# Post-Digital Public Administration: The Transition from E-Government to Smart Government

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**Abstract**

The research dealt with the topic of post-digital public administration as one of the recent trends in the development of government administration, focusing on the transition from e-government to smart government and the role of modern digital technologies in improving institutional performance and the quality of public services. The research problem was that many government institutions continue to rely on traditional e-Government models without fully moving towards smart government based on artificial intelligence, big data and smart analytics. The aim of the research was to clarify the concept of post-digital public administration, analyze the nature of the transition towards smart government, and identify the most prominent modern technologies and challenges associated with this transformation. The importance of the research stems from the importance of digital transformation in the development of Public Administration, improving the efficiency of government services, enhancing transparency and institutional sustainability.

The research relied on the descriptive-analytical approach and the use of the questionnaire as a data collection tool. The results showed that e-government contributed to improving the speed of completing transactions and reducing administrative red tape, while Smart Government had a positive role in improving the quality of government services and enhancing citizens ' satisfaction. The results also showed that cybersecurity, weak infrastructure and lack of digital skills are the most prominent challenges facing smart transformation. The research recommended the need to develop digital infrastructure, strengthen cybersecurity, expand the use of smart technologies, and qualify human resources to support the transition towards post-digital public administration.

**Keywords:** *Post-Digital Public Administration; e-Government; Smart Government; digital transformation; artificial intelligence; cybersecurity; smart government services.*

**First, the introduction.**

In recent decades, the world has witnessed major transformations in public administration as a result of the rapid development of information and communication technologies, as digitization has become a key element in the development of government working methods and improving public services. This development has led to the emergence of e-government, which aimed to transform traditional procedures into digital services based on the internet and electronic applications to facilitate transactions and enhance communication between the government and citizens. As technical progress continues, digital transformation is no longer limited to the digitization of services, but has evolved to include the use of artificial intelligence, big data, cloud computing, and the Internet of things in service management and decision-making. Hence, the concept of smart government emerged as an advanced stage of e-

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government, as it focuses on providing flexible and proactive services capable of adapting to the needs of citizens and achieving efficiency, transparency and sustainability.

This development has led to the emergence of the concept of Post-Digital Public Administration, which is based on building a smart government system based on technical innovation and continuous interaction with society. It also seeks to reformulate the relationship between the state and the citizen through the use of technology to improve the quality of services, enhance transparency and raise the efficiency of government performance. The shift from e-government to Smart Government represents a strategic shift in the philosophy of Public Administration, as governments are no longer content with digitizing procedures, but have become dependent on smart systems and predictive analytics to provide integrated services and improve the citizen experience. This transformation is also related to the concepts of smart cities and digital governance, which rely on integration between government institutions and the exchange of data in an immediate and secure manner.

Despite the great advantages of smart government, this transformation faces several challenges, including weak digital infrastructure, high transformation costs, cybersecurity risks, in addition to the need to develop human resources skills and promote digital culture. The corona pandemic has also contributed to accelerating the transition towards digital management, highlighting the importance of investing in technical infrastructure and developing flexible and crisis-resistant government systems. The importance of this research stems from addressing the topic of transformation from e-government to smart government within the framework of Post-Digital Public Administration, focusing on modern technologies, challenges and opportunities associated with this transformation, as well as highlighting the role of smart government in improving the quality of public services, enhancing efficiency, transparency and achieving sustainable development.

**1. The problem of research:** the problem of research lies in the fact that many government institutions still rely on traditional e-Government models that focus on digitizing services only, without a complete transition towards smart government capable of employing modern technologies in decision-making and improving institutional performance. Hence the main question arises:

**What is the nature of the transition from e-government to smart government under the post-digital public administration, It branches out from:**

- The concept of Post-Digital Public Administration and the nature of the transition from traditional e-government to modern smart government.
- What are the most prominent technologies used in smart government, such as artificial intelligence, big data and cloud computing and their role in developing government performance.
- What are the challenges facing smart transformation, in addition to the role of smart government in improving the quality of public services and raising the efficiency of institutional performance.

**2. Research objectives:** the research aims to:

- The research aims to explain the concept of Post-Digital Public Administration and explain the nature of the modern transformations witnessed by the government administration in light of the accelerated technological development.
- The research focuses on studying the stages of development of government administration from e-government to smart government, while clarifying the essential differences between them.
- The research seeks to identify the most important modern technologies supporting smart government, as well as analyzing the challenges and obstacles facing smart digital transformation.
- The research aims to provide a set of proposals that contribute to enhancing smart government applications and improving the efficiency of government services.

**3. The importance of research:** the importance of research stems from the importance of digital transformation as one of the main pillars in the development of Public Administration and improving the efficiency of government institutions, especially in light of the increasing expansion in the use of smart technologies and modern digital systems in the provision of public services. The importance of the research is also highlighted by the need for government institutions to adopt more flexible, efficient and sustainable management models capable of keeping pace with accelerated technical developments and improving the quality of government performance. In addition, the research

contributes to supporting modern studies related to smart government and digital management by providing an analytical vision that clarifies the dimensions of the transformation towards Post-Digital Public Administration and the challenges associated with it.

