

# **The Evolution of E-government Project in GCC Countries**

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## **Abstract**

Government makes best possible efforts to communicate and provide information to citizens. Today every government has full faith in e-government and widespread network of e-government across the world proves its importance. E-government is the online delivery of local and national governmental information and services to the citizens, businesses, and other governmental agencies. It helps people and government sectors within the country to perform their tasks effectively and efficiently. In particular, there are many challenges regarding e-government progress that need to be highlighted in the Gulf Cooperation Council (GCC) countries. Therefore, this paper investigates the current e-government in GCC countries. Hence, this paper reviewed the e-government literatures according to each GCC country. Accordingly, a comparison study is driven to evaluate the current official e-service websites in the GCC countries under specific criteria for a better e-government transformation and engagement.

## **Keywords**

E-government, Transformation, Citizens, Technology, and Services.

## **1. Introduction**

In the last few years, massive explosions have been recorded in information technology around the world. The super role computers have pushed away to thin devices and laptops. The gathering of electronics and telecommunications has expanded new vistas of transmission, storage, and retrieval of information like never before. These are being increasingly used for decision-making not only in the modernized world but even in public administration. Expressions like e-government and e-commerce are the new polarization words. This phenomenon will become even more important as years pass by. The total scenario is changing very fast (Atkinson and Castro, 2008).

The World Bank (Panzardi et al., 2002) has defined the term of e-government as “the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government”.

In this regards, it would be important to take in our consideration what would be the shape of governments in twenty or twenty-five years from today: governance in its comprehensive form involving the transnational and national, at state level and at area edges. The social efforts produce by population are massive towards government facility and economic infrastructure (Mälkiä et al., 2003).

The Gulf Cooperation Council (GCC) countries in particular have realized the importance of moving forward to the information century. GCC countries include Kuwait, Saudi Arabia, Qatar, Bahrain, United Arab Emirates, and Oman. E-government initiatives were launched in GCC region as a part of information technology plans. The notional information technology plan for each country focused on Information Communication Technology (ICT) as a tool to reform public organizations. Therefore, the objectives are similar in concept but differ in approach based on the structure of the country (United Nation, 2016).

The objective of this paper is to investigate the previous studies corresponding to e-government in GCC countries in order to determine the progress of e-government implementation projects. Consequently, this work provides an evaluation of the official e-government websites in GCC countries. Thus, a comparison study will be performed in order to investigate the current status of e-services provided by GCC governments for a better approach.

The rest of the paper is being organized as follows: Section 2 provides a snapshot review of the global ranking of GCC countries e-services implementation according to United Nation e-government latest reports (2016 and 2018). Section 3 provides an overview of literatures around each country in GCC region with respect to e-government transformation. The outcomes of e-governments diffusion is discusses in section 4. It then presents a comparison study to evaluate the official e-government websites in each GCC countries under specific criteria for supporting e-services transformation in section 5. Section 6 concludes the paper.

## **2. Global Ranking of GCC E-governments**

United Nation Public Administration Network (UNPAN) is a worldwide organization to set the benchmarks of the global governments against four key matrixes which are, Online Service Index, Telecommunication Infrastructure Index, E-Participation Index, and Human Capital Index (United Nation, 2018; United Nation, 2016).

UN e-government evaluation report is being published every two years. The deliverable qualifications and rankings categorized the development process of e-government globally. The top five countries that achieved the highest maturity in the transactional stage of e-government are Denmark, Australia, Republic of Korea, United Kingdom, and Sweden (United Nation, 2018).

Denmark has integrated its place in offering transactional e-services and is planning to achieve transformation for citizen-centric e-government. Also, the rest of the listed countries have shown the maximum transaction of work offered to improve their governance efficiency. Their key strategy is to improve government services and bring them in line with the international standards.

