
CRITICAL FACTORS FOR E-GOVERNMENT TOWARDS SUSTAINABLE DEVELOPMENT

Ban Qasim Al nidawy11

University Of Information Technology & Communications, Baghdad, Iraq

<https://orcid.org/0000-0002-4036-0460>

ban_alnidawy@uoitc.edu.iq

Balqees Naji Ajel 2

University Of Information Technology & Communications, Baghdad, Iraq

beeso@uoitc.edu.iq

Mohammed Shakour Ahmed 3

University Of Information Technology & Communications, Baghdad, Iraq

mohammed.ahmed@uoitc.edu.iq

Abstract

The current research aims to verify the impact of the critical factors of e-government towards sustainable development by reviewing some practices and a number of related studies. The study discovered that five factors affect the promotion of sustainable development, namely (legalizing electronic transactions, relying on digital technology, effective organization of government institutions, cooperation between digital technologies and resource management, and citizen satisfaction with e-government). In order to achieve the objective of the research, a major measurement tool was initiated by layout a reconnaissance and allotting it to a sample of workers in the General Directorate of Passports in Baghdad - Al-Rusafa to arrive at the required results through the use of the statistical software (SPSS.V.25), in order to determine the relationship between the study variables, the electronic government with its critical factors. and sustainable development in its dimensions (environmental, social, and economic). The study's findings proved the existence of an active role for the critical factors of e-government in sustainable development, and this indicates that these factors have a fundamental role in promoting sustainable development.

Keywords: E-government, sustainable development, e-government factors to promote sustainable development.

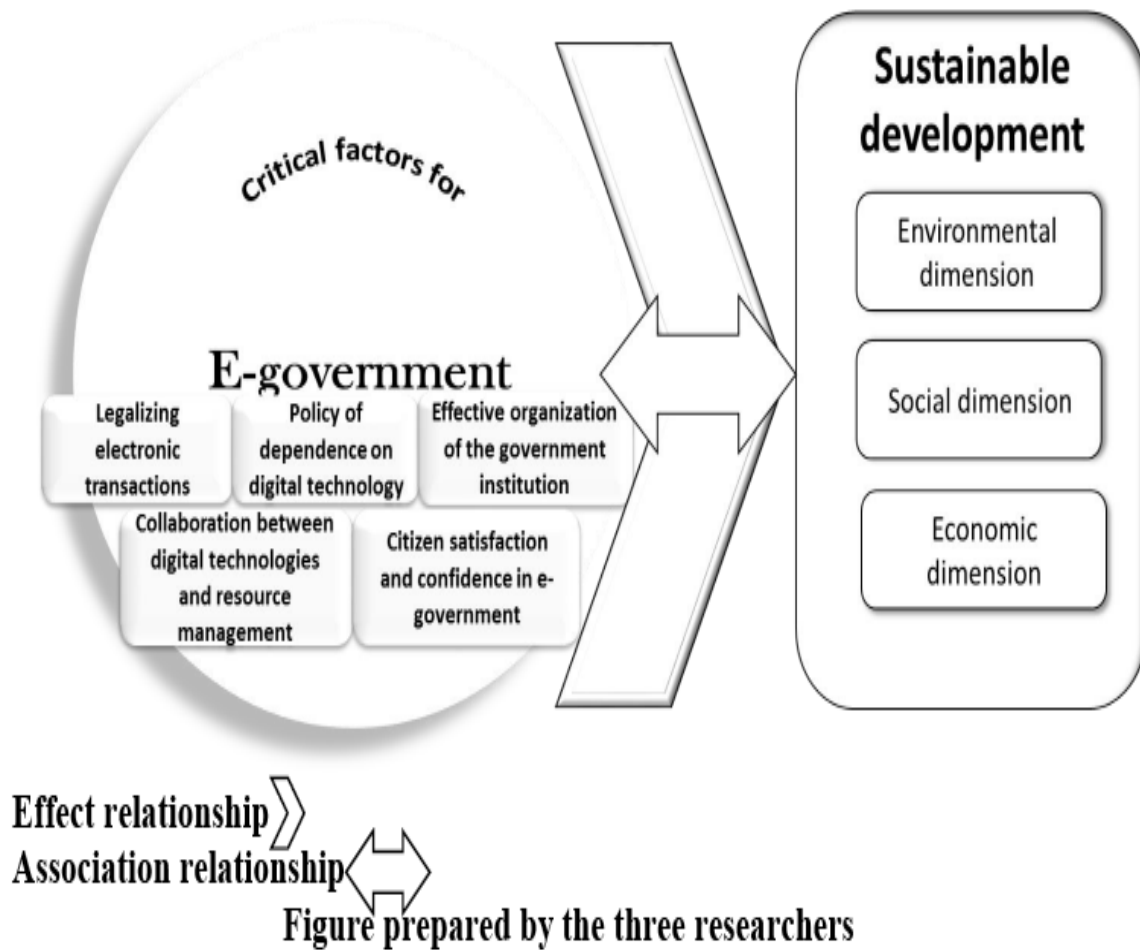


Figure 1. Hypothetical study model Critical factors for e-government towards sustainable development

1. Introduction

The development of administrative processes and the development of their methods and practices in government institutions was accompanied by the introduction of technology for information and communication variable, which had a major role in that, and contributed to the process of adoption of e-government in many government institutions, which in many developed countries reached advanced levels and high rates that contributed to facilitating The affairs of citizens and companies, and reflected on their satisfaction and confidence, and aimed at achieving sustainable development of resources, and reducing labor costs. Therefore, in the modern era, e-government is the basic tool for transforming traditional government service delivery methods to develop more effective, transparent and efficient for citizens and institutions.

Through e-government, good governance services and the ability to meet the needs of citizens can be enhanced, and most importantly, it has the ability to maximize efforts to preserve usable

resources throughout the government institutions to allow for sustainable development of the country.

Government institutions seek to make e-government services available on multiple platforms to increase citizen participation and engagement with the government as part of the mutual push for the growth of sustainable development, which necessitates the government to provide electronic services to meet the needs of citizens, which means that there are many complex major contributing factors that must be taken into account. Consideration when implementing e-government practices to achieve the goals of sustainable development .