**4. Research hypotheses:** based on the objectives and problems of the research, a main hypothesis and a number of sub-hypotheses were formulated in order to test the nature of the relationship between the transition towards smart government and the development of post-digital public administration. The main hypothesis: there is a significant relationship between the transition from e-government to smart government and the development of post-digital public administration. Sub-hypotheses:

- Smart government contributes to improving the quality of public services and raising the efficiency of government performance.
- Modern technologies, such as artificial intelligence and big data, are positively influencing the success of the transition towards smart government.
- The process of transformation towards smart government faces technical, administrative and security challenges that affect the efficiency of the application of post-digital public administration.

**5. Previous studies:**

Many recent studies have dealt with the transition from e-government to smart government within the framework of post-digital public administration, where the United Nations study (United Nations, 2022) focused on the reality of digital transformation in a number of countries around the world, and confirmed that smart governments rely on artificial intelligence, big data and the Internet of things to improve the quality of public services and raise the efficiency of government performance. The OECD study OECD (2021) also noted that modern public administration has moved beyond the traditional digitization stage towards smart governance based on digital integration and intelligent analytics in decision-making. In the same context, the study of Alketbi et al. (2020) that smart government applications in the UAE have contributed to improving citizen satisfaction, reducing time and effort, and enhancing government transparency. The study of Meijer and Bolívar (2016) also confirmed that smart government is not limited to providing services electronically, but includes enhancing community participation and involving citizens in the decision-making process, while the study of Gil-Garcia et al focused. (2018) on the importance of big data in supporting government planning and improving the efficiency of public services. The anthropoulos Study (2017) showed the relationship between smart cities and smart government, stressing the role of modern technologies in achieving sustainable development and improving the management of urban resources and services.

In recent years, interest in topics and studies that are concerned with post-digital public administration has increased, as explained by the study of Hujran et al. (2023) that smart transformation faces challenges related to infrastructure, cybersecurity and resistance to managerial change, while a study by Priyowidodo et al.noted. (2024) pointed out that smart government contributes to raising the efficiency of government performance, improving the quality of administrative decisions and promoting sustainable development. The Alenezi study (2023) also found that the use of artificial intelligence in government institutions has improved the speed of service delivery and reduced operational costs. On the other hand, the study was confirmed by Kankanhalli et al. (2022) the importance of big data in supporting public policies and government decision-making, while the study of Janssen et al. (2022) that the success of smart government depends on the integration of technology, human resources and legal legislation. The Sharma and Gupta study (2024) also noted that government digital transformation has become a strategic necessity to achieve institutional flexibility and enhance the competitiveness of countries. The study also focused on Al-Mamary et al. (2023) on the role of cloud computing and the Internet of things in the development of smart government services and improving the efficiency of public institutions.

A study by Chen et al showed. (2024) that the applications of artificial intelligence and predictive analytics have contributed significantly to the development of government management and improving the response of enterprises to crises and variables, while the study of Rahman et al confirmed. (2023) that cybersecurity and data protection are two of the most important challenges facing smart governments in the digital age.

Through a review of previous studies, it is clear that most studies agreed that Smart Government represents an advanced stage of e-government, and that the success of post-digital public administration depends on the

availability of advanced digital infrastructure, supportive legislation, and human competencies capable of dealing with modern technologies. The studies were also unanimous on the importance of artificial intelligence, big data and the Internet of things in the development of government services and achieving efficiency, transparency and sustainability. The current research is characterized by its focus on analyzing the transition from e-government to smart government within the framework of post-digital public administration in a comprehensive manner, focusing on the technical, administrative and organizational dimensions and future challenges associated with this transition.

**Secondly: The Theoretical Framework.**

**1. Post-Digital Public Administration (concept and characteristics).**

Public administration is defined as the process that involves planning, organizing, directing and controlling public resources with the aim of achieving the public interest and providing government services efficiently and effectively. The concept of Public Administration has traditionally been associated with the management of government institutions and the implementation of public policies through organizational structures and approved administrative procedures. However, the rapid technological developments have led to fundamental changes in the nature of Public Administration and its working methods, which has led to the emergence of modern concepts based on digitization, smart governance and administrative innovation. (Rodríguez, 2026)

Public administration is one of the main axes in building a modern state, as it contributes to achieving economic and social development, improving the quality of public services, and strengthening the relationship between the state and The Citizen. With the advent of the Fourth Industrial Revolution and smart technologies, it has become necessary to reformulate traditional management concepts to fit into the modern digital environment. (Manea et al, 2026, 122) The concept of digital public administration refers to the use of information and communication technologies in the implementation of administrative processes and the provision of government services electronically in order to improve efficiency and reduce time and costs. This concept has emerged as a result of the development in the use of computers and the internet within government institutions, as governments have become increasingly dependent on electronic systems for managing government data and transactions. (Somnah, 2024, 1-7) the most important goals of digital public administration are:

- Improving the quality of government services: digital management contributes to the provision of government services more quickly, accurately and flexibly, in order to achieve citizens ' satisfaction and enhance the efficiency of providing public services.
- Reduce routine and traditional procedures: electronic systems may help simplify administrative procedures and reduce paperwork, which reduces the time and effort spent on completing the work.
- Raising the efficiency of institutional performance: digital technologies improve the management of resources and government processes, which leads to increased productivity and improved administrative performance.
- Enhancing transparency and facilitating access to services: digitization contributes to enhancing transparency and accountability, in addition to enabling citizens to access government services easily and at any time.