Regarding GCC countries, Table 1 presents the UN rankings for the GCC country for 2016 and 2018. The ranking on 2018 shows that United Arab Emirates (UAE) and Bahrain were ranked top two respectively, followed by Kuwait at 3<sup>rd</sup>, Qatar at 4<sup>th</sup>, Saudi Arabia at 5<sup>th</sup>, and Oman at last. On the other hand, it can be noticed that some of GCC countries has improved their e-government progress by 2018 compare to 2016. UAE has made a remarkable progress in term of improving its services and processes. It proves that UAE worth its UN e-government ranking in 2018, jumping 8 points up to rank 21 worldwide after being ranked at 29 in 2016. Oman has advanced in ranks from 66 to 63 from 2016 to 2018. However, the remaining of GCC countries has been slipping from its ranked according to the data of 2018 report. Kuwait has withdrawn from 40 to 48, Bahrain fell from 24 to 26, Qatar from 48 to 51, and lastly Saudi Arabia retreated from 44 to 52.

Table 1. UN ranking of e-government in GCC countries (United Nation, 2018; United Nation, 2016).

<b>2016 Ranking</b>		<b>2018 Ranking</b>	
Bahrain	24	UAE	21
UAE	29	Bahrain	26
Kuwait	40	Kuwait	48
Saudi Arabia	44	Qatar	51
Qatar	48	Saudi Arabia	52
Oman	66	Oman	63

Furthermore, e-government is a key player in public life, since what it does has a daily and direct impact on citizens. GCC e-governments should use the appropriate technologies to effectively provide government services and engage citizens in decision-making. People interact more often with high qualified administrations that process trustful, secure, and renewable services than with the undefined one, because the first delivers the vast majority of services that concerns them and determines the sustainable development of their close living environment.

### **3. Literature Reviews: E-government of GCC Countries**

Since decade ago, several documents have described the important of implementing E-government system in government organizations to develop the interaction among society in general and country departments in particular (Atallah, 2001). GCC countries are part of this digital world and studying the availability of e-government technology is an approach to be considered. This section provides the literature about e-government in GCC countries, and this includes e-government history, issues, quality, and the necessary improvements.

#### **3.1 State of Kuwait**

In 2000, a committee headed by the Prime Minister was established to develop a vision for e-government projects in Kuwait. The idea behind it was to improve a certain services substantially (Boujarwah, 2006). Since then, Kuwait has invested more in ICT infrastructures towards implementing its e-government projects. Kuwait is very technologically advanced, especially in internet capabilities. However, many Kuwait e-government websites are only information providers, not services, which require extensive efforts to enhance the performances of e-government services (Boujarwah, 2006).

On the other hand, there are many challenges associated with Kuwaiti e-services, such as: there is an over-investment in ICT and an under-investment in skills and content, which need to be acquired (Boujarwah, 2006; AlAwadhi and Morris, 2009). In addition, many e-government sites in Kuwait suffer from lacks of privacy and security. Moreover, more are issues related to retraining of low level of staff and managers (AlAwadhi and Morris, 2009). Another barrier is that Kuwait need to educate the community for the benefits of e-government services to entirely minimize face-to-face activates in a culture where oral and interpersonal traditions are deeply anchored (Alenezi et al., 2017). Moreover, Kuwait need to prioritize the improvement of mail services, which severely hampers the efforts to render services (Boujarwah, 2006).

A study is proposed to test the users' tolerance among Kuwait, whether it adequate as an environment to use e-government or it is yet to be develop (Shama et al., 2019). It is obvious that e-government has been the essential target to the majority of the researchers globally. On contrary, being able to worthen the trust of users is a primary case to adopt in e-government (Aljazzaf, 2019; Shama et al., 2019). In addition, trust in e-government requires a trust in the government as well, to be able to deliver the best outcomes of both the internet and the online transactions (Aljazzaf, 2019; AlAwadhi and Morris, 2009).

In the current e-government literatures (Shama et al., 2019; Alenezi et al., 2017), some authors have highlighted the importance of giving the users access to a highly quality services. Having a high quality e-government services do not only affect the citizens and business, but also leads to a revolutionary change (Shama et al., 2019). Furthermore, the impact of quality in Kuwait e-government services is high according to Kuwait e-government portal and social media broadcasting (Alenezi et al., 2017).