Therefore, the current research aimed to verify these factors and their impact on achieving sustainable development by reviewing some practices and a number of related studies, and reaching conclusions on the subject , the primary measuring instrument was used in designing a distribution of a questionnaire it to a sample of employees General Passports Directorate in Baghdad - Al-Rusafa to achieve the desired outcome through the use of the statistical software (SPSS.V.25) in order to determine the relationship between the study's two variables, E-government and the sustainable development.

The research problem about the extent of interest of governments in developing countries, especially in the electronic services they provide to their citizens, which does not always meet citizens' expectations and other users, as well as uncertainty about the role of government electronic platforms in promoting sustainable development, and through what will be addressed. In this research, the following problem will be answered: "Was the researched institution able to realize the critical factors for activating the work of its electronic platform as one of the government electronic service interfaces to promote sustainable development?".

The aim of the research is to identify the critical factors of e-government towards sustainable development, to clarify the importance of the electronic platform for government institutions, and to work to gain users' satisfaction and loyalty to government electronic services.

2. Literature Review

2.1 E-government for sustainable development

Government in different countries represents a variety of functions, structures, and objectives that operate according to a specific mechanism within a dynamic system of conflicting and integrated variables, and e-government applications are implemented within the complexities of such applications, which requires broad and multiple considerations. E-government is seen as a government that uses information technology (IT) to administrative functions should be redesigned and enhance public service delivery, and it is specifically described as a government that uses information technology and the Internet as tools to improve the implementation of government work, and works to improve the relationship with its citizens, companies and government agencies, by focusing on efficiency Administrative tasks and results at the time of electronic submission, and the role of e-government pays more attention to more civic participation to support values, sustainable development, and transparency of governmental procedures on the basis of better results for policies and high-quality services

It also described e-government as a transformation that has the best solutions in solving bureaucratic problems through utilizing telecommunications and information technology to achieve a more responsible performance of the government institution. This is accompanied by thoughtful planning and proper implementation to provide effective electronic services, driven

by the desires of citizens, innovations in information and communication technology, and the ability and competence of governments to lessen the challenges of social and environmental implications, and economic expansion towards sustainable development

The e-government platform was established for the first time in the United States of America in 1993, and its main objective was to spread the various opportunities of modern information and communication technology in order to the interaction process between the government and the general public, as it enjoys easy access to the required information, and sponsors transparency and improves the quality of service, and the participation of citizens in the use of services.

The advanced use of telecommunications and information technology through e-government contributed to increasing the availability of information and services to citizens and companies, as well as reducing costs and reducing bureaucracy.

The importance of digital services was recognized and confidence in government authorities was strengthened to improve general economic performance, and this required that the government adapt to technological progress in order to ensure safe and effective electronic government services, which led to raising the level of performance and enhancing general institutional convergence at the national level.

In the meantime, interest in sustainability has grown, and proponents of sustainable development have made bolder assertions. There have been numerous initiatives to explicitly include sustainability as a goal while developing systems.

Sustainability is seen as playing a crucial role in providing solutions that enable people to live better while consuming fewer environmental resources, by providing alternative solutions with environmental value and socially and economically attractive that succeed in acknowledging customers with new groups of products and services (more sustainable).

Sustainability is defined by the United Nations Commission on Economic Development as "development that satisfies current demands without jeopardizing future generations' capacity to meet their own needs".

E-government, according to the UN's definition in 2014, is the use and application of information technology in public administration to streamline and integrate work flows and processes, effectively manage data and information, improve the delivery of public services, and expand communication channels to engage and empower citizens.

The United Nations report for the year 2016 on "e-government to advocate for sustainable development" considered that e-government is an effective and powerful tool for achieving sustainable development. The researchers noted in the United Nations report on e-government that building an atmosphere of trust in governmental organizations and the public is necessary for the development of e-government services, and not only in technological solutions. Because of its significance in encouraging good leadership and the relevant contribution that e-government can make to accomplish the goals of sustainable development, within the context of the United Nations 2030 Agenda for Sustainable Development, the United Nations has been promoting and monitoring the growth of e-government in the countries of the world.

While the World Bank stated in 2006 that "the primary goal of e-government is to fundamentally change government relations with individuals, companies and other government

entities, and it represents a transformative relationship between the government and its citizens by introducing new initiatives for e-government regularly" .

Therefore, governments have been interested in using information and communication technology and integrating environmental, social and economic standards, and both processes tend to stimulate sustainable development, which was evident in Switzerland and the United Kingdom among the developed countries. Whereas the promotion of e-government for sustainable development is represented in enabling governments to improve their internal operations' effectiveness, infrastructure, and provision of services at the lowest possible environmental cost while safeguarding the environment for future generations, as well as increasing public participation in decision-making processes and government policies, Sustainable e-government services have the potential to generate revenue (economic sustainability) , adapt to technical developments (technological sustainability), safeguard the environment (environmental sustainability) ,and ensure that all stakeholders have equitable access to and exchange of knowledge (social sustainability) Whereas the promotion of e-government for sustainable development is represented in enabling governments to improve their internal operations' effectiveness, infrastructure, and provision of services at the lowest possible environmental cost while safeguarding the environment for future generations, as well as increasing public participation in decision-making processes and government policies, therefore sustainable e-government services can generate financial value (economic sustainability), adapt to technical developments (technological sustainability), safeguard the environment (environmental sustainability), and ensure that all stakeholders have equitable access to and exchange of information (social sustainability).

While rich nations compete to offer more sophisticated services, underdeveloped nations are still unable to take use of e-fundamental government's advantages. The public sector has various obstacles that impede it from achieving the anticipated benefits and from successfully adopting e-government. The usage of more sophisticated and highly secure services seems to be somewhat counterproductive for developing countries, and it is estimated that their average use of e-government platforms is less than half that of industrialised countries. For example, the Jordanian e-government did not fully achieve its goals, and United Nations surveys showed The rank of the Jordanian e-government declined in the last decade despite its launch in 1999, due to the lack of security and privacy, lack of trust, lack of resources, the digital divide, mismanagement, lack of awareness, legal barriers, and lack of infrastructure.

As for the system of providing e-government services in the Kingdom of Saudi Arabia, it faces a great danger to the personal security of external stakeholders with insufficient capabilities among government employees. There is a question about the technical capabilities among the different stakeholders in the Kingdom of Saudi Arabia due to the reliance on external parties to obtain consulting and technical expertise. There is also a great deal of uncertainty about the requirements for business process system re-engineering in e-government, and the implementation of e-government projects in the Kingdom of Saudi Arabia needs significant reassessment and review.

