



## E-Governance in Public Institutions: A Systematic Review of International Studies (2013 – 2024)

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### Abstract:

This study aims to review and compare research related to E-governance in public institutions with the aim of identifying common denominators that increase or decrease its effectiveness and to evaluate the evaluation methods used. By highlighting the factors of success and failure, the study paves the way for future research and links theory to practice. The study question addresses how E-governance is applied differently and similarly in Arabic and foreign studies, in addition to the effects of variables and the methodology used. Our study follows PRISMA rules, ensures quality and transparency of selection, and conducts a comprehensive analysis of research published between 2013 and 2024 based on reliable data standards such as Google Scholar. We focused in both Arabic and English on studies related to E-governance in the administrative field. These initiatives seek to improve communication and transparency while significantly enhancing electronic innovation and access to government services. However, they face difficulties such as a lack of expertise in the field of cybersecurity, a lack of funding, and weak infrastructure. Despite its weak adoption in government institutions due to weak infrastructure, E-governance enhances access to government information services. As a result, it is necessary to revitalize government institutions by allocating sufficient funding for their growth and implementing plans, policies, and strategies that meet E-governance also significantly improves the timeliness of policy advisory functions, which also increases the effectiveness of sound policy implementation.

**Keywords:** E-governance, governance, public institutions, organizational change, institutional effectiveness.

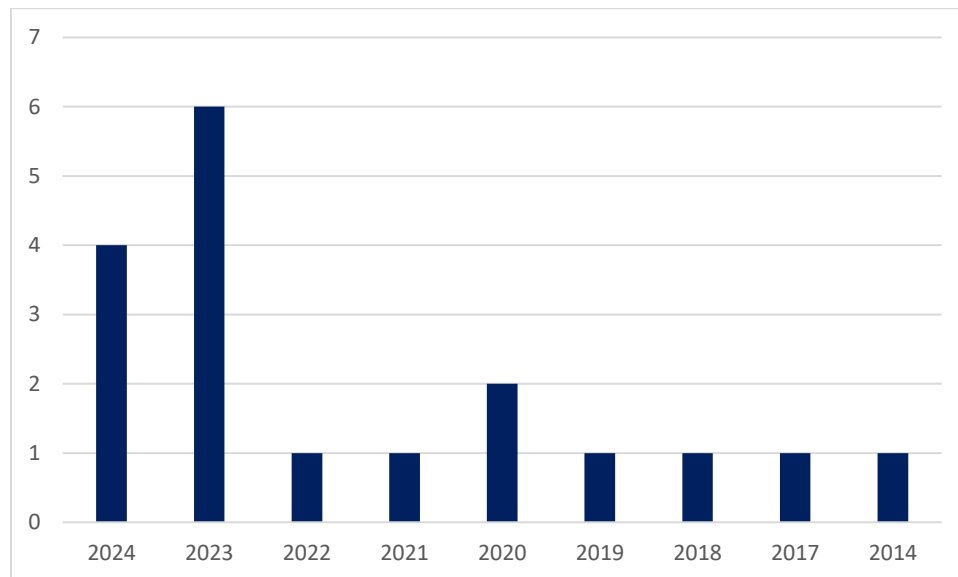
## 1. Introduction:

Governance generally refers to a set of systems, decisions, and laws that aim to achieve quality, excellence, and distinction in performance by selecting efficient and effective methods to achieve the organization's plans and goals (Al-Taha, 2021: 316). Some refer to it as governance, while others call it shared governance, sound management, or proper administration. The word governance is derived from the verb "govern", which means to control, manage, or rule. It derives from an ancient Greek word that expresses the abilities of a ship's captain while sailing. If he returns safely and soundly after completing his voyage, it can be said that he has demonstrated sound and rational management, as well as a unique approach. The same applies to vice versa (Al-Shammari, 2012: 90). The Organization for Economic Co-operation and Development defines governance as the policies and processes that ensure an organization is managed properly and effectively, including ensuring that managers and employees act appropriately, in accordance with the law, and in accordance with best practices (Hammoud & Daoud, 2012: 6). According to UNESCO ([www.unesco.org](http://www.unesco.org)), E-governance is the use of Information and Communications Technology (ICT) by public sectors to improve service and information delivery, enhance citizen participation in decision-making, and increase government effectiveness, accountability, and transparency (Hamadi et al., 2019: 595). E-government concepts have begun to evolve as a result of utilizing ICT applications, as traditional office transactions have become backward in various aspects of life. This has prompted governments in developed countries to utilize IT and harness it in the process of providing services to their citizens (Abd-Alkareem & Faisal, 2024: 273). E-governance refers to the general use of ICT before the government makes significant improvements to governmental services. Digital governance may enhance transparency and accountability in public administration to improve the quality of life of its citizens (Jalout & Abid, 2024: 87). As a result of the tremendous development in ICT at the present time, many countries are striving to implement E-governance in order to improve the quality of services provided to all stakeholders. This analysis will cover variables, design, data collection techniques, areas of application, sample sizes, study variables, and the correlations between these factors. Taking into account the rapid progress witnessed by ICT, as well as the efforts made by all governments and institutions to use E-governance, it is clear that integrating stakeholders (citizens, employees, and organizations) through participation in decision-making and providing an environment that promotes sound economic development is a fundamental necessity for improving the quality of services, rapid response, and achieving integration. All of this becomes possible through the use of ICT-based E-governance. This means that all organizations (governmental and non-governmental) must develop the necessary plans and policies to advance their ICT, in addition to training a group of human resources capable of dealing with contemporary technologies, raising the level of community awareness of the importance and objectives of E-governance, and providing the necessary funds to complete it. Many governmental and non-governmental organizations find it difficult to implement E-governance due to the lack of financial allocations facing the nation. A group of studies selected from different contexts have been conducted, which Sharing generally similar terminology with the current study, it serves as a representation of the cognitive efforts used and the findings of this study illustrate the critical role that E-governance plays in public institutions by establishing procedures and systems that ensure participation, transparency, accountability, information and service delivery, communication and interaction in governance processes. E-governance is not a technical application, but rather relates to policies, regulations, standards, and guidelines. For example, introducing technology into institutions without responsible regulation or the development of a sound policy can lead to increased risks (Abdul Mohsen & Tawfiq, 2019: 176).

The aim of this research was to examine and compare research on E-governance to identify common elements that enhance or limit its effectiveness in public institutions, as well as to present the measurement techniques used. This study is of great importance because it explains the researchers' successes and failures, links theory and practice, and helps strengthen the foundation for future research. Thus, the study seeks to answer a main question: How effective is the implementation of E-governance practices in governmental institutions, and what are the factors influencing their success? It also seeks to address a set of sub-questions related to challenges, motivators, and obstacles. The second section reviews the relevant literature, the third section analyzes the methodology used to select the studies, the fourth section shows the most important results, and finally, the results are discussed.