Nevertheless, a lot of improvements need to be considered in order to enhance and evaluate the quality of provided services such as privacy of users identity, security, change management thinking, public education, reliability, content, training, and create the on-going nature of e-government (Boujarwah, 2006; AlAwadhi and Morris, 2009; Alenezi et al., 2017). The development of these services, are the keys parameter for users satisfaction. Moreover, applying and implementing these services influence the beneficiaries to keep up with the world of information that faces a rapid development (Boujarwah, 2006; Alenezi et al., 2017).

According to the global United Nation e-government report in 2018 (United Nation, 2018), Kuwait ranks the thirds highest amongst the GCC countries being 48<sup>th</sup> on the world rank. It is clear that all countries are trying to provide as many e-services due to citizens as possible, however, there are still behind the line of e-government (United Nation, 2018; United Nation, 2016). Kuwait in the other hand has made a slow progress in term of improving its e-services, which led other countries around the globe to pass over and push Kuwait ranking backwards.

#### **3.2 The Sultanate of Oman**

Public sector transformation have a greater impact in the gulf region with many countries investing significantly into e-government initiatives, The sultanate of Oman is one of them. The National Committee for ICT was

established in 1998 to address issues in Oman information and communications sector (Paracha and Kubba, 2011). Due to some services limitation, Oman has made a slow progress in terms of releasing fully e-government transactions. For the government to be significantly developed, an acceptable legislation and culture terms should be adopted in e-government initiatives. The consequence of this will led to increase the users trust and confidence, while e-government continue to enhance their level of communication and interaction (Al-Busaidy and Weerakkody, 2009; Al-Shafi and Weerakkody, 2016).

A research is been represented in a quantitative survey to determine the current state of Omani e-government based on a number of factors such as, accessibility, efficiency, availability, security, and privacy (Al-Busaidy and Weerakkody, 2009). In this context, the findings confirm that the success of e-government in Oman will largely depend on providing a better strategy of the official services websites (Al-Busaidy and Weerakkody, 2009). The results reveals that improving the efficiency and the availability of public services shall rise the level of confidence between citizens and users on Omani e-government (Al-Busaidy and Weerakkody, 2009; Al-Shafi and Weerakkody, 2016). In addition, the outcomes of the study found that Omani IT worker capability had an indirect impact on users trust in using e-services (Al-Busaidy and Weerakkody, 2009; Sarrayrih and Sriram, 2015).

It is important to determine citizens' satisfaction in every country towards e-government implementation (Aljazzaf, 2019; Shama et al., 2019). Oman has targeted some of these approaches by simply check their citizens' intention to use e-government in Oman (Paracha and Kubba, 2011). A study using Statistical Package for Social Sciences (SPSS) program has been preform to test users' willingness for using e-government services. The results shows that government should pay more effort on building positive relationship with users as they considered the main customers that affect the successful of e-government projects. Furthermore, choosing the right businesses partner in e-services area in order to develop government-citizens relationship consider a critical factor for users trust agreement (Al Salmi and Hasnan, 2016; Sarrayrih and Sriram, 2015).

Other studies (Al-Shafi and Weerakkody, 2016; Sarrayrih and Sriram, 2015) have suggested common strengths and weaknesses that currently influence e-government implementation in Oman. Among the most factors identified as major challenges to e-services were lack of strategies, leadership, legal and regulatory frameworks, and infrastructure issues. Oman need to focus more on non-technical barriers such as lack of IT knowledge and the absence of marketing campaigns that have affected the decisions maker from implementing technology initiatives (Al Salmi and Hasnan , 2016; Sarrayrih and Sriram, 2015). In addition, Oman was found to be prone to short-term planning, which prevent it from anticipating the long-term potential of e-government. The fact that e-government projects is not given high priority nor urgently needed at present, have contributed in delaying the development of Omani e-system (Sarrayrih and Sriram, 2015). Moreover, Oman government needs to develop a set of policies and regulations to enhance the development of accessible sites and encourage the use of ICTs that facilitate citizens need in the context of e-government (Paracha and Kubba, 2011; Al-Shafi and Weerakkody, 2016; Al Salmi and Hasnan, 2016).