2.2 *E-Government Critical Factors towards Sustainable Development.*

The concept of e-government has evolved towards more complexity, specialization and context. To this end, a model has been designed that simulates the development of e-government from four stages that include digitization (technology in government), transformation (e-government), participation (e-governance), and context (e-governance that policy-driven). Through these stages of development, the success factors of e-government towards sustainable development were discovered, and they generally revolve around the level of information technology, the economic and technical environment, the political background, the vision towards (integration of informatics and the goals of administrative reform), strategic priorities, stakeholder roles, and accessibility. for clients, governance sharing, protection of privacy, resource distribution (budget, project administration), inter-agency collaboration, accountability, examination and review

The researchers have determined the success of the role of e-government in promoting sustainable development, through the most important factors that can be identified as follows:

- (1) **Legalizing electronic transactions:** Governments must enact legislation and regulations for preparing data electronically and determining the validity of electronic transaction procedures. This means the need for a comprehensive legal framework that helps address potential conflicts between stakeholders, in addition to the existence of policies and legislation that prepare a sustainable strategic direction for the long-term use of information and communication technology that enables guidance, direction, and development of information and communication programs and their continuity of use. The model of continuity of information systems, the intention of use and the continuing desire of citizens after their use of information systems is affected by citizens' awareness of the benefit of information systems. Hence, the sustainability of the electronic service is determined by the capacity to continuously provide and superior services, in addition to preserving client satisfaction. That is, sustainable development that rely on contemporary information technologies can't be accomplished unless the new computerized devices are sustainable and free from negative effects on the environment
- (2) **Policy of dependence on digital technology;** Confidence in e-government initiatives through the implementation of the "digitalization first" policy. Governments must train their employees appropriately to use computers and fundamental computer programs in government institutions additional to installing other devices such as storage devices, scanners, and printers, and Internet connection devices. The computerization of government departments represents the first step in the first phase of the sustainable and secure implementation of e-government. Governments start indexing the paper-based data as soon as the computerization of their departments is complete, and they create a digital backup copy of the data in their offices. Creating an awareness campaign, improving the knowledge and experience of government workers, and increasing user awareness of e-government projects are further ways to enhance awareness. The efficiency of providing public services via the Internet to citizens in a timely and economical manner improves citizens' confidence in the effectiveness of the e-government service. One of the key elements that determines how well a technology is accepted is trust, which is frequently expressed in theoretical models. One of the main variables that ensures the successful adoption of technologies is trust. In times of uncertainty, unpredictable progress, and growing technological dependence, trust is especially important. And trust is a crucial component in reducing the dangers and uncertainties associated with technology adoption

Without citizen trust, e-government systems become unsustainable, with risks, security, and safety closely linked to sustainability. Many studies have reported that benefiting from the advantages of government services related to information and communication technology is determined by citizens' reluctance to use e-government services via the Internet. The successful adoption of e-government depends on citizens' confidence in these services. In the context of e-government, citizens are more likely to believe that e-government services are helpful e-government services, as well. if they trust the organization that delivers those services. The citizen becomes more conscious that the government-developed and -maintained e-government websites the ability to meet his needs as a result of his trust in the organization that offers e-government services

Effective organization of the government institution, When adopting digital technology, the organization should be restructured, operations re-engineered, and employees should be trained on this technology due to the importance of this for utilization of online services and the effective implementation of e-government initiatives that promote sustainable development, as well as the adoption of an organizational culture that expresses e-government initiatives that are related to How to manage operations and offer services, and this has a significant impact on organizational performance and productive collaboration between stakeholders . Technology models and frameworks must be regularly updated to reflect the most recent technology advancements in order to keep e-government technological projects current and competitive. This is necessary for organisational sustainability and continuity.

It must be emphasized here that sustainability cannot be done without an efficient system, especially in terms of cost and maintenance, and supports development throughout its life cycle. Where the effectiveness of the system is evaluated by measuring the flexibility, accessibility, dependability, and speed of reaction, and ease of use of the e-government system, and Through a number of empirical investigations, the relationship between these factors and trust in e-government is investigated

(3) **Collaboration between digital technologies and resource management:** This includes the allocation of funds, infrastructure, and digital knowledge. To support policies and initiatives for digital government, adequate financial resources and incentives are required. Infrastructure must adopt information and communication technology as a base for it , a prerequisite for adopting new. While digital knowledge refers to a person's capacity to work effectively in a digital world. It comprises the capacity to consume and comprehend media, generate data and images using digital techniques, and assess and apply information learned from the digital world. Several crucial elements for this have been recognised by the European Commission (2018): the process of finding and gaining access to information, digital material, communication, and collaboration through digital technologies; To preserve individual privacy

(4) **Citizen satisfaction and confidence in e-government;** This is done by enhancing the quality of electronic services in the public sector and how to make improvements to the service to satisfy citizens, and it is important here to measure the results and compare them with the requirements of customers and citizens instead of just looking at the functional scope of the institution. The quality of service in this area refers to the citizens' evaluation of the credibility of the services provided by the e-government websites and the extent of their response,

guarantee and sympathy with them. Service quality can be evaluated based on its accuracy, completeness, timeliness, dependability, and relevancy

As a result, the best strategy with regard to service quality can be chosen to address e-government projects and achieve sustainability. As a result, e-government services will be able to assist governments in attaining their objectives and offer operational ease., demonstrate return on investment, accept and use services provided by citizens on a larger scale, and lower application cost and process efficiency. Furthermore, among the essential traits of sustainable e-government are the services' lifespan and flexibility in adapting to necessary technological changes

2.3 Determinants of e-government services in promoting sustainable development

Although the application of information and communication technology in the government sector provides great benefits to citizens, institutions, the government, and employees, the matter is not without some obstacles and challenges in adapting the adoption of e-government services, such as the disappearance of infrastructure, the leakage of security and privacy information, and the limits of citizen skills. Due to the level of security and threats perceived by users, citizens in many countries still do not trust the services offered by e-government, which is damaging to the strategy of accelerating the adoption of information technology

Other challenges have also emerged, which he mentioned, as follows:

- (1) Usability difficulties have been regularly brought up by citizens, such as difficulty locating important services and information, problems utilising the website's electronic services, problems with language comprehension, etc.
- (2) It is challenging for governments to come up with adequate metrics for gauging the effectiveness and efficiency of expenditures on their services.
- (3) In order to determine the effectiveness of e-government, it is required to investigate acceptable techniques for evaluating the quality of public services. There are considerable gaps in both Availability of public services and the methodology for determining service quality.
- (4) The growth of e-government at the state level has been significantly slowed down by the absence of institutional techniques for tracking and evaluating e-government initiatives. In a systematic review of some case studies to identify the determinants of e-government in underdeveloped nations, a comprehensive view of five determinants was presented, as follows:
 - a. Strategic determinants (unclear vision, lack of implementation guidelines, high ambitions for e-government achievements, lack of common aims and purposes for e-government, limited governance, difficulties with finance and centralization by government institutions).
 - b. IT infrastructure constraints (lack of system integration and design compatibility, various security models, inflexibility of legacy systems, incompatibilities with technical and data standards, privacy and security issues such as online theft and fraud, lack of poor bandwidth, insufficient security for government software and hardware, and reliable networks, unauthorised access from both inside and outside to the information system, standards and open source software are lacking).
 - c. Factors that influence policy and legislation (lack of comprehensive Lack of security regulations, policies, and privacy laws, as well as legal and policy foundations, data ownership disputes, a lack of governmental coordination and commitment, and digital classification).

d. Organizational and cultural factors (such as a lack of managerial expertise and pertinent internal information technology, the difficulty of government system redesign and procedures, ignorance of security issues, and government reform is moving too slowly, the institution isn't ready, there isn't enough cooperation and coordination between departments, and there isn't enough strong leadership to overcome resistance to change.

e. Determinants of operating costs: (the cost of installing, operating and maintaining the e-government system, the cost of coaching, information technology professionals and consultants, lack of monetary resources available to the public sector.

The study (Alotaibi, 2020) identified the determinants of the efficiency of e-government transactions to provide the best efficient approach (the mature model) for e-government implementation through distinct stages and selection of necessary tasks to achieve them, describing them as determinants of adoption and determinants of implementation to adopt a mature and sustainable model of e-government that guarantees citizen satisfaction, participation and efficiency in government activities, as illustrated in the following figure:

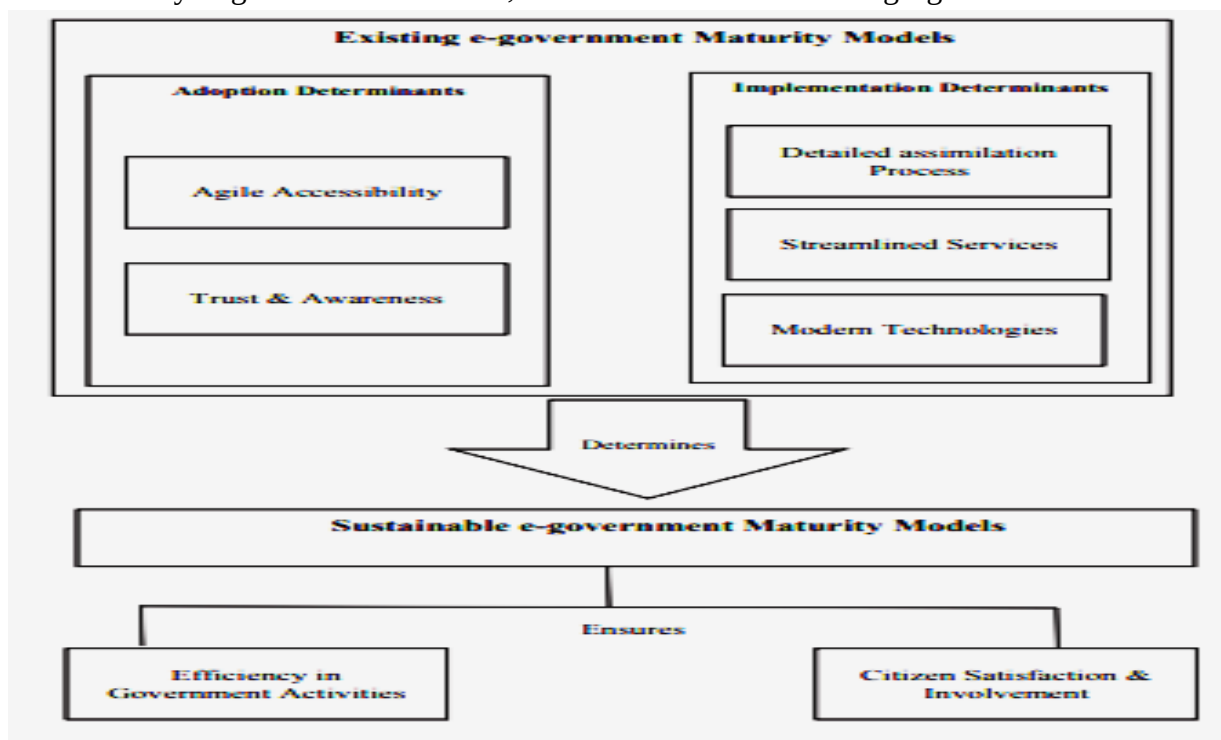


Figure 1. Determinants of the sustainable e-government efficiency model

Source : Alotaibi, Youseef A, (2020) , A New Secured E-Government Efficiency Model for Sustainable Services Provision , Journal of Information Security & Cybercrimes Research ,V. 3 , no. 1, p 80.

With the proposal of other e-government maturity models; Any of the models should not only measure the success of e-government based on the sophistication of the technology used by the government, but also should take into account whether stakeholders use the services provided or not.

2.4 Indicators of evaluating the effectiveness of e-government

Digital transformation in government administration has become an important indicator for countries to determine the performance of e-government development, as the e-government

indicator is often used to evaluate the performance of e-government management and its effectiveness in the countries that use it.

The United Nations Evaluating "the readiness and capacity of national institutions" has become de facto standardized using the Government Development Index (EGDI). to use information and communication technology to provide public services." The index has been published on a comparative" basis since 2003 and twice annually since 2008, with a maximum of 193 countries. The index serves as a foundation for studies. in line with the evolution of e-government, and also publishes ratings of e-government development.

