Evaluating The Electronic Government Implementation in The Kurdistan Region of Iraq from Citizens' Perspective

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ABSTRACT:

The rapid development of technology affected how people think, interact, and do business and led governments in many countries to change how they interact with their citizens. The development of information and communication technologies increased citizens' need for more transparent governments with less bureaucracy and routines. In addition, citizens need to be the center of the government decisions that affect their lives. Since 2007, the Kurdistan regional government announced strong e-government based on technology, changing traditional governance to e-governance and e-services, reducing bureaucracy, and tackling corruption. Although the e-government in KRI is still at the beginning, this quantitative article aims to assess the advancement of e-government in the Kurdistan regional government by utilizing one of the maturity models, the Layne and Lee model, and determining the e-government process's maturity level. For the first and second levels of evaluation, this research will analyze the citizen's perspectives and opinions through analyzing the data obtained from a questionnaire prepared for this purpose. The evaluation analysis results show that the process is prolonged, and most people are not familiar with the e-services and do not expect more progress in this area shortly.

KEYWORDS: E-government, E-services, Bureaucracy, Transparency, Biometric system, Maturity model.

1. INTRODUCTION

E-government describes applying information and communication technologies in government services to improve efficiency and effectiveness for citizens and businesses(World Bank 2002). ICT ensures efficient and effective administration procedures, advances relations between the government and its citizens by improving service delivery, increasing transparency, reducing the cost and time required for servicing, and reducing the needed workforce(Nations 2018)(Park and Kim 2020).

Although, the advantages of ICT development allow governments to build e-government. However, it is not a simple process; before developing e-government and its services, every government must create a clear strategic plan. They must assess the resources, environment, political concerns, and population's ability to use technologies(World Bank 2002)(Shim and Eom 2008). The government must be ready to make reforms in administration and make the people the center of governance and participate in the decision process as these decisions affect their lives(Long and Song 2021). Yet, e-government is not about doing the daily work by using computers, the Internet, and other technological equipment as in traditional ways(Lee et al. 2022). E-government is the collaboration between government entities and agencies, the private sector, and NGOs, making citizens' lives better and part of the political processes(A. 2016). They reduced the time required by government services, and people no longer will wait in line for a long time. Besides, in developing e-government services, they must consider people with limited information of using technology(Bournaris 2020). However, success is dependent not just on the government but also on the people's implementation and successful participation(Zautashvili 2018).

In the Kurdistan region, under the vision of modernizing the public services using the developed technology, the Kurdistan Regional Government (KRG) established the Information Technology department in March 2007. The IT department's missions consist of; constructing the IT infrastructure in the region, strengthening its capacity through education and training, connecting citizens with the government through strong e-services, pursuing the adoption of IT policy, and ensuring efficiency and transparency for IT investment. In addition, the ninth cabinet's agenda provides eliminating unnecessary bureaucracy using ICT and e-government.

Since 2007, KRG started with many projects for establishing the infrastructure of e-government. Although the government successfully finished some of the projects, others were either suspended or failed. Our aim is to evaluate the implementation of the e-government in the KRI by using one of the maturity models. And, knowing the progress up to now and to follow up on the future steps of the KRG toward strong e-government in the region.

In the following section, the research describes literate; the third section includes the background of the e-government in the region, and the government aims to fight corruption with the e-government., followed by the methodology then the Results. In the end, the paper finalized with the conclusion and future works.

2. LITERATURE REVIEW

Many countries began to use information and communication technology and e-government to improve government services and strengthen ties between the government and public or

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combat and fight corruption. The KRG has also launched several projects to improve government services in the Kurdistan Region, most recently to combat corruption. The following sections will discuss related e-government projects and their progress in the Kurdistan region.

In(M., M., and M. 2016), the research paper investigates the current status of information technology projects in the Kurdistan Regional Government (KRG), distinguishes the purposes of the failure of referenced projects. Last stretch substantial arrangements just as a proposal to limit the danger of the project disappointments later on contrast with other created nations. The consequences of 200 respondents just as a meeting have been proposed for uncompleted. In the interim, there were some suspended projects by the government. The paper shows that the main reasons KRG-IT projects fail are lack of IT experts, good planning, and lack of good infrastructures. The investigation suggests that the public authority should keep away from the political contribution in IT projects and apply excellent project management practices to decrease dissatisfaction. Secondly, in (Shareef Shareef et al. 2010), the authors discussed the primary purpose behind the paper as they analysed two different types of questioners and interviewed some of the KRG directors by recognizing the challenges that the electronic government faces. The results demonstrate that the current government does not offer such types of assistance electronically, and the vast majority of the residents are not happy with the current taxpayer governmental services. Consequently, KRG has consented to an arrangement with Value Water House Cooper UK (PWCUK) to do the essential IT plans for KRG to have the option for carrying out e-government successfully and proficiently. After that, in (SM Shareef 2012) the authors described in detail a successfully implemented e-government stage model that will help the region as used in other countries for example, the United Kingdom. The main idea was adopting the model and used in KRG e- government, but due to some factors such as infrastructures, governmental organizations, national opinion and culture. Therefore, they recommended that a phase model can be carried out by the regional government in developing areas.