## 2. Literature review:

To achieve the objectives of the current study, the researchers referred to the most important studies that addressed the variable of E-governance in public institutions. Previous research is considered a primary source of inspiration for researchers, and each study is an extension of previous research. Therefore, it is necessary to review the literature, i.e., to know the work that has been done on this topic. Figure 1 shows the number of studies used according to the years.



**Figure 1:** The number of Papers by year.

**Source:** Prepared by the researchers.

### 2.1. The first group of Arabic studies reviewed E-governance in public institutions:

The results of the study by Abdelrahman, (2024) showed a direct role for E-governance in the challenges of the Corona pandemic, with statistical significance. The indirect role of academic leadership as a statistically significant mediating variable, with a partial role for academic leadership as a mediating variable in Jordanian higher education institutions, was also shown. A convenient sample of 933 faculty members was selected. To achieve the study's objectives, the descriptive-analytical approach was used, and a questionnaire was used as a data collection tool. In light of the study's results, several recommendations were presented, most notably paying attention to human resources as one of the main pillars of the success of E-governance and devoting attention to continuous training as an essential and fundamental matter in any university moving towards implementing E-governance and seeking to increase the effectiveness of its crisis management in the university environment. The researchers confirm through the study (Abdelrahman, 2024) that there is more than one variable that affects E-governance, and if

applied during times of crisis, it addresses many challenges. Due to the rapid change in technology in our world, we see a change in the concept of E-governance. E-governance has become a means to reduce costs, improve services provided, and increase effectiveness and efficiency in the public and private sectors.

A study (Abdel-Rahman, 2021) concluded that there is a statistically significant positive correlation between E-governance and institutional excellence. The combined dimensions of E-governance are explained. The most effective dimension of E-governance was the availability of infrastructure, followed by transparency mechanisms, accountability, effective participation, and work empowerment. The least of these dimensions was human resource development. The study was conducted on a random sample of 152 faculty members from various university colleges. Data were collected using a questionnaire as a means of data collection. The study relied on the social survey method. After analyzing the data, it is suggested that universities pay attention to practicing E-governance, as it increases their competitiveness and enhances opportunities for distinguished performance. There is an urgent need to emphasize the necessity of honing the skills of faculty members in terms of application and dealing with various electronic transactions. The researchers believe that the results in the study (Abdel-Rahman, 2021) may be inaccurate due to the emergency situation, which is Corona. The possibility of conducting the research at normal times may lead to different results. The results showed that the least influential dimension is human resource development, which is what the study (Enwelu & Nnaji, 2023) recommended. Similarly, distributing the questionnaire electronically may involve more than one party in answering it, which makes the results questionable. The results of the study by (Rasoul et al., 2024) showed that most of the items of the dimensions of electronic governance (represented by electronic accountability, electronic transparency, and electronic participation) obtained a high level, and also most of the paragraphs of the dimensions of the second axis of the organizational culture questionnaire (organizational values, organizational beliefs, and organizational standards) obtained a (high) level. This is an indication of the importance of the role of using information technology in colleges and institutes of physical education and sports sciences in activating transparency, accountability, and participation as tools for implementing modern administrative practices and their positive relationship with enhancing the organizational culture of the educational institution. The descriptive and survey approaches were used, and the sample size included 90 faculty members representing colleges and institutes of physical education in Erbil Governorate. The researchers concluded that the study (Rasoul et al., 2024) differed in the research community and sample from the studies (Kzar, 2022) and (Al-Jabria & Al-Habsiyya, 2024), but they agreed that E-governance affects many variables, such as performance and organizational distinction. The researchers believe that the results of the study cannot be generalized to other societies, as organizational culture, such as values, beliefs, and norms, differs from one society to another. Meanwhile, the study by Heikal, (2022) concluded that the reality of E-governance at Benha University, from the point of view of its faculty members, was at an average level for its four dimensions (transparency, responsibility, accountability, and social awareness) with regard to institutional excellence, which is defined as a state of administrative creativity and organizational excellence and achieving extraordinary levels of performance and implementation of production, marketing, financial, and other operations in the institution, resulting in results and achievements that outperform what competitors achieve and that satisfy beneficiaries and all stakeholders. The interest in the institution and the research concluded with the development of a proposed vision for the development of the four dimensions of E-governance at Benha University and the requirements for implementing this vision, as well as the obstacles that may hinder the implementation of this vision.

The current research relied on the descriptive approach, and in the view of the researchers in the study (Heikal, 2022), the vision that was developed for the four dimensions of E-governance may differ in other studies based on the circumstance, place, and time, and also the requirements for its implementation and obstacles differ from one country to another. Thus, the researchers conclude that the application of E-governance can achieve institutional excellence, while the study by Al-Jabria & Al-Habsiyya (2024) aimed to identify the degree of application of E-governance and its relationship to organizational effectiveness in government schools in Al-Dakhiliyah Governorate in the Sultanate of Oman.

The study used the descriptive correlational approach, and the questionnaire was used to collect data and information. It was applied to a sample of 392 male and female teachers who were selected using a simple random method. The study reached several results, the most important of which is that the degree of application of E-governance in government schools in Al-Dakhiliyah Governorate in the Sultanate of Oman was high. The study also concluded that the level of organizational effectiveness in government schools was high in all its dimensions. The results of the current study also revealed the existence of a positive correlation and statistical significance between the dimensions of E-governance and the dimensions of organizational effectiveness. After comparing the researchers with previous studies, such as the study (El-Deen & Atua, 2018) with the study (Al-Jabria & Al-Habsiyya, 2024), they found that there are several variables that may affect E-governance. The researchers also found that the study was conducted recently (in 2024), which confirms our statement that E-governance requires development in ICT to achieve it. The study by Aouri & Osama, (2022) concluded that there is an impact of the dimensions of E-governance, e-transparency, e-participation, e-accountability, and e-auditing on the performance of local communities, relying on the descriptive and analytical approach and using the questionnaire as a study tool. It was distributed to employees holding a certificate in the interests of the Tajnanat Municipality, where their number reached 60 employees. The study came out with a set of results: The success of local communities in activating their role and improving their performance depends on the extent of their ability to embody the principles of E-governance and the lack of clarity of the concept of E-governance among some employees in its broad concept of involving employees to draw up data, plans and programs in local administration, and the mixing of the concept of e-administration and E-governance to the point that the latter is considered unknown to local administration officials and the lack of openness of the Tajnanat Municipality to citizens and listening to their concerns and aspirations, whether in relation to the limited reception days or the inactive register of concerns in the administration. The researchers concluded through the study (Aouri & Osama, 2022). There is an unclear understanding of E-governance by employees, as it is a modern term, and there is no communication between the Tajnanat Municipality and the citizens. In the view of researchers, one of the principles of E-governance is communication because it is necessary to connect individuals to government services as well as knowledge related to information technology. Therefore, the government must employ fully skilled engineers who can deal with e-government in an effective manner, as well as data content to share any kind of knowledge or information online. Finally, it could be capital, which refers to the funds used by the government to provide its services. The results of the study by El-Deen & Atua (2018) showed that government departments in the Anbar Governorate Diwan have used E-governance, but to a limited extent, to enhance the success of the organizational change strategies followed by these departments. It also showed that these departments were able to seriously employ the changes that occurred in the field of electronic auditing to bring about more positive changes in the field of achieving success in organizational change strategies, as well as adopt modern and effective mechanisms represented by E-governance to reduce the gap between them and citizens and exploit this in bringing about successful organizational changes to advance the administrative organizational reality. The research sample consisted of 80 people, from managers who occupy different organizational levels in the Anbar Governorate Diwan.