### **3.3 State of Qatar**

In 2004, e-Qatar was established to manage and develop the overall of ICT strategy, relating to infrastructure, service, delivery, and legislation of public services (Al-Kubaisi, 2014). The initial research conducted by the authors indicates that the adoption and diffusion of e-government services has been slower than usual in Qatar, makes the development necessarily to perform (Al-Kubaisi, 2014; Weerakkody et al., 2009).

In order to increase the accessibility of e-government services and users participation, in 2007, Qatar government launched access to free wireless internet in public parks – (i-Park). The idea aims to foster knowledge based society on e-government concept (Weerakkody et al., 2009). The purpose of e-government is to make the full use of the potential technology, which makes the citizens its intention.

E-government promise to deliver a number of benefits, according to Qatari ICT; such us, delivering electronic and integrated public services operating 24 hours a day, seven days a week (Shafi and Weerakkody, 2007); bridging the digital divide so that every citizen will be offered the same type of information and services from government (Shafi and Weerakkody, 2007); facilitating users participation by innovatively using ICT to provide access to policies and regulations (Al-Shaf and Weerakkody, 2009); building customer relationships; encourage economic development and assisting local businesses to expand globally (Weerakkody et al., 2011); and creating participative form of government (Shafi and Weerakkody, 2007).

Like any other new technology, Qatar e-government has also resulted in a number of challenges for both users and government transformation. Lack of access to e-services (Shafi and Weerakkody, 2007; Al-Shaf and Weerakkody, 2009); security concerns and trust (Al-Shaf and Weerakkody, 2009); individual differences (Shafi and Weerakkody, 2007); and digital divide (Al-Shaf and Weerakkody, 2009); are challenges that can impact on

participation and thereby obstruct the further take-up of e-government services. These types of challenges have influenced e-government implementation and can effect governments in various ways.

Based on the literature (Weerakkody et al., 2011), the following adoption factors for e-government and e-participation can be concluded, such as: performance expectancy, effort expectancy, social influence, facilitating conditions, intention to use e-government. These constrains have been established as predictors of technology acceptance (Weerakkody et al., 2011). Performance and effort expectancies are factors to be measured by e-government services in terms of benefits. For instance, saving time, money and effort, will help to facilitate the communication with government. Improving the quality of government services, by providing citizens with an equal basis on which to carry out their business with government is another influence to be capture (Weerakkody et al., 2009; Weerakkody et al., 2011). Furthermore, social influences, facilitating conditions, and behavioral intentions are also necessary to be adopted and included in supporting the usage of e-government services (Weerakkody and Dhillon, 2008).

### **3.4 Kingdom of Saudi Arabia**

Information technology is now playing an important role in the economics of many nations, and Kingdom of Saudi Arabia (KSA) has given it top priority. The IT National Plan in KSA reflects a key interest of the government in supporting the transformation towards e-government (Moon, 2002). Nevertheless, to identify these principles and roles in to reality, more effort is needed. In light of this, in 2003, KSA government established “Yasser”, the e-government program. The main objectives of this program are focused on three areas, namely e-readiness, e-society, and IT training (Sadiq et al., 2003).

The adoption of e-government requires that all public sector organizations are empowered to carry out their activates electronically (MICT, 2004). The empirical research represented that there are many motivations or reasons behind e-government adoption in KSA both national and organizational level. For example, economic, geographic, political, managerial, social, and cultural reasons are factors that affect the adoption of KSA e-government (Moon, 2002; Al-Fakhri et al., 2008).