E-government has been one of the most prominent applications of digital public administration, as governments have relied on websites and digital platforms to provide services to citizens and companies electronically. As for the concept of post-digital public administration, this concept (Post-Digital Public Administration) has emerged as an advanced stage beyond the concept of traditional digitization, where modern management is not limited to the use of technology only, but depends on the Intelligent Integration of digital technologies, administrative processes and decision-making. Post-digital public administration focuses on: (Manea et al, 2026, 122)

- Employing artificial intelligence in government services.
- The use of big data in decision-making.
- Enhancing digital interaction with citizens.
- Building smart interconnected governments.
- Develop proactive services based on Intelligent Data Analysis.

This concept reflects a qualitative shift in the philosophy of government management, as technology has become a strategic element in developing government performance and achieving sustainable development. As for

the characteristics of post-digital public administration, post-digital public administration is characterized by a set of characteristics, the most prominent of which are: (Somnah, 2024, 1-7)

- Digital integration: modern government institutions rely on interconnected systems that allow the immediate exchange of data and information between various government agencies.
- Corporate intelligence: artificial intelligence and predictive analytics technologies are used to support management decision - making.
- Proactive services: smart governments seek to provide services before they are requested from the citizen based on data analysis.
- Transparency and governance: digital systems help promote transparency and reduce administrative corruption.
- Flexibility and quick response: modern management is characterized by its ability to adapt to environmental crises and changes quickly and efficiently.

**2. E-Government (concept, objectives and challenges):**

The concept of e-government is the use of information and communication technologies, especially the internet, to provide government services to citizens and institutions electronically, which contributes to improving efficiency and effectiveness and reducing administrative costs. (Fernandez et al., 2023, 11) E-government has emerged with the widespread development in the use of the internet during the nineties, as governments began to convert traditional paper services to digital services. While the objectives of e-government are aimed at: (Shah et al, 2022, 61-76)

- Improving the quality of public services.
- Reducing administrative red tape and enhancing communication between the government and The Citizen.
- Speeding up the completion of government transactions.
- Promote transparency and reduce corruption.
- Reduction of operational costs.

The following figure shows us the types of interaction in e-government, which includes several types of interaction, the most important of which are:

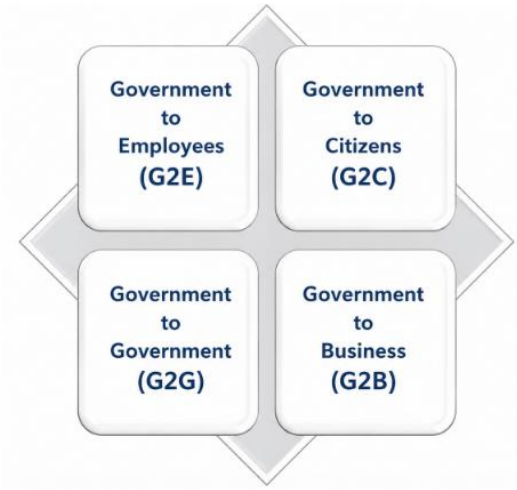


Figure 1. Types of interaction in e-government.

Source: by the authors 2026.

Figure 1 shows the types of interaction in e-government, which represent the digital relations between the government and various parties with the aim of improving the efficiency of public services and enhancing the speed of communication and information exchange. These types include interaction between the government and citizens (G2C) through the provision of electronic services to citizens, interaction between the government and the business sector (G2B) to facilitate trade and investment transactions, in addition to interaction between government institutions

themselves (G2G) to enhance integration and data exchange, as well as interaction between the government and employees (G2E) focused on providing administrative services to employees electronically. These interactions contribute to raising the efficiency of government performance, reducing administrative red tape and improving the quality of public services. The following figure shows the advantages of e-government: (Hashim, 2024, 124-131)


Figure 2. Advantages of e-government.

Source: by the authors 2026.

Figure 2 shows the main advantages of e-government and its role in developing government performance and improving the quality of public services. E-government contributes to speeding up the completion of transactions and reducing the time and effort spent by citizens and institutions, by providing services electronically around the clock. They also help reduce red tape and paperwork, which leads to lower operational costs and improve the efficiency of administrative performance. E-government also promotes transparency and accountability by facilitating access to government information and reducing the chances of administrative corruption. In addition, it contributes to improving communication between the government and citizens, raising the level of satisfaction of beneficiaries, as well as supporting integration between government institutions and more accurate and effective data exchange.