The EGDI scale consists of three different dimensions; Firstly, the Online Services Index (OSI) assesses the extent to which the country's e-government websites are developing, including its national website and related portals and websites from departments such as economic, social, and educational services, health, and environment, Secondly, the Telecommunications Infrastructure Index (TII), which is determined by five factors: the number of Internet customers, fixed telephone lines, smart phone subscribers, fixed Internet subscriptions, and fixed broadband Internet services, and thirdly, the Human Capital Index (HCI) Through the levels of digital literacy for adults, enrolled in education.

EGDI data are collected in the field in relation to the Telecommunications Infrastructure Index (TII) and Human Capital Index (HCI) data, but for the third dimension, the Online Services Index (OSI), spatial data (population density, population locations), and Internet infrastructure are used

The United Nations later created the e-Participation Index (EPI) as a complementary indicator to the United Nations e-Government Survey that expands the scope of the survey by focusing on the use of online resources to help governments provide information to individuals through three components: (i) Electronic information: empowerment Citizen participation through provision of Availability of information on demand and public disclosure, (ii) E-consultation: Getting people to weigh in on governmental policies and services and to provide feedback, and (iii) E-decision-making: involves empowering citizens by co-creating some standard policy and service options.. Thus, EGDI and its main components are not only directed to measure the maturity of the e-government services of the country, but also the ability of Member States to provide online services in terms of communication infrastructure and the skills required by citizens to deal with services provided online.

The Index of Global Digital Competitiveness, which the Worldwide Institute for Administrative Development (IMD) released for the first time in 2017, measures the capacity and openness of to adopt and research digital technology in a few economies, just as the Global Cybersecurity Index gauges nation-state commitment to cyberspace security on a global scale. It also covers the recognized environmental performance index by the American "Yale" University, which focuses on initiatives to raise the standard of living through sustainable development using contemporary information and communication technology, or the index of sustainable development goals by the United Nations, which was first presented by the International Telecommunication Union in 2015.

The use of e-government platforms has evolved in recent years, and the need for evaluation indicators has become urgent. Academic studies have developed evaluation techniques, diversified their methods, and showed the presence of some common threads in them.

Evaluating the scope and usefulness of online services and assessing the platform, quality and readiness is one of the most direct aspects in measuring e-government performance. Various e-government evaluation models were presented to it, including the (EGEEF) model for assessing the system's efficiency and performance as a system for measuring how well e-government services work, through a sample of citizens. (Quality of the system, the information, and the services, citizen use, citizen satisfaction, citizen confidence, perceived e-government service level quality, perceived effectiveness).

The following figure shows the (EGEEF) model for assessing the effectiveness and performance of the e-government services effectiveness system.

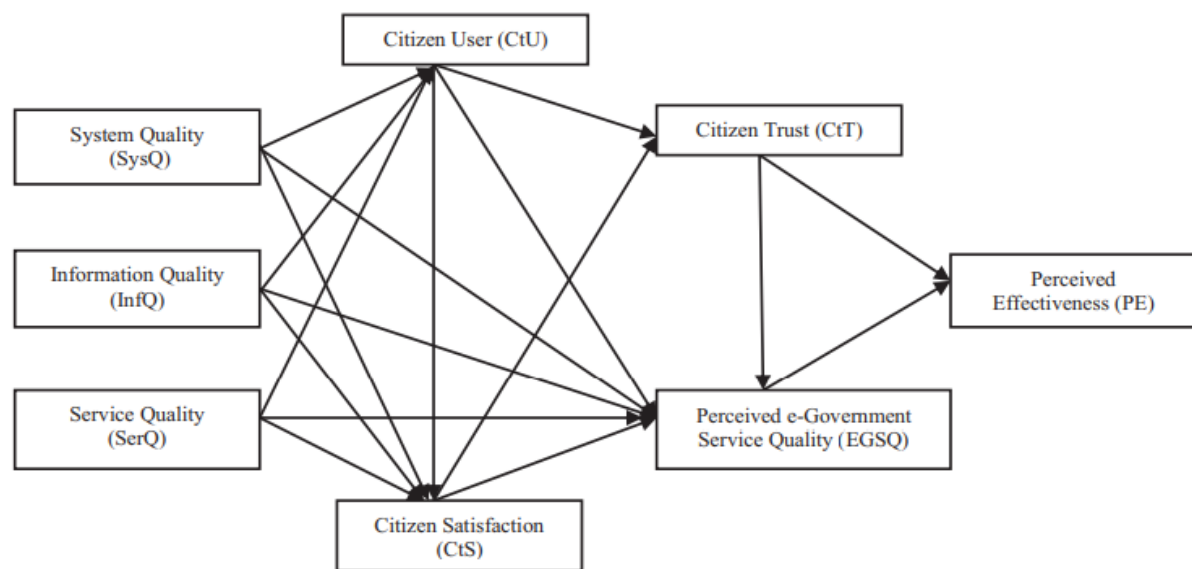


Figure 2. the (EGEEF) model for assessing the efficiency and performance of the system for measuring the efficacy of e-government services

Source: Zaidi , Syed Faizan Hussain (2017) , E-Government Services Effectiveness Evaluation Framework (E-GEEF) A Case Study of Indian E-tax Service , Doctor of Philosophy Thesis , School of Computing and Digital Media London Metropolitan University London, United Kingdom ,p22 .

3. Research Methodology:

3.1 Research Hypotheses:

Given the significance of the research at hand and in order to meet its goals, the following hypotheses were developed:

- (1) The first hypothesis: There is a significant correlation between e-government and its critical factors with sustainable development.
- (2) The second hypothesis: The critical factors of e-government have a positive and significant impact on sustainable development.

3.2 Study population and sample :

The research community consisted of all workers in the General Passports Directorate in Baghdad. A questionnaire was distributed to (33) individuals working in the electronic field in the Rusafa Passports Office. The research sample was considered a deliberate sample, and the

field study was conducted between (15/1 /2023 until 20/1/2023) to deal with the data obtained through statistical analysis according to the (SPSS v25) program.