Recently, governments in GCC region have stated using e-government as a means to achieve a high level of performance while providing cost effective outcomes (Molla and Licker, 2005). However, many of these governments are still in the beginning of that process. KSA, the biggest country in GCC, is in process for a transactional to e-government (Sadiq et al., 2003). Today, most of the KSA government websites are inefficient in that they just provide basic and general information about the organizations and often data are not updated. Other challenges such as, infrastructural weakness, lack of knowledge, lack of security and privacy, lack of qualified personal, lack of strategic planning, social interfering, and culture background are barriers that affect the adoption of e-government services in KSA (Al-Fakhri et al., 2008; Molla and Licker, 2005; ALRiyadh Newspaper, 2009).

E-government has the potential to wildly improve how government operates internally and how usually it serves the users (ALRiyadh Newspaper, 2009). Providing e-Saudi is much more than a tool for developing cost-quality in public services. It is an instrument of reform and a key to transform nation. Thus, e-government is not primarily about automation of existing procedures, but about changing the process in which government conducts (Al-Fakhri et al., 2008; Molla and Licker, 2005)

Based on that, KSA need to enhance their e-services in order to reach the desire goals of implementation (Akbulut, 2003). The following developments need to be accomplished, a strong and modern ICT infrastructure in all Saudi agencies and organizations, security and privacy are critical issues that need to take the highest level of priority, training government employees, professionally built and updated websites, issues relating to Saudi culture and societal structure should be addressed, and creating a uniform strategic plan for e-services (Al-Turki and Tang 1998; Akbulut, 2003). Adopting those programs will highly affect the performance of KSA e-services, supporting a better decision-making to e-government stakeholders, and improve Saudi society.

### **3.5 Kingdom of Bahrain**

Nowadays, e-government plays an important role in serving societies and businesses by providing to them different kinds of transactions and services at anytime and anywhere. The Bahraini government was aware of that need effectively and efficiently (Qasem and Hussein, 2016). Due to that, the government of Bahrain has introduced the e-Government Agency program launched by the deputy Prime Minister on 2007 (Meftah et al., 2015). The mission of this project is to comprehend the e-government vision in the country by defining the implementation of relevant strategies, facilitating the transformation of services, setting and monitoring compliance with policies, and win collaboration with government entities (Qasem and Hussein, 2016).

Many governments worldwide, including the Bahrain government face the problem of the adoption of e-services provided by e-government (Meftah et al., 2015). The success of e-government implementation depends heavily on

the citizens' willingness to adopt this innovation (Ebrahim, 2005). Therefore, the e-Government Authority in Bahrain is conducting marketing and awareness campaigns through advertisements in print, audio, and visual media and campaigns for sensitizing the public on the e-government programs (Qasem and Hussein, 2016; Ebrahim, 2005). The main objective of this program is to empirically test the factors that influence citizens' adoption of e-government and to increase the trust and culture awareness, through regression analysis (Qasem and Hussein, 2016). Data protection, privacy, and security are factors that have major influences on individual engagement to e-services (Ebrahim, 2005; Al-Kaabi, 2010). In addition, improving users trust in government through a better and an advance ICTs infrastructure are very important to enhance citizens' intention to adopt the online services (E-Government Authority, 2009).

In a rapidly changing environment, the Bahrain government is sparing no cost to deliver up-to-date services, yet the outcomes indicated that citizens are still reluctant to exploit the full potential of the e-services (Jaeger and Matteson, 2009). There are many challenges associated with Bahraini e-government such as, citizens with lower education and computer skills believed that the website is unclear and not easy to follow, where those with higher education though it was fair enough (Al-Kaabi, 2010; E-Government Authority, 2009). Another issue is that almost all citizens agreed that they have seen media campaigns for e-government services. However, they disagreed that their friends have influence on their decisions (Qasem and Hussein, 2016). The reliability of services and efficiency of websites need to be developed and updated. The security of website and safety of financial data need to be enhanced and protected (Al-Kaabi, 2010; Jaeger and Matteson, 2009). Finalizing those issues will lead to a better trust from citizens and a strong functionality from government.