The most prominent challenges of e-government are a set of obstacles that may affect the efficiency of implementing digital transformation within government institutions, and can be clarified through the following points: (Hashim, 2024, pp. 124–131)

- Weak digital infrastructure: the lack of technical equipment and modern communication networks hampers the efficient implementation of electronic services.
- Lack of technical competencies: some organizations suffer from limited digital expertise and skills needed to manage electronic systems.
- Resistance to management change: digital transformation may face rejection from some employees due to adherence to traditional procedures.

Cybersecurity risks and weak digital culture: cyberattacks and poor technical awareness of some individuals pose major challenges to the success of e-government.

**3. Smart Government (concept-characteristics-technologies)**

The concept of smart government is an advanced government model that relies on smart technologies, big data and artificial intelligence to provide integrated, flexible and proactive government services that achieve citizen satisfaction and raise the efficiency of government performance. Smart government is an advanced extension of e-government, but it differs from it in its reliance on smart systems and real-time data analysis. (Matana et al., 2023, 377-404)

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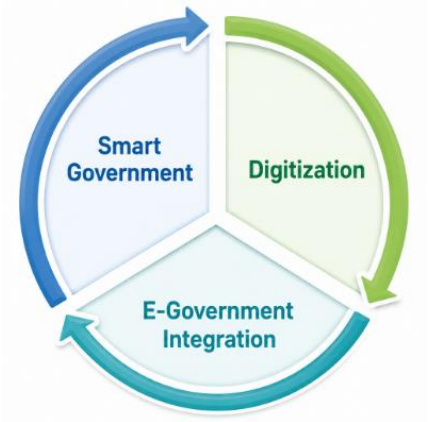
Smart government has a set of characteristics that make it more efficient and flexible in providing public services, as it relies on the provision of proactive services through data analysis and forecasting the needs of citizens before submitting applications, which contributes to improving the quality of services and raising the level of satisfaction of beneficiaries. Smart government is also based on instant interaction with citizens through modern digital applications and platforms, which enhances the speed of communication and response. It also relies heavily on big data and intelligent analytics to support government planning and decision-making processes, as well as institutional integration that connects government institutions within a unified digital network that contributes to the exchange of information in an accurate and secure manner. In addition, smart government is based on the principle of continuous innovation through the continuous development of government systems and services (Alqaryouti et al., 2024, 142–161).

Technologies used in smart government may include artificial intelligence, which contributes to data analysis, automates processes and improves decision-making by decision makers, as well as big data, which helps governments understand the needs of citizens more accurately. The Internet of things is used to connect government devices and systems and exchange data instantly, while cloud computing provides a flexible and secure environment for storing data and running government applications. Blockchain technology also contributes to enhancing information security and transparency in digital government transactions (Alzoubi et al., 2025, 209).

**4. Transformation from e-government to Smart Government (concept - stages effects)**

The concept of smart transformation refers to the smart transformation or the process of transition of governments from the stage of providing services electronically to the stage of using smart technologies and digital analytics in the management of government operations and decision-making. This transformation is part of the global trend towards post-digital public administration. (Abulhaija, 2025) the following figure shows the stages of the transition towards smart government:




.Figure 3. Stages of transformation towards smart government

Source: by the authors 2026.

The transformation towards smart government is going through several basic stages, starting with the digitization stage, which focuses on converting traditional documents and services into electronic services in order to facilitate procedures and improve the speed of completion. This is followed by the electronic integration phase, in which government institutions are connected within a unified digital network to effectively exchange data and information. The last stage is the Smart Government stage, which relies on the use of artificial intelligence and Big Data Technologies to provide smart and proactive government services that contribute to improving efficiency and quality of government performance. The following are the requirements for the transition towards smart government.

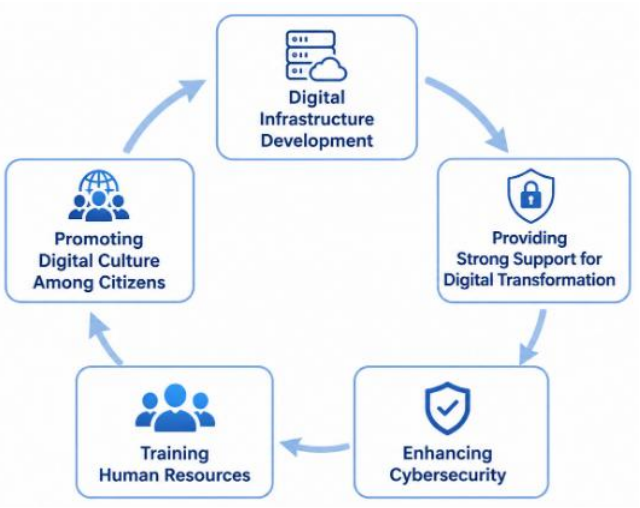



Figure 4. Requirements for the transition towards smart government.

Source: by the authors 2026.

Figure 4 shows the requirements for the transition to smart government, which represent the main foundations necessary for the success of the digital transformation process in government institutions. These requirements include the development of digital infrastructure by providing communication networks and modern technical systems capable of supporting smart services with high efficiency. The transformation also requires the existence of supportive legislation and laws that regulate digital transactions and protect government data and information. It also highlights the role of cybersecurity in protecting electronic systems from attacks and breaches, in addition to the importance of human resources qualification and developing the skills of employees to deal with modern technologies. The transformation also requires the dissemination of Digital Culture and enhancing technological awareness among citizens and institutions to ensure the effective use of smart government services and achieve sustainable digital integration.