The questionnaire was used as a tool to collect information in addition to personal interviews. The dimensions of E-governance were represented by e-participation, e-transparency, e-accountability, and e-auditing. The dimensions of organizational change strategies were represented by the education and communication strategy, the strategy of participation in change, the strategy of dialogue and negotiation, the strategy of deception and camouflage, and the strategy of support and facilitation. The researchers in the study (El-Deen & Atua, 2018) show that the study included 80 managers who occupy different organizational levels in the Anbar Governorate Diwan.

The questionnaire was used as a tool to collect information, in addition to personal interviews. The dimensions of E-governance were represented by e-participation, e-transparency, e-accountability, and e-auditing. The dimensions of organizational change strategies were represented by the education and communication strategy, the strategy of participation in change, the strategy of dialogue and negotiation, the strategy of deception and camouflage, and the strategy of support and facilitation (El-Deen & Atua, 2018). That he used a sample of managers, and if he had used samples from lower administrative levels, there might have been a change in the results. This is because the results that appeared for all dimensions of E-governance have a high level of impact on organizational change. The results of the study by Musa & Laughlin (2023) also revealed that E-governance applications in higher education institutions contribute significantly to enhancing teaching tasks by creating educational platforms and providing immediate feedback on students' tasks. However, it was found that the application of E-governance in the selected universities was low. It was also found that the integration of advanced technology was low due to the many challenges facing faculty members. The paper's structures were developed using measurement scales approved from previous studies. Both qualitative and quantitative research methods were conducted, and data were collected using a self-administered questionnaire from random samples taken from the student and staff populations of three different Sudanese universities located in the Khartoum municipality. The researchers believe that the study (Musa & Laughlin, 2023) is consistent with the study (Abdel-Rahman, 2021) and that E-governance has a major role in educational institutions. The researchers found that the success of E-governance requires good university practices, improved infrastructure, and adequate budget allocation for higher education. Thus, barriers to E-governance are technological or institutional and depend on their resources, policies, or traditions. While the study (Saeed & Dham, 2019) aimed to verify the relationship and impact of E-governance as an independent variable in achieving innovative performance as a dependent variable, these variables were studied in the Passport Affairs Directorate, and the researchers adopted the descriptive analytical approach. The sample included 122 individuals out of a total of 194 individuals distributed across several administrative levels (officers, affiliates, and administrative employees). The questionnaire, which included 49 items, was adopted as the main tool for collecting data and information, in addition to personal interviews and field observations, as a tool to assist in collecting them. The most prominent conclusions that demonstrated the validity of the hypotheses were embodied in the Passport Affairs Directorate's interest in its innovative performance due to its interest in E-governance, especially through its possession of capabilities and human resources, and its support with tools for monitoring and evaluation, commitment to standards and applications, management of its financial resources, and possession of the technology infrastructure. The researchers believe that the study (Saeed & Dham, 2019) used dimensions of E-governance that were more logical for explaining innovative performance. Upon reviewing the previous studies used in this study, the researchers found that these dimensions are also appropriate for measuring cybersecurity, as all the governance dimensions in this study, if present in a given organization, its performance and security will be good.

A study by AL-Sarraf & Al-Taie (2022) stated that governance mechanisms primarily protect and ensure the rights of shareholders and other stakeholders associated with the company's business through provisions for oversight and control over the performance of the company's management. Accordingly, the effects of governance mechanisms typically affect the company's value, as reflected in stock prices or financial performance, as reflected in the company's financial reports. The study identified the types of governance mechanisms, which are classified as internal and external governance mechanisms. Internal governance mechanisms refer to the activities and procedures implemented by the company internally to define the relationships between shareholders, the board of directors, executive directors, and other stakeholders.

These mechanisms include the board of directors, audit committees, and ownership concentration mechanisms. External governance mechanisms include external auditing, which is defined as a set of procedures aimed at closely examining the internal control systems and financial operations recorded in the books based on documents to ensure their integrity and compliance with accounting and auditing rules, so that the budget reflects the correct financial position. Researchers from the study (AL-Sarraf & Al-Taie, 2022) see that governance has become a reality and an important task in the private sector, meaning that its work is not limited to government institutions only, but rather in all sectors. This study agreed with the study (Ahmed & Ibrahim, 2020), except that the latter added executive management compensation to the internal governance mechanisms and divided external governance into two types: the market for monitoring economic units and legislation and laws.

Research on E-governance reveals a number of striking similarities, all of which focused on how organizational factors, such as organizational culture, management excellence, institutional performance, and change management, relate to E-governance. The majority of research adopted a descriptive analytical methodology, where questionnaires were used as the main tool for data collection. However, the sample size and types of institutions studied varied. While some studies (Abdelrahman, 2024); (Heikal, 2022); and (Musa & Laughlin, 2023) focused on universities, other studies (El-Deen & Atua, 2018); (Aouri & Osama, 2022); and (Al-Jabria & Al-Habsiyya, 2024) focused on government agencies and local governments. The results mostly agreed that E-governance has a positive impact on improving performance and institutional interaction, especially in the presence of a strong infrastructure and qualified human resources. The methodologies used ranged from purely quantitative studies to others that included quantitative and qualitative approaches, such as (Musa & Laughlin, 2023), and the methods ranged from survey, descriptive, analytical, and correlational approaches. While some studies focused on mediating factors such as leadership, as in the study by Abdelrahman (2024), other studies did not. Despite the varying extent of E-governance adoption across the various research phases, the general pattern supports its positive contribution to increasing institutional effectiveness. Table 1 shows comparisons between Arabic studies. Numerous studies have demonstrated how E-governance significantly affects institutional quality and performance. For example, E-governance significantly enhances institutional quality in institutions, as shown by Abdulrahman (2021). In a similar vein, Heikal (2022) highlighted that, especially in light of Egypt's Vision 2030, E-governance is essential to attaining organizational excellence in Egyptian higher education. Al-Jabri and Al-Habsi (2024) also affirmed the substantial correlation between improving organizational effectiveness and E-governance techniques. These results are consistent with the present study's goal of analyzing the ways in which E-governance might be used to enhance organizational effectiveness in public organizations. In addition to performance, scholars have investigated how leadership and organizational culture function as mediators in the connection between institutional results and E-governance. According to Abdulrahman (2024), academic leadership serves as a mediator, enhancing the impact of E-governance on university crisis management. Similarly, Rasool et al., (2024) emphasized how crucial organizational culture is to the effective execution of E-governance projects.