Kingdom of Bahrain is one of the leading countries in the region adopting this innovation, which let the government spare less effort attracting citizens to e-services (Meftah et al., 2015). Supporting users by educating them about security procedures help to keep them protected. Policy makers can increase e-government services usage by introducing smart applications that fulfills people needs, expectations security conditions and trust facilitating environment (Jaeger and Matteson, 2009).

### **3.6 United Arab Emirates**

ICTs have affected the ways in which people, governments and businesses interact with each other. E-government considered as one of the fundamental building blocks of modern societies and digital economies (Westland and Al-Khoury, 2010). Yet, the revolutionary pace in many countries globally is dependent on the preparedness of both social and political environments. UAE initiatives started earlier in 2001, the federal e-government offered an e-services electronic card known as the e-Dirham. The idea of e-Dirham is to collect government services fees (Al-Khoury, 2012). Today, UAE is one of the most advanced country in GCC region in ICT infrastructures (Westland and Al-Khoury, 2010).

The criteria for the adoption of e-government from both citizens and government perspective is highly depend on two major factors, trust and security (Al-Moalla and Li, 2010). Trust is probably one of the most important aspects in the implementation of e-government plans. Without trust, citizens will not participate in the e-government process (Al-Khoury, 2012; Al-Moalla and Li, 2010). There are many factors that have the potential to impact the building of trust in UAE. For instance, study the individual (citizen) behavioral attributes, improving institutional attributes, developing the internal technology, quality of services provide, and fulfillment of services (Al-Khoury, 2012; Al-Moalla and Li, 2010; Salem and Jarrar, 2009). In fact, such expectations put more loads on governments to deliver a system that are efficient and effective (Salem and Jarrar, 2009).

On the other hand, and despite high spending and widespread of adoption of ICT infrastructure, many countries including UAE still suffering from several issues associated with e-services implementation (Westland and Al-Khoury, 2010). The variety and complexity of e-government initiatives in UAE implies the existence of a wide range of barriers to its management. ICT infrastructure is recognized to be one of the main challenges in UAE e-government (Ndou, 2004). Internetworking is required to enable appropriate sharing of information and open up new channel for communication of new services (Ndou, 2004). Policy and regulation are parts of e-government principles and functions. Dealing with e-government means signing a contract or a digital agreement, which has to be protected and recognized by formalized law for the protection of these kinds of activates (Salem and Jarrar, 2009; Ndou, 2004). UAE is in need of leader and management support for the innovation to be adopted. Top management helps to provide a positive environment that encourages participation in e-government application (Salem and Jarrar, 2009).

Future e-government applications may express in several forms, so that citizens can fulfill their opinion on public polices, services, and procedures (Al-Moalla and Li, 2010). The government of UAE decided to own the identification process itself and provide secure, unique, and tamper-proof digital identities to its population. This

kind of identity improves security, gain higher levels of trust and confidence, and encourage participation (Al-Khouri, 2012; Salem and Jarrar, 2009).

A society e-readiness is another term that should be closely planned and measured to ensure that e-government system is used by the majority of potential users (Ndou, 2004). UAE has emphasizes the important of measuring the society e-readiness according to some factors such as, knowledgeable citizens, skilled workforce, macro economy, culture, cost of living, and ability to invest (Westland and Al-Khouri, 2010; Al-Moalla and Li, 2010; Salem and Jarrar, 2009). Constructing a profile using those segments will more likely help the government to facilitate and encourage the citizens to participate on the online system of e-government.

#### **4. Discussion**

In GCC countries, e-government is now viewed as the path to develop a more sustainable new interaction to technology. It is considered as playing a vital role in managing and directing the process of change and reform that will boost public confidence. However, the challenges associated with it are not simple issues. Based on the evaluated literatures of GCC countries, it shows that there are overwhelming concerns about the potential of e-government, which makes the governments of GCC region in competition with each other to develop the optimum services.