The most prominent challenges of smart transformation in public administration are represented by a number of important aspects that affect the success of the Smart Government application, and they can be explained as follows (Hujran et al., 2023, pp. 811–834):

- Technical challenges: the weak digital infrastructure and the dependence of some organizations on outdated traditional systems hinder the process of smart transformation.
- Management challenges: include resistance to organizational change and poor coordination between government institutions, which limits the efficiency of implementing digital projects.
- Security challenges: related to the risks of cyber attacks and data leakage, which requires advanced protection and cybersecurity systems.
- Financial challenges: they appear in the high costs of developing smart systems and modernizing the technical infrastructure necessary for digital transformation.

Smart government is one of the most prominent recent trends in the development of Public Administration, because it has positive effects that contribute to improving the performance of government institutions and enhancing the efficiency of public services, and the most prominent of these effects can be illustrated by the following points (Priyowidodo et al., 2024):

- Improving the quality of public services: smart government contributes to providing more rapid, accurate and flexible services through relying on modern digital technologies, which helps to simplify procedures and reduce the time and effort spent on completing government transactions.
- Increasing the efficiency of government performance: smart government relies on digital systems and smart analytics in managing government operations, which leads to raising performance efficiency, improving decision-making and reducing operational costs.

- Enhancing transparency and accountability: smart systems help provide accurate and immediate information, which contributes to reducing administrative corruption and enhancing transparency and oversight within government institutions.
- Supporting sustainable development and raising citizens ' satisfaction: smart government works to develop public services and improve the experience of citizens, in addition to supporting sustainable development through the optimal use of modern resources and technologies.

It is clear from the previous presentation that post-Digital Public Administration represents an advanced stage in the development of government administrative thought, as governments have moved from simply digitizing services to employing smart technologies in building an integrated government system based on data, artificial intelligence and instant analysis of information. Smart government has become the modern model of government management capable of achieving efficiency, flexibility and sustainability in the provision of public services. Despite the challenges facing this transformation, accelerating technological developments are forcing governments to adopt smart digital strategies to ensure improved government performance and achieve sustainable development in the digital age.

**Third: research methodology.**

**1. Research approach:**

The research was based on the descriptive analytical approach for its suitability to the nature of the study, as this approach is used in describing and analyzing the phenomenon of transformation from e-government to smart government within the framework of post-digital public administration, as well as analyzing the relationship between modern digital technologies and the efficiency of government performance and the quality of public services. The descriptive-analytical approach also aims to collect, analyze and interpret data related to the subject of the study to reach scientific results that help in understanding the nature of government digital transformation and its administrative, organizational and technical dimensions.

**2. Research community and sample:**

The research community consists of a group of individuals related to the field of Public Administration and digital transformation, including employees working in government institutions, specialists in public administration and digital transformation, as well as employees in the Departments of Information Technology and e-government. The community also includes academics and researchers interested in the topics of smart government and digital management, because they have the necessary knowledge and experience to understand the dimensions of the transition from e-government to smart government and analyze the challenges and opportunities associated with Post-Digital Public Administration, which contributes to providing accurate data that support the objectives of the study and achieve more comprehensive and objective scientific results.

While a random sample of employees in government institutions and entities associated with digital transformation was selected, in order to identify their opinions about the reality of e-government and the transition towards smart government with about 200 samples.

**3. Data collection tools:**

The research relied on two main data collection tools, the first was represented by secondary sources, which included scientific books, theses and theses, previous studies, international reports related to smart government and digital transformation, as well as scientific articles published in refereed journals, in order to build the theoretical framework and enhance the scientific aspect of the study. The second tool was a questionnaire designed to measure the opinions of respondents about the level of implementation of e-government, the requirements of the transition to smart government, the role of modern technologies in the development of Public Administration, in addition to the challenges facing Post-Digital Public Administration, which contributes to achieving the research objectives and reaching accurate and objective results.

Table 1. Likert pentatonic scale

| Likert scale | Response | Weighted Maen |
|---|---|---|
| 1 | Strongly Disagree | 1.00- 1.79 |
| 2 | Disagree | 1.80- 2.59 |
| 3 | Somewhat | 2.60 - 3.39 |
| 4 | Agree | 3.40 - 4.19 |
| 5 | Strongly agree | 4.20 - 5.00 |

Source: by the authors 2026.