Moreover, in (Qader, Hassan, and Saeed 2017), the research paper proposed an ICT framework for KRG. The concept is to connect all KRG ministries via digital channels and create a consolidated government service system. Each unit can publish its services to recipients via the Internet and a central government database. This needs to specify more about that, the execution of this structure will create many expectations that would improve the administration given by the public authority to the resident, and the public authority will elevate to stay up with the advancement of innovation in our present world. Next, in(Hassan et al. 2016), the presented research paper used EGOVSAT model by giving a scale for government to resident electronic drives can be assessed as far as fulfilment inferred by clients. The study was utilized to gather information from the client's dependent on the builds and their things of the EGOVSAT model. Then, at that point, the information is dissected utilizing factual strategies, clients' profile information, quality examination, relationship investigation, and numerous relapse examinations. One of the main points is giving a scale by which government to resident electronic drives can be assessed as far as fulfilment inferred by clients.

Then, in(Ghareb 2016), the presented research paper shows KRG government, when dined the Public e-ID framework should be mulled over the conceivable future e-government, so it is fundamental to set up a 15-year plan foundation data innovation for every single public area. This incorporates security thought of the framework (Casing Work Security, Organization Security, and information-based security). This Public ID framework can be extended to any remaining e-

Framework such as Creator Name, IJECS Volume, Issue, month, year, bank framework, transportation framework, and various reason framework, characterized by the private and public areas needing client ID data. Additionally, the KRG should know about preparing focuses and their worker preparing to offer assistance to the resident in the public authority.

3. BACKGROUND OF THE E-GOVERNMENT IN KRI

3.1 e-government as a tool for tackling corruption:

As a global problem, corruption lacks a universal definition and is described differently by different societies and causes. Corruption is defined linguistically as "illegal, immoral, or dishonest conduct, particularly by those in positions of power."(Alotaibi, Sandhu, and Houghton 2014). According to the World Bank, Corruption is "the use of public office for private advantage." Additionally, it can be characterized as the act of committing bribery, extortion, fraud, power abuse, embezzlement, and money laundering(Al-Jaghoub, Al-Hourani, and Al-Yaseen 2009). Also, corruption affected emerging countries' infrastructure, including the judiciary, education, media, and health systems. Along with civilians, politicians or government officials and those in positions of authority within the government are heavily active(Nam 2018). Additionally, corruption can be adapted for changing situations and conditions and changes in norms, legislation, and even technology(Adam 2020). Mainly, it has resulted in a hazy view of the country's and society's future.

Iraq, in general, including the Kurdistan region recognized as one of the most corrupted countries. According to the Corruption Perception Index (CPI), including 180 countries, this scale ranges from zero to one hundred, with zero indicating highly corrupt behaviour and one hundred indicating spotless behaviour. In the rank of 180 countries, Iraq's rank was 169 with 18 points in 2017(Ahmad 2016), it ranks 168 with 18 points in 2018(Berzinji and Jamal 2018), and it ranks 162 with 20 points in 2019(Abdulla and Sherwani 2017). The data of the CPI shows that there is slog progress by the Iraqi government for reducing corruption. Despite these findings, we cannot know the Scale of Corruption in the Kurdistan Region due to the lack of exact information. The Kurdistan Regional Government provides scant details on corruption, but illegal employees, illegal retirees, and others constitute the region's most egregious corruption concerns.

One of the advantages of Information technology is that it will significantly impact fighting corruption, but it needs first to understand its causes and effects. Any government that wants to fight corruption has to commit to transparency. The governments must underline the different forms of corruption and its causes when the government is encouraging enough to point and put hands on the causes and the effects that caused it. Then fighting it with short-term and long-term strategies will be the next step. Under this vision, all the Kurdistan regional government cabinets announced using technology to reduce unnecessary bureaucracy and tackle corruption (KRG n.d.). The government intends to combat corruption and eliminate needless bureaucracy through ICT and e-government.

Kurdistan regional government started fighting corruption by finding solutions and alternatives, embracing its effects, and squeezing all the parties to be part of the solutions. The first solution is the Biometric system started by the eighth cabinet in early 2016. The first phase of the system was planning and analysing, and then the second phase was implementing the strategies. The implementation phase started in November 2016 and scanned the government beneficiaries' biometric identification. The main reason for implementing the biometric system is that the government wants to have exact data of the salary beneficiaries. Besides, to have statistics of active

employees, pension, social care, and martyrs. Also, the geographical distribution of the public employees, their gender and age, and the number of duplicate salaries are known.

