted that regulatory uncertainty may slow AI adoption because government agencies require clear legal guidance before implementing advanced digital technologies. Therefore, participants viewed regulatory development as an enabling condition that strengthens institutional confidence while protecting citizens' rights in digital environments.

Overall, the convergence between interview findings and documentary evidence indicates that Vietnam has established a solid institutional foundation for AI enabled digital transformation while continuing to strengthen the organizational conditions required for long term sustainability. Institutional readiness emerges as a multidimensional concept involving infrastructure, human capital, regulatory capacity, and collaborative governance. Rather than functioning as supporting elements alone, these institutional dimensions determine whether AI can be implemented responsibly, equitably, and effectively across the public sector. Consequently, the findings suggest that sustainable AI adoption depends on maintaining a balanced investment in technological innovation and institutional development, ensuring that digital transformation remains aligned with principles of accountability, inclusiveness, and public value.

Discussion

Artificial Intelligence as a Strategic Enabler of Public Information System Transformation

The findings demonstrate that Artificial Intelligence has evolved beyond its traditional role as a technological innovation to become a strategic enabler of public information system transformation in Vietnam. Rather than functioning as a standalone digital application, AI has been embedded within existing public information systems to enhance administrative efficiency, improve access to government information, and strengthen evidence based decision making. The integration of chatbot services, machine learning, and digital interoperability illustrates that AI supports the modernization of administrative processes by enabling faster service delivery while maintaining the consistency and quality of public information (Wang et al., 2024; Diniz et al., 2025; Papadopoulos et al., 2025). These findings suggest that AI adoption represents an organizational transformation in which digital technologies reinforce institutional capacity rather than replace human decision making.

These findings are consistent with the Digital Era Governance perspective, which argues that digital technologies fundamentally reshape government operations through the integration of information systems, automation of administrative processes, and improved institutional coordination. Engin & Treleaven (2019) emphasize that AI represents the third wave of digital era governance because it enables governments to combine automation with data driven administration to improve public sector performance. Nurmandi & Younus (2025) argue that AI strengthens government effectiveness when intelligent technologies are integrated into organizational workflows rather than implemented as isolated technological innovations. The Vietnamese experience supports this perspective, demonstrating that AI adoption has become closely aligned with the National Digital Transformation Program, thereby connecting national digital policy with operational improvements across government institutions (Cao et al., 2025; Wibowo et al., 2025).

Another important contribution of the findings concerns the integration of service automation, machine learning, and digital interoperability as complementary components of public information system transformation. The evidence indicates that AI powered chatbots reduce administrative workloads by handling routine inquiries, while machine learning enables government agencies to analyse administrative data and identify emerging service demands. At the same time, digital integration facilitates information exchange among government institutions, improving coordination and reducing fragmentation in public administration. This integrated implementation reflects the argument of contemporary digital governance literature that AI creates greater public value when technological capabilities operate synergistically across organizational functions instead of supporting isolated administrative tasks.

The findings also reinforce previous studies suggesting that successful public information systems depend not only on technological sophistication but also on their capacity to improve institutional responsiveness (Atobishi et al., 2024; Rainy et al., 2023). Participants consistently perceived AI as a supporting mechanism that enhances employee productivity while allowing public officials to focus on more complex administrative responsibilities. This observation extends earlier research by demonstrating that AI does not diminish the role of civil servants but

instead complements professional judgement through intelligent automation. Consequently, the transformation of Vietnam's public information systems should be interpreted as a process of organizational augmentation in which technology strengthens administrative capability while preserving the importance of human oversight and institutional accountability.

Theoretically, this study contributes to the growing literature by positioning Artificial Intelligence as an institutional enabler of public information system transformation rather than merely a digital innovation. Unlike many previous studies that primarily evaluate AI from a technological perspective, the present findings demonstrate that sustainable digital transformation emerges through the interaction between intelligent technologies, organizational processes, and institutional governance. This perspective broadens existing discussions on AI enabled digital government by emphasizing that the effectiveness of public information systems depends on the simultaneous development of technological integration, organizational adaptation, and governance capacity, thereby providing a more comprehensive explanation of digital transformation within the Vietnamese public sector.

AI Driven Digital Governance and Institutional Performance

The findings demonstrate that the implementation of Artificial Intelligence has extended beyond improving administrative operations to fundamentally strengthening digital governance in Vietnam (Duy & Anh, 2025). Participants consistently perceived AI as a governance enabler that increases transparency, accountability, administrative efficiency, and evidence based decision making through integrated public information systems. Rather than replacing existing governance structures, AI supports institutional performance by enabling continuous digital documentation, real time monitoring, and systematic analysis of administrative information. This transformation illustrates that AI contributes not only to operational modernization but also to the broader institutional reform required to establish more responsive and transparent public administration.