4. Discussing the Results

First: Test the search measurement tool

Through the use of a questionnaire as a research tool created especially for this purpose and distributed to a sample of people in various units and departments, the primary data was gathered to address the analytical aspects of the research topic. This data was later loaded and analysed using the SPSS programme. In order to arrive at valuable indications and indicators that support the study's topic, it is necessary to compute the ratios and apply the relevant statistical tests. This questionnaire is divided into two axes and contains (40) paragraphs that discuss the questionnaire's fields:

First axis: It is a set of questions centered around the (Critical factors for e-government) includes paragraphs (Legalizing electronic transactions , Policy of dependence on digital technology , Effective organization of the government institution, Collaboration between digital technologies and resource management, Citizen satisfaction and confidence in e-government).

Second axis: a set of questions about (Sustainable development) includes paragraphs (Environmental dimension ,Social dimension, Economic dimension).

The Likert Scale was used to determine the level of acceptance of the research sample on each of the research paragraphs and was translated into quantitative data with relative weights that could be studied using statistical tools and means. The Likert Scale has five levels of levels.

To ensure the accuracy and validity of the data received through the use of the questionnaire with regard to validity and reliability, the following tests had to be carried out:

(1) The results of the internal consistency test:

The correlation coefficient (Cronbach Alpha) in Table (1), which confirms the internal consistency of the scale and thus its stability required in the event of repeated tests, is used to test the stability or internal consistency of the results. It has a value of 0.70, which confirms the internal consistency of the scale and thus its stability required in the event of repeated tests.

Table 1. results of the internal consistency test of the scale

Variables and dimensions	Cronbach's alpha dimensional coefficient	honesty
Critical factors for e-government	0.778	0.882
Legalizing electronic transactions	0.854	0.926
Policy of dependence on digital technology	0.836	0.912

Effective organization of the government institution	0.790	0.888
Collaboration between digital technologies and resource management	0.748	0.865
Citizen satisfaction and confidence in e-government	0.846	0.902
Sustainable development	0.754	0.868
Environmental dimension	0.747	0.866
Social dimension	0.786	0.884
Economic dimension	0.762	0.872
For all items of the questionnaire		0.870

(2) The reliability of the questionnaire:

The split-half approach, which can be summed up by calculating the correlation coefficient between the results of the individual questions and the results of the questionnaire's even questions, is used to assess reliability. The Spearman-Brown equation adjusts the correlation coefficient. The correlation coefficient of the questionnaire, which indicates that it has good stability with its various scales and can be used at various times and for the same individuals and produces the same results, was (0.72) when this method was applied, which is sufficient for the research that depends on the questionnaire as a tool for it.

Second: Description and analysis of the study variables

Critical factors for e-government

Table 2 lists the arithmetic mean, standard deviation, coefficient of variation, general order of importance for the dimensions, and the direction of the response to the research sample's viewpoints. As shown in Table 2, the coefficient of variation was used to calculate the dispersion of the paragraphs based on the arithmetic mean and standard deviation in order to rank the importance of the dimensions of the independent variable, Critical factors for e-government. It is obvious that the dimension (Effective organisation of the government institution) came in first place in terms of the dispersion of responses about Critical factors for e-government. In contrast to the other dimensions, that was the topic on which the majority of sample replies agreed.

Table 2. Ranking of importance according to the coefficient of variation for Critical factors for e-government

	Critical factors for e-government	Arithmetic mean	Standard deviation	Coefficient of variation,	order of dimensions importance
1	Legalizing electronic transactions	3.539	1.118	31.585	5
2	Policy of dependence on digital technology	3.313	0.986	29.761	4

3	Effective organization of the government institution	3.133	0.463	14.778	1
4	Collaboration between digital technologies and resource management	3.377	0.922	27.302	2
5	Citizen satisfaction and confidence in e-government	3.267	0.811	28.311	3

Sustainable development variant

In Table 3, it is evident that the dimension (Social dimension) came in first place in terms of the dispersion of answers about the dimensions of Sustainable development, as the majority of the answers were positive. The coefficient of variation was used to order the importance of the dimensions of the dependent variable Sustainable development. In comparison to the other dimensions, the sample agrees on that.

Table 3. Ranking of importance according to the coefficient of variation for the dimensions of the Sustainable development

	Dimensions of Sustainable development	Arithmetic mean	Standard deviation	Coefficient of variation,	order of dimensions importance
1	Environmental dimension	3.310	1.044	31.540	1
2	Social dimension	3.489	0.441	12.639	2
3	Economic dimension	3.554	0.577	16,235	3

Third: Analyzing the correlation between the research variables

Testing the first hypothesis (There is a significant correlation between e-government and its critical factors with sustainable development) .

The correlation coefficient between e-government and its critical factors with sustainable development was (0.211**) at the significance level (0.004) which is less than the significance level (0.05), as the calculated (t) value reached (2.945), which is greater than the tabular (t) value of (1.984), This means accepting the hypothesis, which indicates that the Critical factors for e-government have an active and clear role in developing sustainable development .

Fourth: Testing and analyzing the effect between the study variables

Regression analysis is a statistical tool that creates a statistical model to estimate the relationship between two variables (independent variable) and (dependent variable), so that it produces a statistical equation that shows the causal or interrelationship between the variables. To test the impact hypothesis, it will be relied on the regression analysis equation to estimate the parameters of the model. And this model is a simple liner regression when the relationship in the statistical model is between a dependent variable and one independent variable.

The influence relationship identified by the research is tested for the purpose of determining the possibility of judging it with acceptance or rejection. As the second effect hypothesis (The critical factors of e-government have a positive and significant impact on sustainable development), it will be investigated according to the simple linear regression equation as follows:

$$Y = \alpha + \beta_1 X_1$$

(α) Constant represents the amount of the constant, β_1 the Marginal propensity, and this relationship means that the entrepreneurial trend (Y) is a function of the real value of the critical factors of e-government. As for the estimates of these values and their statistical indicators, they were calculated at the level of the research sample amounting to (156) in the surveyed Enterprise, and it will be Analyze the levels of influence between the variables as follows:

The second hypothesis test

To test the hypothesis that states the following (The critical factors of e-government have a positive and significant impact on sustainable development), the analysis will be done according to a simple linear regression model, as follows:

$$Y = \alpha + \beta (X)$$

$$Y = 2.472 + 0.266 (X)$$

(A) The value of (F) calculated for the critical factors of e-government in the sustainable development was (8.673). And it is greater than the tabular value (F) of (3.89) at the level of significance (0.05), and accordingly we accept the hypothesis which states (The critical factors of e-government have a positive and significant impact on sustainable development) at the level of significance (5%), i.e. with a degree of confidence (95%). This indicates that The critical factors of e-government has an essential role in Strengthen the sustainable development.