The scanning takes ten fingerprints and two IRIS templates of each person. According to the department of IT (DoIT) (source: Information from email) of the KRG, over one million and two hundred (1,200,000) salary beneficiaries from KRG are registered, and the process is continuing for unregistered beneficiaries. Form the employees been reported, analyses and classification of employment type completed. The system is ready, and if the government-approved, the biometric system is prepared to go to the second phase, which is to decide about the suspect people to be removed from the payroll system.

Even though KRG started many e-projects, the KRG has continued to suffer from a deficient information and communication technology infrastructure. The absence of connectivity between the government's ministries and establishments makes it challenging to monitor their activities. However, the government has attempted to teach staff to be more engaged with e-government and provide Internet access via fiber-optic cables, although this has not reached every part of the region, mainly rural areas.

3.2   The facts about ICT and e-government in the Kurdistan Region:

Since 2007, the government has stepped toward the establishment of e-government. As shown in Table1, many projects have been involved, and budgets for these projects were available. Although there are other projects but because of lack of information about these projects and the information we found from unofficial sources, we preferred to not include them in our work. In the below sections, some of the e-projects by the KRG and their progress have been evaluated.

The first IT project of the KRG was the (iOpenKRG) in 2007 to connect all the ministries through fiber optics that has been suspended after two years for unknown reasons(M., M., and M. 2016)—followed by the electronic ID card for the government employees in 2016. After completing around 40% of the ID cards, the project was suspended(M., M., and M. 2016). Along with the KRG established the IT academy, the academy was established to train the government's employees for information and communication technologies to make the government's employees available for the e-services and be a strong part of the e-governance. This project was also suspended without announcing the reasons for the suspension.

In December 2017, the Ministry of Interior assigned a contract with Sinam Company to create (Asan Services). The Ministry will have new hubs with ICT platforms to deliver e-administration services. The project planned to establish Public Service Centre that will issue personal status certificates like birth, marriage, divorce, and death. The project aimed to cooperate with Asan Khidmat Institution from Azerbaijan, providing technical advice and expertise through E-Governance for Better Service Delivery. This project is not completed, and there is no information about the incompleteness. Besides, many other projects are in progress by the government with the servicing companies that work on these projects, as shown in Table 1.

Although many IT projects in the region are not completed or suspended, many are completed successfully. For instance, as a step toward reform in public administration, the government planned to reform public procurement by issuing consolidated and modern Public Procurement Regulations in February 2016. This step was a roadmap to e-procurement. The Kurdistan regional government signed an agreement with the Korea International Cooperation Agency (KOICA) to start the project (Modernization of Public Procurement System in Kurdistan Region of Iraq) in April 2018. The project consisted of consulting service, developing e-procurement systems, providing IT equipment and training programs for capacity building, and finishing in 2021(Government n.d.).

In 2018 and to provide citizens, companies, visitors, and foreigners with all legal information in the region, the KRG created a new website (khizmat) containing government information and all needed information. The total available governmental services' information is (407) information in all the sectors: issuing driving licenses, investment in the region, education and higher education, and all the needed information. This portal is a static website that citizens and people can only take information from (KRG n.d.).

Ministry of Higher education wants to be part of the e-governments by having two e-services, the Zankoline and Equalization systems. Zankoline is an e-service that enables 12-grade students (undergraduate students) to apply to public universities in the region(S. M. Shareef and Yahia 2018). The Zankoline system allows students to apply to all public universities based on their principal study and average grades. The website was created to simplify applying to universities by lowering time, errors, and asset and material costs such as paper. The Equalization of foreign qualifications: An online application for the Equalization of foreign capabilities for people studying abroad and searching for vacancies in the Kurdistan region(Ministry of Higher Education n.d.). Lately, in June 2021, the Ministry of Higher Education announced a new platform for students who want to change their universities, colleges and departments. Students can now do the transfer process online(Ministry of Higher Education n.d.).

Besides that, the Ministry of Interior also has many steps toward the e-government and providing many e-service systems. They provide organizations, visitors, companies and tourists an online Kurdistan electronic visa(Ministry or Interior n.d.). Also, they created the Kurdistan e-residency system(Ministry of Interior n.d.), an Electronic fuel system for public employees who use general cars(Ministry of Interior n.d.), and a Traffic violation e-system for citizens to know if they have Infractions of the traffic laws(Ministry of Interior n.d.).

During the COVID-19 epidemic, the Ministry of the Interior establishes an e-service that allows citizens to request permission to travel inside or between cities during the quarantine.