**4. Veracity and consistency of the form:**

The veracity and consistency of the questionnaire was verified to ensure its accuracy and suitability to the objectives of the study, as its paragraphs were presented to a group of arbitrators specialized in public administration and digital transformation to ensure the integrity of the wording and clarity of the content and its relevance to the research topic, which reflects the apparent honesty of the tool. As for the stability, Cronbach's Alpha coefficient was used to measure the degree of internal consistency of the resolution paragraphs, and the stability coefficient is statistically acceptable if its value exceeds (0.70), which indicates that the tool has a good degree of reliability and reliability in data collection and analysis.

| Variable | No. of Items | Alpha Cronbach's | Stability level |
|---|---|---|---|
| The reality of e-government. | 5 | 0.82 | Elevated |
| The shift towards smart government. | 5 | 0.85 | Elevated |
| The challenges of post-digital public administration. | 5 | 0.78 | Good |
| The impact of smart government on the development of Public Administration. | 5 | 0.88 | Very high |
| **Overall total** | 20 | 0.83 | Elevated |

Source: by the authors 2026.

The results of the cronbach's Alpha coefficient table indicate that the study instrument has a good degree of stability and internal consistency, as the value of the total stability coefficient reached (0.83), which is a high value exceeding the statistically acceptable limit of (0.70), which indicates the possibility of relying on the resolution in data collection and analysis. Cronbach's alpha values for the study axes also ranged from (0.78–0.88), which are values that reflect a good to very high level of stability. The Smart Government impact axis in the development of Public Administration recorded the highest stability value of (0.88), which indicates the strength of consistency between its paragraphs and accuracy in measuring the study variables.

**5. Research variables and hypotheses:**

The research deals with two main variables, the first of which is the independent variable represented by the shift towards smart government in its various dimensions, while the dependent variable is the development of post-digital public administration. Based on this, the main hypothesis revolves around the existence of a statistically significant relationship between the transition from e-government to smart government and the development of Public Administration in government institutions. There are also a number of sub-hypotheses that assume the existence of correlation and influence relationships between the dimensions of smart transformation and improving government performance, as these dimensions include e-government, modern smart technologies, digital infrastructure, and cybersecurity, as key factors in supporting Post-Digital Public Administration and improving the quality of government services.

The SPSS program was used to analyze the questionnaire data, relying on a set of statistical methods, distributed as follows: descriptive statistics (arithmetic mean: to determine the degree of approval of each statement - standard deviation: to measure the dispersion of sample answers) percentages and repetitions: to describe the characteristics of the demographic sample. As well as the stability test (cronbach Alpha) to measure the homogeneity and stability of the phrases within each axis.

**Analysis:**

Demographic sample: the figure below reflects the demographic sample that was targeted in our study, as most of the participants in the sample were males (62%), and the figure also shows that the largest segment in the questionnaire in terms of age ranged between 31-40 years (46%), which is the most representative category, followed by the category of 41-50 years. In terms of experience, the majority have an experience ranging from 11-20 years (74%), which indicates that the sample consists mostly of people with medium to high experience, which enhances the reliability of their opinions on the subject of research.

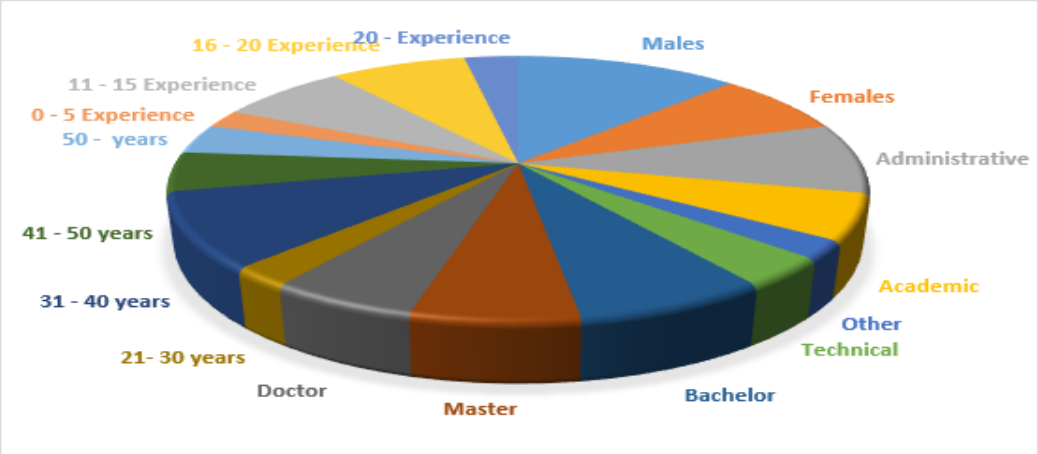



Figure (5) demographic sample

Source: by the authors 2026.

**Descriptive and statistical analysis of the main axes:**

Table (3) computational circles and the reality of e-government

| The question | Mean | Std. Deviation | Evaluation Level |
|---|---|---|---|
| The enterprise relies on electronic systems in the provision of services. | 4.23 | 0.74 | High |
| E-government contributes to reducing administrative red tape. | 4.10 | 079 | High |
| Digital systems help improve the speed of transaction completion. | 4.18 | 0.67 | High |
| There is a suitable digital infrastructure within the enterprise. | 3.95 | 0.84 | High |
| E-government contributes to enhancing transparency. | 4.22 | 0.77 | High |
| **Overall average** | 4.14 | 0.76 | High |

Source: by the authors 2026.