According to this research, culture and leadership are key determinants of digital governance efficiency rather than incidental aspects. This is especially pertinent to the current study, which aims to investigate comparable processes in the setting of Iraq. Notwithstanding the advantages, a number of studies have identified obstacles to the successful use of E-governance. Musa and Laughlin (2023), for instance, noted a number of institutional and infrastructure obstacles that are preventing E-governance from being widely adopted in Sudanese higher education. Similarly, Awry and Osama (2022) examined the technological and organizational hurdles facing E-governance in Egyptian institutions. The practical problems that frequently impede the full implementation of digital governance aims are highlighted by these findings, underscoring the significance of the current study in tackling comparable issues in Iraq.

The function of E-governance in facilitating organizational transformation has been studied by several scholars. In field research in the Diwan of Anbar Governorate, Atiya and Salahuddin (2018) discovered that E-governance improves efficiency and transparency, which helps reform initiatives succeed. The current study, which explores how digital governance might act as a catalyst for strategic change and transformation in governmental institutions, is closely tied to this viewpoint.

**Table 1:** Comparison of Arabic Studies

The study	The sector	Methodology	Variables studied	Main results
(Abdelrahman, 2024)	Jordanian Universities	Descriptive-Analytical	Governance, Academic Leadership	Direct and indirect effect
(Abdel-Rahman, 2021)	Jordanian University	Social Survey	Governance, Institutional Excellence	Positive correlation
(Rasul et al., 2024)	Sports Colleges - Erbil	Descriptive + Survey	Governance, Organizational Culture	High level
(Haikal, 2022)	Benha University	Descriptive	Governance, Institutional Excellence	Medium
(Al-Jabria & Al-Habsiyya, 2024)	Government Schools - Amman	Descriptive Correlational	Governance, Organizational Effectiveness	Positive relationship
(Aouri & Osama, 2022)	Municipality - Algeria	Descriptive-Analytical	Governance, Local Performance	Direct effect
(El-Deen & Atua, 2018)	Governorate Office - Iraq	Descriptive + Interviews	Governance, Organizational Change	High effect
(Musa & Laughlin, 2023)	Sudanese Universities	Qualitative + Quantitative	Governance, Higher Education	Low application
(Saeed & Dham, 2019)	Directorate of Passport Affairs (Iraq)	Descriptive-Analytical	E-governance, Performance	High impact
(AL-Sarraf & Al-Taie, 2022)	The Iraqi Private Sector (Corporates)	Theoretical and Analytical Analysis	Governance Mechanisms, Financial Performance	Governance includes the private sector and is not limited to the government.

**Source:** Prepared by the researchers based on the sources mentioned therein.



## 2.2. The second group of foreign studies examined E-governance in public institutions:

The study by Enwelu & Nnaji, (2023) found that the use of E-governance improves access to government information services provided by the Civil Service Commission in Anambra State, Awka. Any organization that does not integrate E-governance into its operations will face new challenges. Therefore, the study recommends that the government create opportunities for public sector employees in Nigeria to own computers and be familiar with ICT, making this mandatory to upgrade the skills and capabilities of civil servants and to make computer literacy a mandatory criterion for employment in the public service. This study used a descriptive survey design, requiring participants to answer questions through questionnaires and interviews. The study used a sample of 101 civil service employees in that state. The researchers, through the study (Enwelu & Nnaji, 2023), see that there is a recurring issue of providing better services to Nigerian civil servants, which most Nigerian governments have attempted to address with little success, and that the solutions that have been developed are limited. Researchers found that a country that does not use e-transactions is vulnerable to corruption and lack of trust from citizens because it lacks the application of E-governance, the most important elements of which are accountability, transparency, justice, and electronic auditing. Meanwhile, a study by Muthuselvi & Ramganes, (2017) found that the extent of E-governance use in government colleges is low due to insufficient infrastructure. Therefore, there is an urgent need to revitalize government colleges by providing sufficient financial resources for their development and adopting some plans, policies, and strategies to adapt to E-governance to ensure good governance. This study also reveals that most demographic factors do not have a significant impact on information management in higher education institutions. The modest efforts made by the study can serve as a basis for educational planners to deploy technology-based management in higher education institutions in the future to achieve transparency and satisfaction in governance. The survey design was adapted to a sample of 110 administrative employees at different levels from 11 colleges of arts and sciences affiliated with Bharathidasan University. The questionnaire was used as a tool for collecting information and represented by three dimensions: general management, staff management, and student management. The researchers found that the study (Muthuselvi & Ramganes, 2017) agreed with the study (Abdelrahman, 2024) in the study community but differed in the placement of another variable that may affect governance, which is the preparation of a training program for policymakers and the employment of an IT specialist. The study by (Grigalashvili, 2022) presented an approach that e-government and E-governance represent two different but closely related and coexisting concepts. Some scholars claim that e-government is only a subset, albeit a major one, of E-governance. E-governance is a broader concept that includes the use of ICT by government and civil society to enhance citizen participation in the governance of political institutions. The study concluded that the tools of interaction between Government to Government (G2G) and from Government to Citizen (G2C) are e-government, and the interaction from Government to Businesses (G2B) is E-governance, e-government, and e-cooperation. The interaction between Government and Civil Society Organizations (G2SC) and from Citizen to Citizen (C2C) is E-governance. Researchers from (Grigalashvili, 2022) study concluded that there is no agreement on the definitions of government and E-governance, but we can conclude that the difference between them is that E-governance is a broader term that includes a set of relationships and networks in government related to the use and application of ICT, with greater attention paid to government services such as e-taxation, e-education, or e-health. E-governance is a concept that defines the impact of technology on governance practices and the relationship between the government, the public, non-governmental organizations, and private sector entities. E-governance covers the full range of government steps in development and management, ensuring the successful implementation of e-government services provided to the public. For example, the use of the Internet by politicians and political parties to elicit the views of their constituents in an effective manner, or to disseminate the views of civil society organizations that conflict with the ruling powers.