Another move toward e-services by the KRG was creating a legislative database by the Ministry of Justice in 2021. This database contains all of the laws, legislations, directions, statements, regulations, explanations, and suggestions currently in effect in Kurdistan(Ministry of Justice n.d.).

Finally, one of the steps for tackling corruption in the region by the government is the biometric system. KRG decided to tackle the corruption in the employees' salaries after the unprecedented economic downturn by having a database that contains the entire governmental employee's information. As discussed previously, the database was announced as a biometric system in 2016.

Table 1. IT projects in the Kurdistan region

Project Name	Established Year	Cooperated Company	Proceed	Project Details
iOpenKRG	2007	Innovazione Italia	suspended	Communicate with all the ministries through fibres-optics.
Zankoline	2011		Completed in 2012	They allow students of 12 grades to apply for public universities, then get their acceptance results.
Electronic ID card	2016	Microsoft company	suspended	ID card planned to include the entire employee's information and their biometric.
Biometric System	2016	Independent High Electoral Commission (IHEC)	On Progress	Allows the recognition of a particular characteristic of an individual using mathematical algorithms and biometric data, and no registered employees reached 500,000.
Asan Services	2017	(Sinam) company	Not Completed	The Ministry will have new hubs with ICT platforms to deliver e-administration services through the project planned to establish Public Service Centre.
Modernization of Public Procurement System in Kurdistan Region of Iraq	2018	Korea International Cooperation Agency (KOICA)	On Progress	It consists of consulting services, developing e-procurement systems, and IT equipment and training programs for capacity building.
Khizmat	2018	KRG	Completed in 2019	A static portal that contains (407) governmental service's information. Such as; issuing driving licenses, investment in the region, education and higher education and all the needed information.
E-service	2020	KRG - Ministry of Interior	Completed in 2020	Allowing citizens during the quarantine could allow travelling inside the city or between the cities.
Electronic Visa	2016	KRG - Ministry of Interior	Completed in 2016	They allow companies, NGOs, visitors, UN organizations, visitors, and others to ask for a Kurdistan visa online.
Vaccination System	2021	KRG – Ministry of Health	Completed in 2021	They are allowing citizens to register for vaccination before tacking the vaccine.
Kurdistan E-Residency System		KRG - Ministry of Interior	completed	-
Traffic violations' system		KRG - Ministry of Interior	completed	-
Electronic fuel system		KRG - Ministry of Interior	completed	-
Legislation database	2020	KRG - Ministry of Justice	Completed in 2021	A database that contains all the laws, legislations, instructions, statements, rules, explanations and suggestions that are in used in the Kurdistan region.
Equalization of foreign qualifications		KRG - Ministry of Higher Education and DOTTECH company	completed	An online application for Equalization of foreign qualifications for people studying abroad and people searching for the vacancy in the Kurdistan region
Student Platform	2021	SPU	Completed in 2021	An online platform for transferring students among universities, colleges and departments.

4. METHODOLOGY

E-government has different phases and levels, and each has its objectives and goals. All the stages of the e-government require evaluation of their progress to enhance the successful implementation to reach goals and objectives(Al-Kaseasbeh et al. 2019). For this purpose, for evaluating and ranking e-government projects, e-government maturity models are used (Adeshara et al. 2004). Additionally, these models can be used as a roadmap to assist governments in improving their electronic service delivery(Hussain et al. 2019). Although, adoption of e-government is a big issue in developing countries, hence many governments, starting e-government projects. Unfortunately, researches show that the existing maturity models fail to align in developing countries(Joshi and Islam 2018). Political issues, corruption, and the inability of citizens to access government services are among the obstacles to these countries' adoption of e-government (Alqaralleh, Al-Omari, and Alksasbeh 2020). There are several evaluation maturity models, and each model has different phases for evaluation, such as; Layne and Lee, Andersen and Henriksen, the United Nations, Cisco, Gartner group, West, Moon, World Bank Etc. In this paper, we use the Layne and Lee model, and in the following section, we will review the model phases.

For evaluating the progress of the model phases, we depend on a questionnaire that has been distributed among citizens (including government employees) via the Internet. The questionnaire contains two types of questions; the first type is general information about the participant to differentiate between public and private sector employees. The second types of question are about the e-government and the use of ICT in the region and citizens' perspectives on e-government and KRG plans. The questionnaire participants are from five governorates (Erbil, Sulaymaniyah, Duhok, Kirkuk and Halabja). The total numbers of respondents were (587) and the respondents were from the public sector, private sectors, political parties, employees from NGOs, students, retired people, and some were jobless.

4.1. Limitation of the study:

This research encountered various constraints within conducting. The most extreme issues were the lack of information and data about e-government progress and IT projects. Additionally, establishing on conventional channel for furnishing with right and careful data expected regarding the advancement of uncompleted or suspended projects and the explanations for the disappointment and suspensions.