The results of the above table indicate that the reality of e-government came with a high level of appreciation, as the overall average was (4.14) with a standard deviation of (0.76), which indicates that there are positive trends among the respondents towards the application of e-government. The paragraph of the institution's dependence on electronic systems in the provision of services also received the highest arithmetic average of (4.23), while the

paragraph of the availability of digital infrastructure recorded the lowest relative average of (3.95), but it remained within the high level, reflecting the interest of institutions in developing the digital environment and improving government services.

Table (4) computational communities shift towards smart government

| The question | Mean | Std. Deviation | Evaluation Level |
|---|---|---|---|
| Smart government is based on artificial intelligence technologies. | 4.25 | 0.70 | High |
| Big data contributes to improving government decision - making. | 4.21 | 0.66 | High |
| Smart government helps improve the quality of public services. | 4.41 | 0.64 | Very high |
| Smart government provides proactive services to citizens. | 4.08 | 0.80 | High |
| Smart transformation contributes to raising the efficiency of government performance. | 4.28 | 0.71 | High |
| **Overall average** | 4.25 | 0.70 | High |

Source: by the authors 2026.

The results of Table No. (4) Indicate that the shift towards smart government was highly appreciated by the respondents, with an overall average of (4.25) with a standard deviation of (0.70), reflecting the researchers ' awareness of the importance of smart technologies in the development of government administration. The paragraph on improving the quality of public services also achieved the highest arithmetic average of 4.41, which indicates the positive role of smart government in raising the efficiency of services. On the other hand, the provision of proactive services came with the lowest relative average (4.08), but it remained within the high level, which confirms the growing interest in smart transformation in government institutions.

Table (5) computational communities' challenges of post-digital public administration

| The question | Mean | Std. Deviation | Evaluation Level |
|---|---|---|---|
| Poor infrastructure is a barrier to smart transformation. | 4.15 | 0.75 | High |
| There are challenges related to cybersecurity. | 4.31 | 0.67 | Very high |
| Organizations suffer from a lack of digital competencies. | 4.10 | 0.83 | High |
| Resistance to management change affects digital transformation. | 4.22 | 0.69 | High |
| Smart government needs supportive modern legislation. | 4.17 | 0.72 | High |
| **Overall average** | 4.19 | 0.73 | High |

Source: by the authors 2026.

The results of the table obtained indicate that the respondents believe that post-digital public administration faces high challenges, as the overall average was (4.19) with a standard deviation of (0.73). Cybersecurity challenges ranked first on average (4.31), reflecting the importance of protecting data and digital systems. The results also showed that there are obstacles related to infrastructure, digital competencies and legislation, which confirms the need to strengthen the technical and organizational aspects to support smart transformation in government institutions.

Table (6) computational circles the impact of smart government on the development of Public Administration

| The question | Mean | Std. Deviation | Evaluation Level |
|---|---|---|---|
| Smart government contributes to improving citizen satisfaction. | 4.28 | 0.69 | High |

| The question | Mean | Std. Deviation | Evaluation Level |
|---|---|---|---|
| Smart technologies help improve the quality of government decisions. | 4.35 | 0.64 | Very high |
| Smart government contributes to achieving sustainable development. | 4.22 | 0.73 | High |
| Smart systems reduce administrative corruption. | 4.11 | 0.78 | High |
| Smart transformation improves the efficiency of public services. | 4.38 | 0.62 | Very high |
| **Overall average** | 4.27 | 0.69 | High |

Source: by the authors 2026.

The results of the above table indicate that the impact of smart government on the development of Public Administration came with a high level of appreciation, as the overall average was (4.27) with a standard deviation (0.69), reflecting the respondents ' conviction of the importance of smart government in improving government performance. The paragraph improving the efficiency of public services received the highest arithmetic average of (4.38), followed by the paragraph improving the quality of government decisions with an average of (4.35), which indicates the positive role of smart technologies in supporting public administration. The results also showed that smart government contributes to enhancing citizens ' satisfaction, achieving sustainable development and reducing administrative corruption within government institutions.

Table (7) correlation coefficient between research variables

| Variants | Electronic government | Smart government | Development of Public Administration |
|---|---|---|---|
| Electronic government | 1.00 | 0.81 | 0.78 |
| Smart government | 0.81 | 1 | 0.86 |
| Development of Public Administration | 0.78 | 0.86 | 1 |
| **Level of significance** | | | 0.01 |

Source: by the authors 2026.

The correlation coefficient results indicate a strong positive correlation between the research variables, as the correlation coefficient between e-government and smart government reached (0.81), while the correlation coefficient between smart government and the development of public administration reached (0.86), which indicates that the shift towards smart government contributes significantly to the development of Public Administration and improving government performance.

Table (8) linear regression analysis of the impact of smart government in the development of Public Administration

| Independent variable | Coefficient Beta | Value T | Level of significance |
|---|---|---|---|
| Smart government | 0.86 | 11.54 | 0.000 |
| **Coefficient of determination $R^2$** | | **Value F** | |
| 0.73 | | 14.54 | 0.000 |

Source: by the authors 2026.