One of the most significant governance outcomes identified in this study is the enhancement of transparency through AI enabled digital records. The findings indicate that automated documentation allows government institutions to maintain comprehensive administrative records that improve the traceability of decisions and facilitate institutional oversight. Unlike conventional paper based systems, digital documentation enables supervisors to monitor administrative activities more consistently while increasing public access to government information. This finding supports the principles of good governance, which emphasize transparency as a fundamental mechanism for strengthening public trust and reducing information asymmetry between governments and citizens. By making administrative processes more visible and verifiable, AI contributes to improving institutional legitimacy while reinforcing public confidence in digital government services.

Khan et al. (2025), Yuan & Chen (2025), the findings further reveal that AI strengthens accountability by creating more systematic mechanisms for monitoring institutional performance. Participants explained that integrated information systems allow government agencies to evaluate administrative activities continuously, reducing procedural ambiguity and improving organizational responsibility. This observation aligns with governance theories suggesting that accountability depends upon reliable information systems capable of documenting organizational actions and supporting performance evaluation. The integration of AI into administrative workflows therefore enhances not only operational efficiency but also the capacity of government institutions to demonstrate responsible governance through measurable and transparent administrative processes.

Another important contribution concerns the growing role of AI in supporting evidence based decision making. Participants consistently emphasized that machine learning and integrated data analytics enable policymakers to analyse large volumes of administrative information more rapidly and comprehensively than conventional approaches. Rather than relying on fragmented reports or individual judgement, government institutions increasingly utilize AI generated insights to identify emerging public needs, anticipate service demand, and allocate resources more effectively. These findings reinforce contemporary digital governance literature, which

argues that intelligent data analytics improve policy quality by providing governments with timely, accurate, and integrated information for strategic planning. Consequently, AI enhances not only the speed of decision making but also its analytical quality and policy relevance.

Administrative efficiency also emerged as a central outcome of AI driven governance transformation. Mishra et al (2024) said that, the implementation of intelligent automation reduces repetitive administrative tasks, allowing public officials to devote greater attention to complex responsibilities requiring professional judgement. This finding demonstrates that AI complements rather than substitutes human expertise within government organizations. The relationship between automation and human capability observed in this study reflects an organizational augmentation model, in which technology improves institutional productivity while preserving the central role of civil servants in interpreting information, resolving complex cases, and maintaining accountability. Such a balance is essential for ensuring that digital transformation strengthens governance without diminishing the human dimensions of public administration.

Despite these governance improvements, the findings indicate that technological capability alone cannot guarantee successful digital governance transformation. Participants repeatedly emphasized that regulatory adaptation, institutional coordination, organizational learning, and public trust remain indispensable prerequisites for translating technological innovation into sustainable governance outcomes. AI may enhance transparency, accountability, and decision making, yet these benefits can only be realized when supported by clear governance frameworks, effective cybersecurity measures, and coordinated institutional arrangements. This finding broadens existing discussions on digital governance by demonstrating that governance capacity and technological capability must evolve simultaneously rather than independently.

This study advances the understanding of AI driven digital governance by demonstrating that governance transformation results from the interaction between intelligent technologies and institutional reform. Unlike previous studies that primarily associate AI with operational efficiency, the present findings show that AI also reshapes governance capacity through greater transparency, stronger accountability, more informed policymaking, and improved administrative performance. The Vietnamese case therefore illustrates that AI should be understood as an institutional governance catalyst that enables governments to move beyond digital administration toward integrated, data informed, and citizen-oriented governance, while emphasizing that long term governance performance depends on the continuous alignment of technology, organizational capability, and public sector institutions.

AI and Citizen Centered Public Service Delivery

The findings indicate that Artificial Intelligence has significantly transformed public service delivery in Vietnam by promoting a more citizen centered approach to government services. Participants consistently reported that AI has improved service accessibility, response efficiency, service consistency, and overall citizen satisfaction through intelligent digital platforms. Unlike conventional administrative systems that often require face to face interaction and lengthy procedures, AI enables citizens to access government information and routine administrative services at any time through automated platforms. These findings suggest that AI contributes to shifting public administration from a process-oriented model toward a service model that prioritizes citizens' needs, convenience, and accessibility.

The improvement in service quality observed in this study supports the Public Value perspective, which argues that digital transformation should ultimately generate value for citizens rather than merely increase organizational efficiency (MacLean & Titah, 2022; Pang et al., 2014; Scupola & Mergel, 2022). Participants explained that AI powered services reduce waiting times, simplify administrative procedures, and provide standardized information across government institutions. These outcomes strengthen citizens' experiences by minimizing bureaucratic complexity while ensuring greater consistency in service provision. Previous studies on digital public services similarly argue that intelligent automation enhances user satisfaction by increasing responsiveness and reducing transaction costs. The Vietnamese experience extends this understanding by demonstrating that AI simultaneously benefits both citizens and public

officials, creating a more balanced relationship between technological efficiency and human interaction within service delivery.