4.2. Layne and Lee model:

Based on the experiences with the government initiative in the US, Karen Layne and Jungwoo Lee developed their "Layne and Lee maturity model "(Karen Layne 2010). This model outlines the structural transformation of governments and how it merges the traditional governments with the new government based on the Internet for offering services to the citizens(Yu and Hu 2007)(Fath-allah et al. 2014). The model consists of catalogue, transaction, vertical integration, and horizontal integration.

The public authority presented on the Internet in the first step. Citizens can transact with their governments in the second level. The third stage integrates with higher-level systems that perform comparable functions or have similar authorities. Finally, the Systems are integrated across multiple functions in the fourth step.
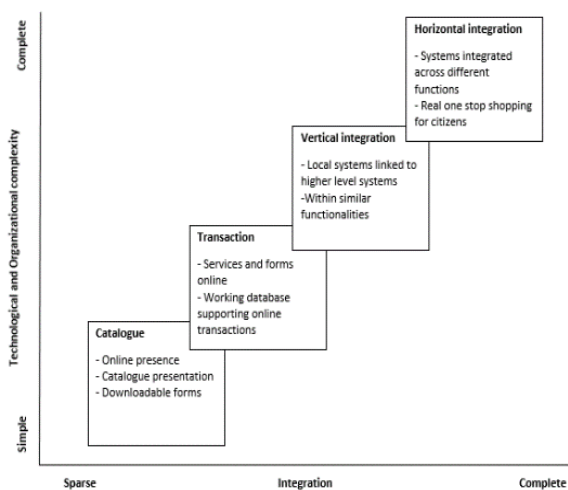

Figure 1. Layne and Lee model(Karen Layne 2010)

5. RESULT AND DISCUSSION

As it is known, e-government is yet in its beginning phases in the KRI, and unexpectedly, the first and second phases of the model are not prepared. Subsequently, not all model stages have been evaluated. The first and second phases of the model were assessed utilizing a questionnaire and the insignificant data we gained from government official sites and literature.

5.1   First stage: Cataloguing:

The first stage of the Layne and Lee model is the Catalogue stage. In this stage, the government starts creating and developing static websites. These websites contain information about the government, its rules, regulations, policies, and the procedure of the administration processes in all the sectors. With these websites, citizens can acquire the information they need simultaneously with the other ways of getting information such as; visiting the government establishments and waiting in line, or getting information by phone calls. These websites also give tourists, international investors, and international students information. This stage includes; the online presence of the government, catalogue presentation, and downloadable forms by the government(Karen Layne 2010). The Kurdistan Regional government started the process for being existing on

the Internet, and almost all the ministries and governmental establishments, and boards have their websites**.**The Kurdistan Presidency, the Council of ministries, the 19 ministries, and other boards and establishments have official websites. Since the government now uses the (krd) domain, the Council of ministries used the (gov.krd) domain as a formal domain of the government. All the ministries, boards, and government establishments are connected to the government page. The government unified all the ministries' websites; citizens can access and search for all the government ministries on one website

For evaluating the progress of the e-government, we depend on the citizen's perspectives about the e-services that the government offers to its citizens. The total number of participants is (587) citizens, (312) females and (275) males, as shown in Figure 2. With ages ranging from 18 to older than 60, most participants' ages were between (20 to 40). Most participants were from Erbil governorate with a percentage of (78.5%), and (6.2%) Sulimanyaih, (14.8%) from Duhok, (0.4%) from Kirkuk, and (0.1%) from Halabja. The percentage of participants based on the two genders and the governorates shown in the below chart:
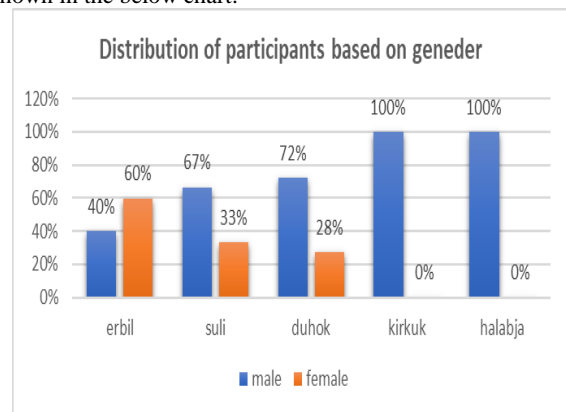