The purpose of Salam's, (2013) study is to evaluate the efficiency and impact of e-service centers in Bangladesh and to validate E-governance for good governance. Good governance is assessed through accountability, transparency, responsiveness, rule of law, effectiveness, and participation. Given the E-governance initiative, access to information and access to e-government services, the extent of access to citizens' satisfaction, and the effectiveness of good governance have shown a high level of progress. Both qualitative and quantitative research methods were conducted, and data were collected using a self-administered questionnaire from random samples taken from the community of service providers and a set of questions from expert interviews. The total sample size in the research was 64. E-governance aims to enable interaction between Government and Citizens (G2C) and establish an effective relationship between Government and Business institutions (G2B). The research addresses information systems and claims that E-governance is the path that ICT provides to achieve good governance. The researchers noted that the study (Salam, 2013) agrees with the study Grigalashvili, (2022) in terms of interaction between the government and other parties, and that transparency, participation, regulation, accountability, administrative efficiency, quality of public services, and democratic participation are the basic principles of both E-governance and good governance. It was found that the study sample is small, which may affect the generalization of the results to the rest of the societies. The results of the study by (Nwoba et al., 2024) revealed that E-governance significantly improves the timing of political advisory roles and enhances the efficiency of policy implementation in Ebonyi State. Despite these improvements, some areas still lack fully operational E-governance. The study is based on the Cybernetic Theory, which was initially proposed by the American researcher Schein Edgar (1985) and later developed by Hatch Mather and Cunliffe Ann (2006). The study includes a population of 1,797 people from selected ministries. The sample size of 327 was determined using Taro Yameni's formula. Data were collected through questionnaires using a descriptive survey design. The researchers believe that through the study (Nwoba et al., 2024), the best way to develop a country in developing countries is through E-governance in order to reduce corruption and transfer paper transactions to electronic ones. Therefore, there is citizen participation and evaluation of these services, resulting in their improvement. The study by (Williams, 2023) concluded that service provision is weak due to low investment in IT infrastructure. Users complain of difficulty accessing services provided by institutions. Some services cannot be implemented due to the lack of web services on the e-government platform. Some IT technicians from IT departments need more knowledge in the field of IT to find solutions to current problems in institutions. This study targeted three higher education institutions in Benguela, a province of Angola. The questionnaires and interviews conducted in the three educational institutions helped collect data from staff and students in different departments. The independent variable is the impact of E-governance in higher education institutions, and the dependent variable is the quality of education. The sample comes from a higher education institution located in Benguela Province only because this is the province that applies E-governance. The researchers concluded that the results of the study (Williams, 2023) are consistent with the definitions of E-governance, which state that it is the use of information technology, according to the definition of the study (Enwelu & Nnaji, 2023).

This is what I have shown: that service provision is weak due to low investment in IT infrastructure. The researchers believe that the results cannot be generalized to other sectors because the study was conducted in a province that applies E-governance, and there is also a difference in the governance of higher education institutions from one country to another, and there are different models of E-governance for different countries. The hypothesis on which the study by (Korir et al., 2019) was based was that there is no self-assessment platform for information security officers in county governments in Kenya to assess and review their information security practices.

The proposed assessment tool is an organization-wide assessment platform where key government information security officers individually assess the information security practices of their departments/organizations to determine their level of preparedness and capacity to mitigate evolving information security risks. This study was primarily conducted in Uasin Gishu County Government. The target population for the research included County Executive Council members, ICT staff, senior county information security officers, and information systems users and administrators within county governments. This study used a structured questionnaire as the primary data collection tool. A total of five respondents were sampled, comprising members of the Nakuru County Government staff who met the selection criteria for this survey. The researchers concluded that the study (Korir et al., 2019) is consistent with the study (Williams, 2023) regarding the lack of investment and development of IT infrastructure, which is essentially a requirement for E-governance, and the lack of a service evaluation platform. The results of this study cannot be generalized to other sectors, as the sample size was small and included five respondents consisting of Nakuru County Government staff members. Meanwhile, the study by Thakur et al., (2020) explored the different dimensions of E-governance and their interrelationships. Different dimensions were found to affect E-governance based on previous research. The identified dimensions are policy reforms, institutions, leadership, infrastructure, technology, e-service quality, ease of use, and ease of operations. The dimensions of performance measures were also identified, namely efficiency, effectiveness, transparency, convenience, and cost-effectiveness. Ease of use and ease of operation were found to play a mediating role in the relationship between the dimensions and performance measures. The proposed relationship is based on a literature review and has not been tested through quantitative data and tools. Further research can be conducted on the variables mentioned in the conceptual framework with the help of quantitative data to validate the relationship. The researchers believe that while reviewing the literature, to their knowledge, they did not observe such dimensions of E-governance. The study (Thakur et al., 2020) may be due to the lack of testing through quantitative data and tools. The study by Öktem et al., (2014) revealed that the factors influencing the use of E-governance applications are primarily related to internet usage variables rather than students' socioeconomic status. Internet security, internet usage level, internet accessibility, and internet usage trends are independent variables that have significant impacts on solving the problem of improving the use of ICT in governance processes. Governance can be explained in terms of its main components: participation, transparency, accountability, information and service provision, communication, and interaction in governance processes. The methodology of this study consists of data collected through a survey of 328 undergraduate students from Hacettepe University between 2011 and 2012. The sample was drawn from six faculties at this university.

Researchers note that the study (Öktem et al., 2014) provided dimensions of E-governance present in most studies, such as the studies (Abdel-Rahman, 2021) and (El-Deen & Atua, 2018), which are participation, transparency, accountability, provision of information and services, communication, and interaction in governance processes. The use of ICT is important to achieve governance-related goals by increasing citizen participation online and building interactive relationships between governments and citizens. The study by Shahi, (2024) also shed light on how E-governance works in Godawari Municipality by creating three independent variables: customer readiness, E-governance readiness, and demographic characteristics, and a dependent variable: service provision, with a sample size of 52. The study results confirm the existence of a relationship between the independent and dependent variables. The most logical conclusion is that customers who are more prepared and know how to use information and communication technology efficiently discover that services are provided efficiently. These data support the hypothesis that customer awareness improves. From providing good services, if the customer is not prepared, the chances of providing effective service decrease.