Another important finding concerns the complementary relationship between AI and public employees. Rather than replacing frontline personnel, AI performs repetitive administrative functions that allow civil servants to concentrate on complex cases requiring professional judgement and direct communication with citizens. This organizational arrangement reflects a collaborative human AI model in which technology supports, rather than substitutes, human expertise. The continuous collection and analysis of service data enable government institutions to identify recurring service problems, monitor citizen needs, and continuously improve service performance. Consequently, AI contributes not only to operational efficiency but also to adaptive public service management based on real time evidence.

This study demonstrates that AI creates public value by enhancing the quality of interactions between governments and citizens through more accessible, responsive, and reliable digital services. The findings extend previous research by showing that citizen centered digital transformation depends not only on intelligent technologies but also on their integration within organizational processes that prioritize inclusiveness, responsiveness, and continuous service improvement. Accordingly, AI should be viewed as a strategic instrument for strengthening public service quality while supporting governments in building more inclusive, efficient, and citizen oriented digital administration.

Institutional Readiness for Sustainable AI Adoption

The findings demonstrate that the long-term sustainability of Artificial Intelligence implementation depends not only on technological advancement but also on institutional readiness. Participants consistently emphasized that successful AI adoption requires coordinated development of digital infrastructure, human resource competencies, regulatory frameworks, data governance, and interagency collaboration. Although Vietnam has made considerable progress through its National Digital Transformation Program, institutional preparedness remains uneven across government organizations, particularly in relation to infrastructure capacity and organizational capability. These findings indicate that AI implementation should be understood as a multidimensional institutional transformation in which technological innovation must be supported by organizational adaptation and governance reform to achieve sustainable outcomes.

The results support the Institutional Theory perspective, which argues that organizational change is influenced not only by technological resources but also by governance structures, institutional norms, and organizational capabilities. Participants highlighted that digital infrastructure and continuous human resource development are essential prerequisites for maximizing the benefits of AI (Mwita & Kitole, 2025; Kulkov et al. 2024; Budhwar et al., 2023). At the same time, regulatory clarity regarding cybersecurity, data protection, and ethical AI governance was considered fundamental for building institutional confidence and maintaining public trust. These observations reinforce previous studies suggesting that digital transformation cannot be sustained through technological investment alone but requires complementary institutional reforms that strengthen organizational resilience and adaptive capacity.

Another important finding is the critical role of collaboration in supporting sustainable AI adoption. Participants emphasized that effective implementation depends on coordination among government agencies, integrated administrative databases, and partnerships with technology providers to ensure interoperability across public information systems. This finding aligns with the principles of Collaborative Governance, which emphasize that complex public sector innovations require collective action among multiple institutions rather than isolated organizational initiatives. The Vietnamese experience demonstrates that collaboration facilitates knowledge sharing, strengthens institutional learning, and promotes the coordinated development of governance mechanisms necessary for responsible AI implementation across different levels of government.

This study extends the existing literature by conceptualizing institutional readiness as a multidimensional foundation for sustainable AI adoption. Rather than viewing infrastructure,

regulation, human resources, and collaboration as separate enabling factors, the findings demonstrate that these dimensions interact to determine whether AI can generate long term public value. Consequently, sustainable digital transformation requires governments to balance technological innovation with continuous institutional capacity building, ensuring that AI implementation remains transparent, accountable, secure, and inclusive while strengthening the overall effectiveness of digital governance.

CONCLUSION

Artificial Intelligence has become a strategic enabler of digital transformation within Vietnam's public sector by strengthening public information systems, improving administrative efficiency, and advancing digital governance. The findings indicate that AI enhances service accessibility through intelligent automation, supports evidence-based decision making through machine learning and integrated data management, and promotes greater transparency and accountability by enabling digital documentation and continuous institutional monitoring. Furthermore, AI contributes to more citizen centered public service delivery by reducing administrative burdens, improving response efficiency, and increasing service consistency. Despite these achievements, the sustainability of AI implementation remains dependent on institutional readiness, including adequate digital infrastructure, continuous human resource development, regulatory adaptation, cybersecurity, data governance, and interagency collaboration. The study therefore concludes that successful AI adoption extends beyond technological innovation and requires comprehensive organizational and governance transformation. Collectively, these findings highlight that the long term success of AI driven digital transformation in Vietnam depends on balancing technological advancement with institutional capacity building, ensuring that digital governance remains transparent, accountable, inclusive, and responsive to the evolving needs of citizens.

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