Figure 2. Distribution of participants based on gender

Most of the participants hold a bachelor's degree (49%), and (21%) of them have a Master's degree, (16%) with a diploma, (7%) of them within a Ph.D., and the rest of the participants with no education, primary and secondary. Among the participant, (584) of them declare their jobs.
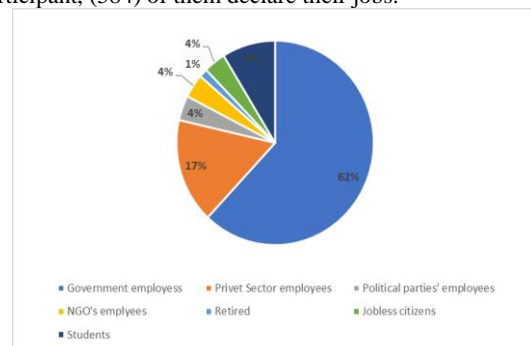

Figure 3. Participants' current job

To know the level of citizens' use of the technology, the participants were asked how to use computers and technology in general. (51.1%) of participant's replay that they have an excellent understanding of using technology, (36.75%) is good, and (12.13%) is medium. However, we cannot entirely depend on the answers to this question because all the participants get the questionnaire online. Most of them have good knowledge about using computers and technology. Besides, we asked the participants about their opinion about the level of technology used by the citizen's in general and the government employees in specific. The question's answer varied between (excellent, suitable, medium, bad, and have no information) and the

participants' responses is (3.4%), (23.5%), (46.8%), (24.5%), and (1.8%) respectively.

Then, based on the current technology situation, the participants were asked if they think the region has human resources and technical infrastructure for building e-government? Only (29.7%) participants believe that the region has such infrastructure. While (68.2%) participants think that the region has no infrastructure, the remaining (2.1%) participants have no idea about this issue. Also, the participants have been asked if the e-government is a way for reducing and fighting corruption. Most of the participants (62.97%) think that the e-government will reduce corruption, while the other (37.03%) believe that there is no relation between e-government and fighting corruption.

Further, in the following section, we will evaluate the first stage of the model based on the citizen's responsibility. Firstly, we asked if they are using the official websites to get information or using other sources such as social media widely in the region. Among (584) respondents, (83.56%) get governmental news from social media, (12.84%) from official government websites, and (3.60%) from both sources. The questionnaire results show that (304) governmental employees (83.98%) get information and news from social media. The results show that citizens in the Kurdistan region in general and government employees in specific are getting the news about the government from social media. This indicates that the official government websites, either weak in the information or the government are not encouraging its citizens to use them.

Later, the governmentally employed have been asked if they are using official email to communicate among them or use other conversational and communication applications such as (WhatsApp and Viber). The total number of participating government employees is (362). Only (343) responded to this question. (71%) of the respondents use WhatsApp and Viber for communication, and only (29%) responded by using email for communication.

From the view of the citizens of the KRI, we find that although the government tries to catalogue its services and make the information available online. Besides, the government supports all its establishments with all the technical equipment. Hence, citizens in general and the government employs in specific are not using these technologies properly, and most of the participants think the region lacks both human and technical infrastructures. And the government are starting to establish some e-services without building the human resource infrastructure.

5.2 Second stage: Transaction:

After completing the first stage, cataloguing, governments must begin to offer services, with governmental forms and databases going online. This process falls within the second stage of the model, referred to as the Transaction stage. In the transaction stage, e-government represents the government as an active respondent on the other side of the Internet. It is now possible for the government and the public to communicate in both directions. Citizens interact with the government online by filling out forms, and the government replies by sending confirmations, receipts, and other documents. More crucially, citizens shift from a passive to an active role by doing transactions online and participating in online platforms that allow citizens to speak directly to government officials or participate in public hearings (U. S. General Services Administration, 1999, p. 8).

Citizens must use the online fulfilment of government requirements rather than going to government entities and completing the criteria to be entire paperwork. The categorization of official information is insufficient; electronic interactions offer a better chance for enhanced efficiency for citizens and governments(M., M., and M. 2016). This stage is

the start of e-government as a revolutionary entity that will change the way people engage with their government. This stage is the start of e-government as an extreme entity that will change the way people engage with their government. The advantages of this stage allow citizens to interact with their governments online at any time, saving those hours of paperwork, the difficulty of traveling to a government office, and the time spent standing in line. Online automobile registration and state tax filing are just beginning transaction-based services. (US General Services Administration, 1999, p. 8).

KRG steps forward to implement the second phase by transferring some of its services to be online. Such as; E-service, Electronic Visa, Vaccination System, Kurdistan E-Residency System, Traffic violations' system, Electronic fuel system, Equalization of foreign qualifications, and Student Platform (see Table 1). For evaluating the existing e-services, two of the current services have been taken as an example, and the participants have been asked about them. The first e-service is the online permission form for traveling inside and outside the cities during the pandemic of the COVID-19. Based on the participants' responses, (81.53%) of them think it was an excellent service, and (18.46%) believe it was a wrong and unnecessary service. Besides, we asked the participants about the online platform for submitting citizens' complaints about the Ministry of the Interior employees. Based on the responses, (94.30%) think it's an excellent platform, and (5.70%) believe it's not a good service. The above results show that the region's citizens need and support the e-services and are ready to use these governmental platforms.