The linear regression table shows that there is a positive moral impact of smart government in the development of Public Administration, as the coefficient of impact reached (Beta = 0.84), a high value indicating the

strength of the impact. The identification coefficient was also (R2 = 0.71), which means that Smart Government explains 71% of the changes in the development of Public Administration.

**Fourth: Discussion of the Results.**

The research results showed that the reality of e-government in government institutions came at a high level, as the overall average of the e-government axis reached (4.12) with a standard deviation of (0.74), which reflects the clear dependence of institutions on electronic systems in the provision of public services. The results also showed that the paragraph improving the speed of completing transactions achieved a high arithmetic average of (4.25), which indicates that digital transformation directly contributed to reducing time and effort and improving the efficiency of administrative procedures. The results also showed that e-government has helped reduce administrative red tape and enhance transparency within government institutions, which reflects an increasing trend towards developing the government work environment using modern digital means. This supports the main hypothesis that e-government contributes to improving the quality of services and raising the efficiency of institutional performance.

With regard to the axis of transformation towards smart government, the overall average recorded a value of (4.20) with a standard deviation of (0.71), which indicates a high level of interest in smart government applications within government institutions. The paragraph improving the quality of public services also received the highest arithmetic average of (4.31), followed by the paragraph improving the efficiency of government performance with an average of (4.22), which reflects the respondents ' awareness of the importance of smart technologies in developing government performance and improving the services provided to citizens. The results also showed that the use of artificial intelligence and big data has become one of the key elements supporting government decision-making processes and improving the effectiveness of Public Administration. This confirms the validity of the first sub-hypothesis related to the role of smart government in improving public services and enhancing the efficiency of government administration.

As for the challenges of Post-Digital Public Administration, the results showed that this axis also came at a high level, with an overall average of (4.11) with a standard deviation of (0.77), which indicates that there are real challenges facing the transition towards smart government. Cybersecurity challenges ranked first with an average of 4.28, which reflects the importance of protecting government data and information from cyber risks. The weakness of the digital infrastructure also registered an average of (4.11), while the lack of digital competencies reached (4.03), which confirms that the success of digital transformation requires the development of infrastructure and the rehabilitation of human resources on a continuous basis. This confirms the validity of the third sub-hypothesis, which states that technical, administrative and security challenges affect the process of transition towards smart government.

Regarding the impact of smart government on the development of Public Administration, the results showed that the overall average reached (4.24) with a standard deviation (0.70), a high level reflecting the positive role of smart government in improving government performance. The paragraph on improving the efficiency of public services also achieved the highest arithmetic average of (4.36), followed by the paragraph on improving the quality of government decisions with an average of (4.31), which indicates that smart systems contribute effectively to raising the efficiency of government work and improving the quality of services provided. The results also showed that smart government helps to enhance citizens ' satisfaction, reduce administrative corruption, and achieve higher levels of transparency and accountability within government institutions. This supports the third sub-hypothesis, which indicates a positive impact of modern technologies on the success of the transition towards smart government.

**Fifth: Conclusions and Recommendations.**

Based on the results of the descriptive analysis and the hypotheses presented in the research, conclusions and recommendations can be formulated scientifically and systematically as follows:

**1. Conclusions:**

In the light of the results obtained through the theoretical aspect and field analysis, it was possible to identify a set of conclusions that reflect the reality of the transition towards smart government and post-digital public administration.

- Improving government performance: the study showed that e-government contributed to improving the efficiency of government performance, reducing administrative red tape and speeding up the completion of transactions within government institutions.
- The development of smart government: the results concluded that Smart Government represents an advanced stage of digital transformation based on artificial intelligence, big data and modern technologies in the development of Public Administration.
- Improving the quality of public services: the study showed that there is a positive impact of smart government in enhancing transparency, raising the level of citizen satisfaction, and improving the quality and efficiency of government services.
- Requirements for the success of digital transformation: the results confirmed that the success of Post-Digital Public Administration requires an advanced digital infrastructure, qualified human competencies and supportive legislation for smart transformation.
- The main challenges of smart transformation: the study showed that cyber security, weak infrastructure and lack of digital skills are the most prominent challenges facing the application of smart government.

**2. Recommendations:**

Based on the conclusions reached by the study, a set of recommendations was made that can contribute to the promotion of smart government applications and the development of digital public administration.

- Digital infrastructure development and institutional integration: the need to modernize the digital infrastructure and link government institutions within integrated electronic systems that support the efficiency of smart government applications and contribute to facilitating the exchange of information and government services.
- Employing modern technologies in government work: expanding the use of artificial intelligence, big data and smart technologies in order to improve the quality of government services and raise the level of institutional performance and decision-making.
- Development of human resources and digital skills: attention to the implementation of continuous training programs to develop the skills of employees in the government sector and qualify them to deal with the requirements of modern digital transformation.
- Strengthening cyber security and digital legislation: developing electronic protection systems and updating laws and legislation to ensure data security and sustainability of digital government services.
- Spreading digital culture and encouraging innovation: promoting digital awareness among employees and citizens and supporting government innovation to improve public services and achieve customer satisfaction.

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