(B) Through the value of the coefficient of determination (R^2) of (0.044), it is clear that the critical factors of e-government explains (44%) of the variables that occur in the sustainable development trend, while the remaining (56%) is due to other variables that are not included in the research model.

(C) It is clear from the value of the marginal slope coefficient (β) of (0.663) that increasing the critical factors of e-government by one unit will lead to an increase in the sustainable development trend by (66%).

(D) The value of the constant (α) in equation (2.472).

5. Conclusion And Discussion

Governments have paid attention to the use of information and communication technology and its integration with environmental, social and economic standards, and both processes tend to stimulate sustainable development, the vocabulary of which was evident in developed countries.

The current study showed that there are five key factors in E-government that are required for sustainable development growth. It is Legalizing electronic transactions, Policy of dependence on digital technology, Effective organization of the government institution, Collaboration between digital technologies and resource management, Citizen satisfaction and confidence in e-government.

This means the need for a comprehensive legal framework that helps in addressing potential conflicts between stakeholders, in addition to the existence of policies and legislation that prepares for a sustainable strategic direction for the long-term use of information and communication technology that enables guidance, direction, and development of information and communication programs and the continuity of their use, Confidence in e-government initiatives through the implementation of the "digitalization first" policy, Restructuring the organization, re-engineering operations, and training employees on this technology, due to the importance of this for the successful implementation of e-government initiatives and the use of online services. Allocation of funds, infrastructure and digital knowledge. Appropriate incentives and financial resources are needed to support digital government strategies and activities, Enhancing the quality of electronic services in the public sector and how to make improvements to the service to satisfy citizens .

The major goal is to close digital gaps that are impeding the nation's sustainable growth while also ensuring that services are accessible to citizens and stakeholders. In order to ensure sustainability, it is also advised to create structures for public and private partnership.

From a legal standpoint, conflict prevention during the deployment of E-government calls for control and regulatory measures. It is crucial to make reference to particular laws and policies that offer strategic guidelines and direction for the growth of e-government.

Additionally, a legislative framework must take the place of pointless and complicated procedures. Meanwhile, the legal framework should incorporate an accessibility rule and non-disclosure act to protect residents' privacy and maintain information security. The legal framework increases citizens' trust in using online government services. Moreover, The results of the study proved that there is a significant relationship between e-government and sustainable development through the researched institution. This indicates an active role for the critical factors of e-government in sustainable development.

The results also indicated that there is a statistically significant effect relationship for the critical factors of e-government in sustainable development. This indicates that these factors have a fundamental role in promoting sustainable development.

The study recommended the need for a comprehensive legal framework for electronic transactions in general, and electronic services in the government sector and the private sector to address the problems that occur between stakeholders, in addition to developing policies and legislation that prepare for a sustainable strategic direction for the long-term use of information and communication technology. The level of awareness must also be raised by preparing an awareness program and developing the skills and experiences of government employees at work and raising users' awareness of e-government initiatives, as well as adopting an organizational culture that expresses e-government initiatives related to how to manage operations and offer services, and this has a major role in organizational performance. And effective cooperation between stakeholders, and the infrastructure of government institutions must depend on information and communication technology as a base for adopting new technology, and all of this will inevitably lead to enhancing the quality of electronic services in the public sector through service improvements and access to satisfy citizens, and as a result, it is not possible to achieve sustainability unless The system was not effective and the new computerized systems are sustainable, especially in terms of cost and maintenance, and are free from negative effects

on the environment and support technological development that relies on modern information technology and has the confidence of customers.

References:

1. Othman, Mohamed Hairul & et all (2020), Key Factors for E-Government towards Sustainable Development Goals , International Journal of Advanced Science and Technology Vol. 29, No. 6 , p 2565.
2. Zahid, Hasan & Haji Din , Badariah (2019) , Determinants of Intention to Adopt E-Government Services in Pakistan: An Imperative for Sustainable Development , Resources journal , Vol. 8, No.128, p1.
3. Aljarallah, Sulaiman & Lock , Russell (2020) , An Investigation into Sustainable e-Government in Saudi Arabia , The Electronic Journal of e-Government, Vol. 18, No.1, p1.
4. Alrubaiq, Abdullah & Talal Alharbi (2021) , Developing a Cybersecurity Framework for e-Government Project in the Kingdom of Saudi Arabia , J. Cybersecur& Priv, no. 1, p302.
5. Kim , Churin & Kim, Kyung-ah(2021) , The Institutional Change from E-Government toward Smarter City; Comparative Analysis between Royal Borough of Greenwich, UK, and Seongdong-gu, South Korea , J. Open Innov. Technol. Mark. Complex. Vol. 7, no. 42 ,p3.
6. Karyono , Otong & Agustina, Kania (2019) , Determining the Priority Strategy in the Implementation of E-Government Through Swot Analysis Model , Budapest International Research and Critics Institute-Journal , Vol. 2, No. 2, p67.
7. Mohammed, Fathey & et all (2020) , The Effect of Cloud Computing Adoption on the Sustainability of E-Government Services: A Review , International Journal of Advanced Science and Technology Vol. 29, No. 5 , p2636.
8. Zahid, Hasan & Haji Din , Badariah (2019) , previous source , p1.
9. Didraga, Otniel& Brandas ,Claudiu (2015), Comparative Study on E-Government Indicators between Romania and the European Union , Informatica Economică vol. 19, no. 1, p67.
10. Lytras, Miltiadis D. & Șerban, Andreea Claudia (2020) , E-Government Insights to Smart Cities Research: European Union (EU) Study and the Role of Regulations, IEEE Access, Vol .8 ,p317.
11. Aljarallah, Sulaiman & Lock , Russell (2020) , previous source , p1.
12. Rocchi, Simona (2005), Enhancing Sustainable Innovation by Design, An Approach to the Co-creation of Economic, Social and Environmental Value-Enhancing Sustainable Innovation by Design An Approach to the Co-creation of Economic, Social and Environmental Value. Thesis to obtain the degree of Doctor from the Erasmus University Rotterdam ,p9.
13. Zahid, Hasan & Haji Din , Badariah (2019) , previous source , p1.
14. Lněnička , Martin & Máchová, Renáta (2022) , A theoretical framework to evaluate ICT disparities and digital divides: Challenges and implications for e-government development , Review of Economic Perspectives Journal, Vol. 22, no. 1 , p222.
15. United Nations. United Nations Reports, 2016; United Nations: New York, NY, USA, 2016.