Based on the results above, the participants are asked if all the government services have become electronic. The answer between agreeing and disagree, (82.77%) agreed and (17.23%) opposed having e-services in all government sectors. For knowing their perspective about future e-services, they asked if it is necessary to have e-services, especially in the education and salary sectors, especially after we faced the pandemic of COVID-19. (80.54%) think it's essential to have e-services, (18.43%) think it's not crucial, and (1.03%) respond with having no idea about the question. Also, (78.80%) believe it is essential to have E-Systems for the salary of the governmental employees (such as ATMs). In comparison (10.06%) and (5.12%) are unsure about the system or disagree with having this system.

Last, the participant has been asked about the sectors that have more priority to transfer its services to e-services are; health sector, education sector, passport, and national ID, driving license, and employees' salaries. Hence, the participants think that the most crucial issue that the government should consider while converting the services to e-services are citizens' personal information, national security, and the government's openness toward citizens.

5.3 Third stage: Vertical Integration:

Instead of automating and digitizing existing operations, the emphasis is now on transforming government services. Making government electronic necessitates more than simply making existing services available online. Permanent changes in government operations and the concept of government should and will take place. Electronic government projects, like electronic commerce, have the potential to alter private industry and society in terms of processes and goods. E-government will only function in the long run if organizational improvements accompany it(Karen Layne 2010)(Andersen and Henriksen 2006). Unfortunately, the electronic government in the Kurdistan region has not reached this stage yet.

5.4 Fourth stage: Horizontal Integration:

From the citizen's perspective, the full potential of information technology can be achieved by horizontally integrating government services across functional boundaries. As more public managers recognize the potential of the Internet, the restrictions of the public and private sectors will become clear. Most people in need of government assistance require a variety of services. Those in need of shelter, education, food, and medical care, among other things, require government assistance. Numerous cities have established one-stop service centers where the homeless can obtain information on jobs, court dates, and medical care to address this issue. Governments are continuously fighting to get services to those who require them(Karen Layne 2010)(Andersen and Henriksen 2006).

In light of the survey and the citizen's view, there are many finished projects. Yet at the same time individuals are unsuitable for them either in light of the residents' absence of mindfulness about the significance of these e-services. Or then again, because the public authority has a great deal to do with these tasks. Because of the development model we utilized for assessment, the KRG does not pass the initial two stages and the public authority, without giving the index stage, starting with the exchange. The main reason is the lack of IT infrastructure to build the road map for e-governments and lack of awareness.

6. CONCLUSION AND FUTURE WORKS

This paper presents the evaluation of the e-government process in the Kurdistan region of Iraq as the government announced the use of electronic government to streamline governance and combat corruption in the region. Even while e-government and its policies enable transformation and foster more contemporary and efficient administrative operations, e-government will not resolve all corruption, bureaucracy, and incapacity of administration, nor will it eliminate all barriers to civic engagement. E-government does not materialize just because it purchases additional computers, establishes websites, and makes public announcements about its importance. E-government is a process that involves careful study and planning and appropriate use of resources. As a result, ICT can transform how people engage with the government and with one another. Based on the citizen's perspective, although the government has made good progress toward e-government, still the process is prolonged, and most people are not familiar with the e-services. They do not expect more improvement in this area. And we can conclude that the KRG is not successful in implementing e-government in the region.

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تقييم تقدم الحكومة الإلكترونية في إقليم كوردستان- العراق من منظور المواطنين

الملخص:

لقد أثر التطور السريع للتكنولوجيا على طريقة تفكير الناس وتفاعلهم اجتماعياً، وكيفية قيامهم بالأعمال، مما دفع الحكومات في العديد من البلدان إلى تغيير طريقة تفاعلها مع مواطنيها. إلى جانب ذلك، أدى هذا التطور في تكنولوجيا المعلومات والاتصالات إلى زيادة حاجة المواطنين إلى حكومات أكثر شفافية ذات بيروقراطية وأعمال روتينية أقل، كما يحتاج المواطنون إلى أن يكونوا مركزاً للقرارات الحكومية التي تؤثر على حياتهم. وضمن هذا الإطار، أعلنت حكومة إقليم كوردستان في العام 2007 عن بناء حكومة إلكترونية قوية تعتمد على التكنولوجيا، وكذلك تغيير الحكم التقليدي إلى الحكم الإلكتروني والخدمات الإلكترونية، والحد من البيروقراطية ومكافحة ظاهرة الفساد المالي والاداري. وتبعاً لهذا المنظور، يهدف دراستنا هذه إلى تقييم تقدم الحكومة الإلكترونية في حكومة إقليم كردستان من خلال استخدام نماذج النضج والتي تتكمل في نموذجي "Layne and Lee" على وجه الخصوص، وتحديد مستوى نضج في تقدم الحكومة الإلكترونية. وبالنسبة للمستويين الأول والثاني من التقييم، يقوم البحث بتحليل وجهات نظر وآراء المواطنين من خلال تحليل البيانات المُستقاة من استبيان تم اعدادهُ لهذا الغرض. ونظراً لأنَّ الحكومة الإلكترونية ما زالت في خطواتها الأولى. ومن ثمَّ، لا يمكننا تحليل المستويين الثالث والرابع من نموذج الدراسة. وتبين نتائج تحليل التقييم أن العملية ستمتد لفترةٍ غير قصيرة، ولاسيَّما أن معظم الناس لا يعرفون الخدمات الإلكترونية ولا يتوقعون إحراز المزيد من التقدم في هذا المجال على المدى المنظور.