The effectiveness of service provision is positively related to age. Research indicates that young people see service provision as more effective than older people. Researchers concluded through a study by Shahi, (2024) that the weak use of technology leads to weak practice of E-governance and the formation of feedback from the citizen to the government to develop its services. The study also showed that people who have knowledge of using information and communication technology discover the extent of service provision because they have the ability to communicate, speak, and form reactions to the services provided. Our statement is supported by the fact that young people see service provision as more effective than older people because they are keeping up with development. The results of a study by Javed, (2023) also showed that there is a relationship between E-governance challenges and capabilities. Among these challenges that hinder E-governance are resistance to change, the legal and regulatory framework, and capacity building. Another challenge is the lack of skilled human resources in the government. Moreover, cybersecurity is a major concern in E-governance initiatives. Finally, political instability, corruption, and bureaucratic obstacles have also hindered the progress of E-governance in Pakistan. Data were collected from 173 students from UMT using a questionnaire. The data was then analyzed using a program called the Statistical Package for the Social Sciences (SPSS). Researchers criticize in a study (Javed, 2023) that these challenges may be specific to a particular country, such as Pakistan, and may vary based on circumstance, time, and place. However, the study addressed an important challenge in the view of researchers, which is the challenge of cybersecurity. Since e-government systems rely heavily on the use of information and communication technology, there is a risk of cyberattacks that could compromise the integrity and confidentiality of government data. Meanwhile, a study (WAWERU, 2022) demonstrated that the adoption of E-governance technology has a significant positive impact on the employability of graduates due to the availability of electronic infrastructure and data at affordable prices. However, the lack of technologically sound political leadership, motivation, and self-efficacy hinders the innovative adoption of E-governance. The study used a descriptive research design. The target population for the study was 536 participants, and the sample size was 114 respondents consisting of graduates and seniors. The independent variable was E-governance, with dimensions of knowledge. E-governance, governance technology, facilitating conditions for E-governance, government measures to promote E-governance, and a dependent variable, which is the employment of graduates. The researchers in the study (WAWERU, 2022) concluded that the dimensions used differ from the dimensions used in the study (El-Deen & Atua, 2018) and (Abdel-Rahman, 2021). The study stated that the lack of political leadership from a technological perspective hinders the adoption of E-governance, but in the view of the researchers, there are many challenges that hinder E-governance, such as resistance to change, the legal framework, or competent human resources. While the study by Kzar, (2022) attempted to identify the impact of E-governance on human resources management, the results of the correlation analysis showed that there is a positive and statistically significant correlation between training and the adoption of E-governance (communication). In addition, there is a positive and statistically significant correlation between training and the adoption of e-government (service provision). The research problem was summarized in shortening time, reducing the error rate, and limiting administrative corruption. This study used the descriptive approach, and the study chose the University of Babylon as a sample for the study, as the number of respondents amounted to about 200 respondents, and to collect and analyze data, the study prepared a questionnaire that included questions about the independent variable of E-governance and questions about the dependent variable of human resources management. Through reviewing the literature that was used in the study (Enwelu & Nnaji, 2023), it was recommended to study E-governance as an independent variable and human resources management as a dependent variable, and this is what this study (Kzar, 2022) proved: that there are other variables that affect E-governance, including human resources.

Some studies, such as those by Williams, (2023) and Öktem et al., (2014), focus on academic and institutional aspects. The first study was conducted in universities and studied the quality of education, while the second studied the use of electronic devices in universities and its effects on internet security. On the other hand, other studies, such as (Kzar, 2022) and (Enwelu & Nnaji, 2023), focused on assessing the relationship between E-governance and direct administrative factors such as accountability, transparency, and human resource management. While Enwelu & Nnaji, (2023) measured the impact of governance on governmental committees and highlighted the difficulties associated with the lack of human skills, (Kzar, 2022) analysis revealed substantial links, particularly in the areas of communication and service delivery. Regarding the methodology, the research followed different approaches. most of the studies followed the descriptive approach, which indicates their reliance on questionnaires as the main tool (Muthuselvi & Ramganesh, 2017), (Shahi, 2024) and (Williams, 2023). Through questionnaires and interviews, studies such as the study of Salam, (2013) combined quantitative and qualitative methodologies to better understand the experiences of beneficiaries in government service centers. As a direction towards an accurate assessment of the relationship between E-governance and resistance to change in government environments, the study of Javed, (2023) also relied on quantitative statistical analysis. There is also a noticeable difference in sample size, although some studies used medium samples (Shahi, 2024); (Salam, 2013) or very small samples (Korir et al., 2019). Studies such as (Öktem et al., 2014); (Nwoba et al., 2024); and (Kzar, 2022) relied on relatively large samples, which improves the reliability of statistical results.

The importance of E-governance as a supportive element for institutional development, whether through enhancing administrative efficiency, improving services, promoting transparency, or improving the quality of education, is evident in all studies, despite their diverse contexts and methodologies. However, the lack of methodological consistency is evident in the differences in tools, approaches, and areas of application. Future researchers may be able to benefit from this by preparing more integrated studies that use reliable measurement tools and integrate quantitative and qualitative aspects. Table 2 shows comparisons between foreign studies. Now, the literature is arranged according to theme categories that accurately represent the main objective of this investigation, such as E-Government and Public Service Delivery: Studies in this area (e.g., Salam, 2013; Waweru, 2022; Enwelu & Nnaji, 2023) show how E-governance improves citizen participation, accountability, transparency, and service delivery in government agencies. In order to achieve successful governance results, these studies highlight the significance of infrastructure, ICT literacy, and personnel preparation. E-Government in Higher Education and Institutional Performance: Research on the effects of E-governance on universities shows gains in academic quality, administrative effectiveness, and institutional efficacy (Abdelrahman, 2024; Abdel-Rahman, 2021; Musa & Laughlin, 2023; Williams, 2023). This subject looks at how resource allocation, technology uptake, and leadership affect the effectiveness of E-governance programs in higher education settings. Implementing E-Government: Obstacles and Facilitators This theme area focuses on elements such as organizational preparedness, cybersecurity, human resource capability, regulatory frameworks, and resistance to change that impact the adoption and efficacy of E-governance (Javed, 2023; Muthuselvi & Ramganesh, 2017; Kzar, 2022). The review finds important facilitators and obstacles that influence the results of E-governance applications by examining these variables. Conceptual Frameworks and Theoretical Perspectives: Studies (Grigalashvili, 2022), (Thakur et al., 2020), and (Öktem et al., 2014) offer models that explain how the government, citizens, and businesses interact, offering theoretical insights into the differences between e-government and E-governance. These frameworks help the study achieve its goal of investigating the ways in which institutional variables, technology infrastructure, and governance practices interact to affect performance results.