The traditional and social similarities among GCC citizens such as, culture, religion, and bloodlines make the region nearly identical in thoughts and acceptances. Likewise, the facing challenges in e-government of these countries will nearly be similar. Lack of security and privacy are considered as primary issues to be adopted in e-government in order to reach the desire satisfaction of users. Building a protective, secure, and comprehensive model of e-government, which is not comparable from any other governments has the potential to minimize the risk of exploits and deliver better initiatives.

Governments in GCC countries need to review their accessibility related to policies, legislations, and regulations to accelerate the transition to accessible e-government sites. Considering websites accessibility will reduce the cost associated with it. In general, creating a whole e-government system with no bugs is hard to be accomplished. However, developing a well-qualified e-services system will definitely guarantees the fulfillment of e-governments functions.

Furthermore, issue related to low level of staff and managers is necessary to be highlighted. GCC governments need to invest more on human resources by finding the right training courses to all employees for the optimum e-government integration. Moreover, creating a better relationship with users is another factor that affects the adoption of such system. It is considered that GCC region is suffering from lack of strategy and leadership, which helps to provide a positive environment for the innovation to be adopted. In addition, citizens of GCC are in need to be educated about e-government initiation for a better participation and engagement. Hence, marketing campaigns have been considered as the new channels for communication, which will effectively change people prospective towards e-government initiatives.

Based on discussion, this work suggests some parameters for the evolution of e-government project in GCC countries. The selected parameters will be towards the issues that influence the development of e-government in GCC countries. The parameters are being divided based on a set of specific indicators that yield some sort of score and, furthermore, allow for a country e-government status comparison. Each group cover several spectrum of identified criteria, derived from the analysis of this paper literatures and practice efforts, to understand and measure the progress of e-government implementation in each GCC countries.

There are many parameters for assessing e-government transformation in GCC region, as different perceptions of evaluation lead to diverse criteria. Therefore, e-government metrics cannot be regarded as one-size fits-all. Existing literatures indicates that they differ, to some extent, by operation and provided services. To define an appropriate set of metrics, the study demands the following indicators:

**A. Technology:** Where some basic features of the network are assessed. This include:

- **Investment in ICTs, skills, and content.** This point reflect the government efforts toward the development of e-government implementation through a better design of citizen centric online services and for the efficient delivery of public services
- **Universal access approach.** The user ability to access the government official websites 24 hours, seven days a week. It is a way of offering better and more accessible services to citizens under any circumstances, anytime, and from anywhere.
- **Foreign languages support.** The ability to deliver and receive services in more than one language to increase the effectiveness of communication between users and the government organizations.

- **Usability expectancy.** Is to measure whether the services are clear, simple, consistent, and easy for user to use.
- B. Service Provision:** Where the delivery of the fundamental electronic services is assessed. This include:
- **E-Payment system.** It is the ability to ensure the proper implementation of e-payment services, to fulfill users' expectation. E-system is necessary to facilitate the speed and accuracy of electronic transactions.
- C. Content Provision:** Where the existence of essential information is examined. This include:
- **Information about services provided.** To examine the efficiency and the effectively of the provided services, the way of how the data will be represented, and interacted with users. Those services must be described in terms that are meaningful to citizens.
  - **Security and Privacy policies.** It is the ability to ensure that data security and privacy remain a priority to protect against costly breaches. It is the way to worthen the trust of users which is a primary case to be adopted.
  - **Help Option.** This point help trigger users whom still not fully aware of government services and guide their focuses throughout the provided services. It allows understanding the momentum in services for better users' interaction.
- D. Participation and Engagement:** This assesses the existence of relevant participation and engagement mechanisms and initiatives. This include:
- **Feedback and Complains.** For successful diffuse services, government will need to take in their consideration users' view, their opinions on relative advantage, investigate their feedback and complaints, and subsequently use this knowledge to develop citizen centric services.
  - **Marketing and announcement activities.** It is important to raise the awareness of the provided services through live broadcasting and social media. These factors help to promote users participation, especially those who are less attractive to computer or technology.