الكلمات الدالة: حكومة الكترونية، خدمات الكترونية، بيروقراطية، شفافية، منظومة الاحصاء البيولوجي، نموذج النضج.

هەڵسەنگاندنی جێبەجێکردنی حکومەتی ئەلکترۆنی له هەرێمی کوردستانی- عێراق له روانگەی هاوڵاتیانەوه

پوخته:

پێشکەوتنی تەکنەلۆجیای زانیاری کاری کردۆته سەر چۆنیەتی بیرکردنەوەی خەڵك و کارلێککردن و بازرگانی کردن بەشێوەیەك که وای له حکومەتی زۆربەی وڵاتەکان کردووه شێوازی مامەڵەکردنیان لەگەڵ هاوڵاتیانیان بگۆڕن. پێشکەوتنی تەکنەلۆژیا و گەیاندن خواستی هاوڵاتیان زیاتر دەکات بۆ بوونی حکومەتێکی شەفاف و کەمکردنەوەی بیرۆکراسی و کەمکردنەوەی رۆتین. جگه لەمانه، خودی هاوڵاتیان پێویسته ببنه ناوەندی ئەو بریارانانەی که کاریگەری راستەوخۆیان لەسەر ژیانیان هەیە. لەم بارەیەوه، حکومەتی هەرێمی کوردستان له ساڵی ٢٠٠٧ بریاری دا به دروست کردنی حکومەتێکی ئەلیکترۆنی بەهێز و لەسەر بنەمای تەکنەلۆژیای زانیاری و گۆڕینی حکومەتی ئەلیکترۆنی و خزمەتگوزاری ئەلیکترۆنی هەروەها کەمکردنەوەی بیرۆکراسی و نەهێشتنی گەندەڵی. هەرچەنده تاوەکو ئێستا پرۆژەی حکومەتی ئەلیکترۆنی له هەرێمی کوردستان له سەرەتاوەیە، ئەم توێژینەوەیه و به مەبەستی هەڵسەنگاندنی هەنگاوەکانی پرۆژەی حکومەتی ئەلیکترۆنی له هەرێمی کوردستان کەڵکی وەرگرتووی له یەکێك له مۆدێله پێگەیشتووەکان (Layne and Lee model)و دیاریکردنی ئاستی پێگەیشتنی پرۆسەی حکومەتی ئەلیکترۆنی. ئەم مۆدێله له چوار ئاست پێك دێت، بۆ ئاستی یەکەم و دووەم، هەڵسەنگاندن کراوه بۆ حکومەتی ئەلیکترۆنی له رێگەی پشت بەستن به داتای بەردەستی حکومەت و داتای راپرسییەکی تایبەتی بۆ زانینی تێڕوانین و بۆچوونی هاوڵاتیانی هەرێم سەبارەت به خزمەتگوزارییەکانی حکومەتی ئەلیکترۆنی. به هۆی تەواو نەبوونی پرۆژەی حکومەتی ئەلیکترۆنی له هەرێم، هەڵسەنگاندن بۆ هەردوو ئاستی سێیەم و چوارەم ئەنجام نەدراوه. لەگەڵ ئەوەشدا، ئەنجامەکانی شیکردنەوه دەریدەخەن که پرۆسەکه کاتی زیاتر له پێویست خایاندووه و زۆربەی هاوڵاتیان ئاشنا نین به خزمەتگوزاریه ئەلیکترۆنیەکان و چاوەروانی پێشکەوتنی زیاتر ناکەن لەم بوارەدا له ماوەیەکی کورتدا.

پەیڤێن سەرەکی: حکومەتی ئەلیکترۆنی، خزمەتگوزاری ئەلیکترۆنی، بیرۆکراسی، شەفافیەت، سیستەمی بایۆمیتری، مۆدێلی هەڵسەنگاندن.