**Table 2:** Comparison of foreign studies

The study	The sector and domain	Methodology	Tool	Dimensions/Results
(Enwelu & Nnaji, 2023)	Government Committee	Descriptive	Questionnaire	Transparency and Accountability
(Muthuselvi & Ramganes, 2017)	Universities	Descriptive	Questionnaire	Public Administration
(Grigalashvili, 2022)	Theoretical	Analytical	Literature	G2G, G2C, G2B, G2SC
(Salam, 2013)	Service Centers	Mixed	Interviews + Questionnaire	Citizen satisfaction
(Nwoba et al., 2024)	Ministries	Descriptive	Questionnaire	Political efficiency
(Williams, 2023)	Universities	Descriptive	Questionnaire	Education quality
(Korir et al., 2019)	Local Government	Descriptive	Questionnaire	Information Security
(Thakur et al., 2020)	Theoretical	Analytical	Literature	Intermediate Dimensions
(Öktem et al., 2014)	University	Descriptive	Questionnaire	Internet and Security
(Shahi, 2024)	Municipality	Descriptive	Questionnaire	User Awareness
(Javed, 2023)	Government	Quantitative	Questionnaire	Resistance to Change
(WAWERU, 2022)	Graduates	Descriptive	Questionnaire	Graduate employment
(Kzar, 2022)	University of Babylon - Iraq	Descriptive and analytical	Questionnaire	A positive correlation between training and the adoption of E-governance

**Source:** Prepared by the researchers based on the sources mentioned therein.

### 3. Research Methodology:

This study relied on a systematic review to answer the research question. This technique gathers all available research using precisely defined methodological approaches (Ahn & Kang, 2018: 105). To reduce bias and produce more reliable data for drawing conclusions and making decisions, the systematic review uses precise, organized, and predefined procedures that require high precision (Higgins & Green, 2008: 21). In addition to identifying gaps, shortcomings, and trends in the study, this technique can help conduct future research on the topic it was used for (Munn et al., 2018: 2). Reliable academic sources, scientific journals, and publications from (2013-2024) databases (Google Scholar) directly related to governance were used. E-governance was also analyzed in different contexts, and the variables affecting the success or failure of related variables were identified.

### 3.1. Study Selection Strategy:

This study followed the PRISMA (appendix to the Preferred Reporting Items for Systematic Reviews), which provides a predefined roadmap for the research, identification, and selection of studies included in the review. This ensures the writing of a high-quality, transparent, valid, and reliable systematic review (Page et al., 2021: 2–3). The study selection strategy included a set of steps to obtain studies relevant to the study objectives:

**3.1.1.** Selecting the database (Google Scholar) as a source for relevant studies. The database was chosen for the following reasons:

- The abundance of studies and scientific papers published in prestigious international journals.
- Accessibility of open-access studies.
- Features that limit the scope of the search through multiple selection options.
- The ability to download studies in PDF format.

**3.1.2.** The keywords used in the search for studies from the database were defined as follows: ("E-governance") AND ("public institutions")

**3.1.3** Narrowing the search to include open-access studies published in academic journals between 2013 and 2024.

**3.1.4** Applying inclusion and exclusion criteria. Studies were selected that met the following criteria:

- Focus on the study: E-governance.
- Field of study: Administrative only.
- Language of study: English and Arabic.

**3.1.5** An initial set of studies was compiled and carefully vetted to ensure that each selected study was directly related to E-governance in administration only. To ensure maximum relevance to the topic under study, this is required excluding any research addressing E-governance in fields other than administration and institutions. Each selected study was carefully scrutinized using the following procedures:

- Simple research description: Providing a brief and understandable summary of each study's objectives, methodology, and main conclusions.
- Research analysis: A critical evaluation of the study, highlighting its main findings and their alignment with the research objectives.
- Discrepancies between studies: Examine the differences between studies and others, focusing on the findings, scope, or context of E-governance implementation. The final number of studies selected after applying the PRISMA criteria was 23, as shown in the diagram. In order to ensure the quality of the included studies, they were evaluated according to the criteria of considering the study design, sample size, clarity of data, reliability of analyses, clarity of purpose, and accuracy of the measurement tool. These criteria were used to support the credibility of the selection process and ensure the inclusion of the most relevant and reliable studies. Figure 2 shows the PRISMA scheme for selecting studies.

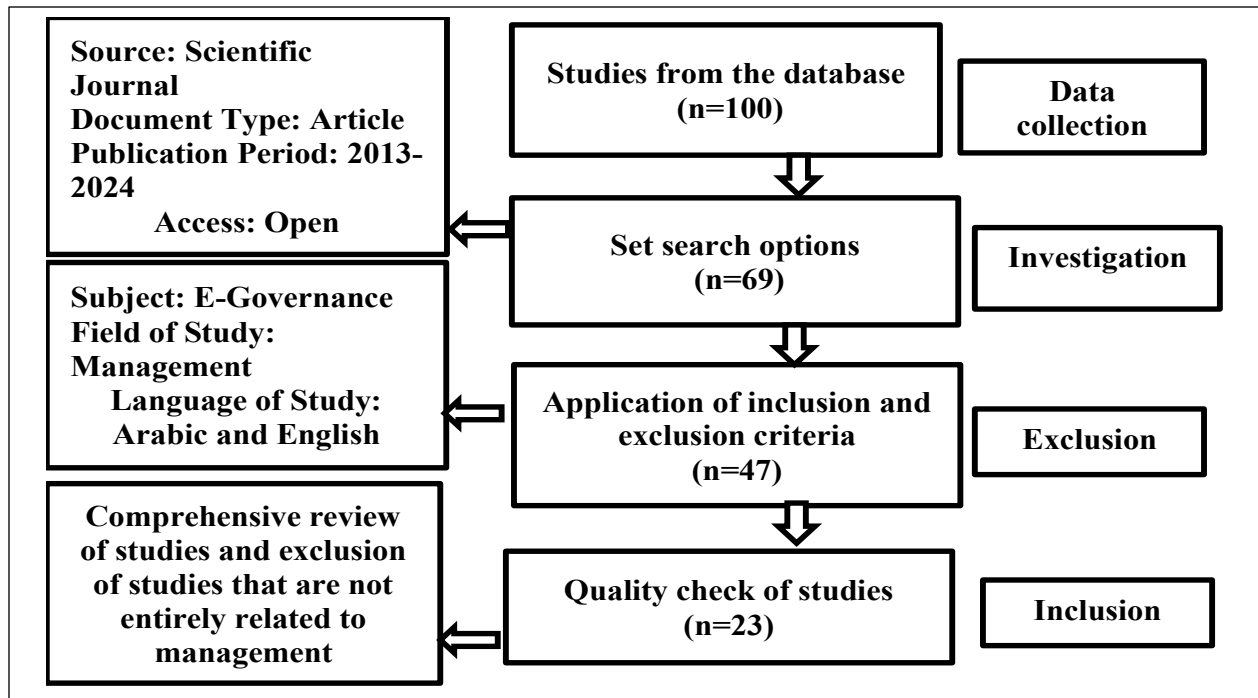


Figure 2: PRISMA diagram.