-
16. Ejdyś, Joanna & et al (2019), The role of perceived risk and security level in building trust in e-government solutions, *Information Management*, V.3, N. 14, p222.
 17. Dias, Gonçalo Paiva (2019), The 19th European Conference on Digital Government: Dias, G.P. (2019). Policy matters? An analysis of outliers in the UN e-government index. *Proceedings of the 19th European Conference on Digital Government, ECDG*, p2.
 18. Kommers, Piet & Macedo, Mário (2021), International conferences on ICT, society and human, part of the multi conference on computer science and information systems, Organised by International association for development of the information society JULY 20 - 22, 2021, p23.
 19. Bamfo, Peter Adjei & et al (2019), The role of e-government in sustainable public procurement in developing countries: A systematic literature review, *Resources, Conservation & Recycling*, no. 142, p190.
 20. Mohammed, Fathey & et al (2020), previous source, p2636.
 21. Al-rawahna, Ammar Salamh Mujali & et al (2018), The Barriers of E-Government Success: An Empirical Study from Jordan, *International Journal of Managing Public Sector Information and Communication Technologies*, Vol. 9, No. 2, p2.
 22. Alrubaiq, Abdullah & Talal Alharbi (2021), previous source, p308.
 23. Janowski, T.(2015) Digital government evolution: From transformation to contextualization. *Gov. Information Quarterly journal*, Vol 32, No 3, p223.
 24. Kim, Churin & Kim, Kyung-ah(2021), previous source, p3.
 25. Alotaibi, Youseef A, (2020), A New Secured E-Government Efficiency Model for Sustainable Services Provision, *Journal of Information Security & Cybercrimes Research*, V. 3, no. 1, p83.
 26. Othman, Mohamed Hairul & et al (2020), previous source, p2566.
 27. Li, Wenjuan & Xue, Lan (2021), Analyzing the Critical Factors Influencing Post-Use Trust and Its Impact on Citizens' Continuous-Use Intention of E-Government: Evidence from Chinese Municipalities, *Sustainability journal*, Vol. 13, No. 7698, p5.
 28. Mohammed, Fathey & et al (2020), previous source, p2636.
 29. Aljarallah, Sulaiman & Lock, Russell (2020), previous source, p2.
 30. Othman, Mohamed Hairul & et al (2020), previous source, p2566.
 31. Alotaibi, Youseef A, (2020), previous source, p82.
 32. Zaidi, Syed Faizan Hussain (2017), E-Government Services Effectiveness Evaluation Framework (E-GEEF) A Case Study of Indian E-tax Service, Doctor of Philosophy Thesis, School of Computing and Digital Media London Metropolitan University London, United Kingdom, p3.
 33. Ejdyś, Joanna & et al (2019), previous source, p221.
 34. Aljarallah, Sulaiman & Lock, Russell (2020), previous source, p2.
 35. Zahid, Hasan & Haji Din, Badariah (2019), previous source, p2.
 36. Li, Wenjuan & Xue, Lan (2021), previous source, p5.
 37. Othman, Mohamed Hairul & et al (2020), previous source, p2566.
 38. Alotaibi, Youseef A, (2020), previous source, p80.
 39. Aljarallah, Sulaiman & Lock, Russell (2020), previous source, p3.
 40. Li, Wenjuan & Xue, Lan (2021), previous source, p5.

-
41. Othman, Mohamed Hairul & et all (2020), previous source , p2566.
 42. Ahmadi, Abdul Rahim & et all (2020) , E-government development index (EGDI) estimation and suggestions for improvement: A case study of Khost province, Afghanistan , International Journal of Applied Research ,Vol, 6 , no .3,p453.
 43. Yunrong . Li & Gang. Li ,(2022) , The Impacts of Digital Literacy on Citizen Civic Engagement—Evidence from China ,Digital Government: Research and Practice, Vol. 3, No. 4 , p2.
 44. Othman, Mohamed Hairul & et all (2020), previous source , p2566.
 45. Li , Wenjuan & Xue, Lan (2021) , previous source , p5.
 46. Zaidi , Syed Faizan Hussain (2017) , previous source , p36.
 47. Alotaibi, Youseef A, (2020) , previous source,p879.
 48. Ahmadi , Abdul Rahim & et all (2020) , previous source , p453.
 49. Ejdys ,Joanna & et all (2019) , previous source ,p221.
 50. Zaidi , Syed Faizan Hussain (2017) , previous source , p12.
 51. Al-rawahna , Ammar Salamh Mujali & et all (2018) , previous source , p3.
 52. Heví , Luisa Fernanda Rodriguez & et all (2020) , Citizens' Involvement in E-Government in the European Union: The Rising Importance of the Digital Skills , Sustainability Journal , vol 2 , no 12, p2.
 53. Yıldırım, Seda & Bostancı , Seda H. (2021) , The efficiency of e-government portal management from a citizen perspective: evidences from Turkey , World Journal of Science, Technology and Sustainable Development , v. 18, no .3 ,p2.
 54. Dias, Gonalo Paiva (2019), previous source , p3.
 55. Kommers, Piet & Macedo, Mrio (2021) , Nternational conferences on ict, society and human, part of the multi conference on computer science and information systems , Organised by International association for development of the information society JULY 20 - 22, 2021 , p23.
 56. Ahmadi , Abdul Rahim & et all (2020) , previous source , p455.
 57. Kabbar, E. (2021). A comparative analysis of the e-government development index (egdi). IADIS Press. Retrieved from https://www.ict-conf.org/wp-content/uploads/2021/07/01_202106L003_Kabbar.Pdf ,p23.
 58. Lnnika , Martin & Mchov, Renta (2022) , A theoretical framework to evaluate ICT disparities and digital divides: Challenges and implications for e-government development , Review of Economic Perspectives Journal, Vol. 22, no. 1 ,p26.
 59. Zaidi , Syed Faizan Hussain (2017) , previous source , p3.