Source: Prepared by the researchers.

#### 4. Results:

4.1. Through a review of the literature, the researchers find that most of the studies used addressed the education sector in studying E-governance. This is due to the fact that E-governance requires ICT to achieve its objectives, and the education sector is one of the sectors most abreast of developments and technology.

4.2. The use of E-governance improves access to government information services and creates opportunities for public and private sector employees to own computers and become familiar with ICT, which increases communication with the government. The researchers found that most researchers and practitioners interpret E-governance as being linked to governments. According to our definition and framework, this perception is highly misleading, as all organizations, public or private, large or small, for-profit or not-for-profit, utilize information technology and the Internet to achieve effective and efficient governance of their various functions at multiple administrative levels.

4.3. The extent of E-governance use in some government institutions is low due to inadequate infrastructure. Therefore, there is an urgent need to revitalize government institutions by providing sufficient financial resources to develop E-governance and adopting plans, policies, and strategies to adapt to E-governance to ensure good governance.

4.4. E-governance can achieve institutional excellence, and the lack of political leadership from a technological perspective hinders the adoption of E-governance.

4.5. E-governance significantly improves the timeliness of political advisory roles and enhances the efficiency of policy implementation.

4.6. The study (Öktem et al., 2014) presented dimensions of E-governance present in most studies, such as the study (Abdel-Rahman, 2021) and (El-Deen & Atua, 2018), represented by participation, transparency, accountability, information and service provision, communication, and interaction in governance processes.

4.7. The weak use of technology consequently leads to weak E-governance practices and weak feedback from citizens to the government to improve its services. The study also showed that people who are knowledgeable about using ICT discover the extent of service provision because they have the ability to communicate, speak, and form reactions to the services provided.

4.8. There are challenges that may hinder the implementation of governance. These challenges may be specific to a particular country, and they may vary based on circumstances, time, and place, such as the challenge of cybersecurity. Given that e-government systems rely heavily on the use of ICT, there is a risk of cyberattacks that could jeopardize the integrity and confidentiality of government data.

4.9. Through a review of the literature, the researchers find that most studies have used questionnaires as a data collection tool, indicating that it is the best method for measuring E-governance in the view of researchers.

4.10. Classifying the success and failure factors of E-governance is not merely a summary of what has been mentioned in previous studies but rather provides a comparative framework that helps researchers and decision-makers understand the complete picture. For example, infrastructure appears as an indispensable prerequisite, while institutional culture and senior leadership support emerge as critical factors for sustainable adoption. In contrast, the absence of comprehensive legislative frameworks or weak cybersecurity poses challenges common to most studies. Table 3 illustrates the success factors and obstacles.

**Table 3:** The success factors and obstacles

No.	Key Success Factors	Obstacles
Infrastructure	- Providing integrated information systems - Continuous investments in networks and systems	- Weak internet networks - Limited hardware and technical resources
Human Resources	- Regular employee training - The presence of specialized technical personnel	- Lack of digital skills - Resistance to change among employees
Policies and Legislation	- Legislation supporting E-governance - Clear data protection policies	- Absence of comprehensive legal frameworks - Slow administrative procedures
Culture and Organization	- Senior leadership support - A corporate culture that encourages innovation and technology	- Poor awareness of the importance of E-governance - Bureaucracy that hinders development
Cybersecurity	- Implementing advanced security protocols - Emergency and attack response plans	- Risks of hacking - Lack of trust among users

**Source:** Prepared by the researchers.

## 5. Discussion of Results:

The review's findings suggest that E-governance is a tactical instrument for improving institutional performance through the attainment of openness, accountability, and participation— aspects that align with the theoretical underpinnings of good governance. The fact that the education sector provides a fertile setting for ICT applications is reflected in the concentration of research on this area. This is consistent with human capital theory, which highlights how institutional efficiency is enhanced by investments in knowledge and technology infrastructure. Given that E-governance may be utilized by public, private, for-profit, and non-profit enterprises at various administrative levels, the literature also shows that the idea that it is just applicable to "government" is restricted.

This is in line with current developments in networked corporate management theory, which highlights that technology is now a comprehensive framework for managing connections and resources rather than just a governmental choice. On the other hand, it has been demonstrated that inadequate financial resources, political leadership, and infrastructure pose significant challenges to the successful deployment of E-governance. The resource-based approach, which contends that financial and technological skills are necessary for attaining a competitive advantage and institutional sustainability, is in line with these difficulties. Security issues (like cyberattacks) further demonstrate that the success of E-governance is dependent on the presence of practical methods for safeguarding data and boosting public confidence in addition to the availability of technology. Thus, the findings demonstrated that community engagement and interaction are essential to the success of E-governance since citizen input informs policy and enhances services, which is in line with the interactive participation theory, which centers the governance process around the ultimate beneficiary.

#### **6. Conclusion:**

This study conclusively demonstrates that E-governance is an essential element in increasing the effectiveness, accountability, and transparency of public institutions, and that it improves the quality of services provided and facilitates public communication. Despite the significant progress made in adopting E-governance principles, many obstacles remain that prevent its widespread dissemination and effectiveness, particularly those related to weak infrastructure, lack of technological knowledge, and the need to ensure data security and cybersecurity. The need for more thorough comparison studies across various sectors to elucidate the variations in E-governance adoption is one of the most important research gaps and future directions. It is also crucial to create more varied and trustworthy assessment instruments rather than depending too heavily on surveys. It is also necessary to broaden the study of security and cyber hazards as a significant future problem, and research should be done on how political leadership and organizational culture affect the efficacy of E-governance in Arabic contexts.

#### **7. Recommendations:**

Governmental institutions should be:

- 7.1. deploying integrated strategies to build financial and human resources to enable E-governance adoption,
- 7.2. encouraging residents and workers to be digitally literate in order to guarantee the best possible use of technology,
- 7.3. creating adaptable laws and rules that handle privacy and information security while promoting the e-transformation,
- 7.4. emphasizing digital infrastructure as a necessary condition for E-governance initiatives to succeed, and
- 7.5. Including stakeholders and citizens in the creation and application of policies to promote effective involvement and trust.

#### **Authors Declaration:**

- We Hereby Confirm That All the Figures and Tables in The Manuscript Are Mine and Ours. Besides, The Figures and Images, which are Not Mine, Have Been Permitted Republication and Attached to The Manuscript.



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