The proposed instrument, applied in this paper helped to define the appropriate set of metrics for a better GCC e-government evaluation. According to this, we propose an e-government comparison among GCC countries. This study assists to identify the development progress of each GCC e-governments by exploring their initiative. Furthermore, the suggested instrument enables the comparison of individual indicators identified on e-government portals by clustering them into certain criteria groups using website provided information.

In order to proceed along with the study, a scale format will be used as a tool to measure the quality of e-services provided as shown in Figure 1.

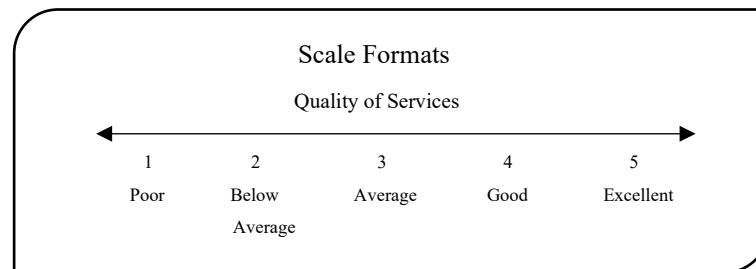


Figure 1. The scale used to measure the quality of e-services.

The idea helps to evaluate the criteria on e-government official websites by assigning the right indicator to each one of them. The indicators will be allocated according to the achievement of each criterion key features whether it is applicable or not. The scale shows that indicator 1 referred as incapable for the criteria to be implemented. On the other hand, 5 indicate as exquisite. Hence, as the indicators raised, the fulfillment of the criteria will be achieved.

## 5. E-government Evaluation in GCC Region

This section presents the evaluation of e-government official portals in GCC countries as shown in Table 2.



Table 2. E-government official portals evaluation in GCC countries.

Indicators	Criteria	GCC Countries					
		Kuwait	Oman	Qatar	KSA	Bahrain	UAE
Technology	Investment in ICTs, skills, and content	4	3	4	4	4	4
	Universal access approach	5	5	5	5	5	5
	Foreign languages support	3	3	1	3	3	3
	Usability expectancy	4	4	4	4	5	5
Service Provision	e-Payment system	3	1	1	2	3	3
Content Provision	Information about services provided	4	4	4	4	4	5
	Security and Privacy Policies	2	2	2	3	3	4
	Help option	3	3	4	3	5	5
Participation and Engagement	Feedback and complains	2	2	3	4	3	4
	Marketing and announcement activities	3	1	1	2	2	3
	<b>Total score</b>	<b>33</b>	<b>28</b>	<b>29</b>	<b>34</b>	<b>37</b>	<b>41</b>
	<b>Average score</b>	<b>3.3</b>	<b>2.8</b>	<b>2.9</b>	<b>3.4</b>	<b>3.7</b>	<b>4.1</b>

The result shows that almost all of GCC countries official website indicates that they are similar, to some extent, by e-government needs, operation and provided services. Some of these websites used appropriate technologies to effectively provide government services and engage citizens in decision-making. In addition, information such as, available city services, along with information related to city council, executive sectors, as well as other departments and services are important to be defined for citizens and business participation. On the other hand, there are a lot of criteria that needs the adoption of government attention in order to be developed to fulfill the satisfactory usability, such as e-payment system.

In addition, technology indicator addressed most of e-government websites criteria which related to the development of ICTs, the way of presenting the content, and skills, website availability, and languages support. Most of these websites are in need of technical recommendation from time-to-time to be integrated in fully manner. For instance, Qatar is in need to enhance the variety of their website display languages to cover the majority of society spectrums. On the other hand, Oman needs to show more efforts toward e-services functionality to create a better interaction of citizens centric and an efficient engagement of public services.

Concerning content provision indicator, which covers criteria related to the availability of information, data about security and privacy policies, and help option are important for citizens participation. Most of those services performed quite well. However, it needs to be in updating mode for a better functionality. For example, according to the data analysis, Kuwait, Oman, and Qatar show a slow progress in maintaining security and privacy policies among GCC countries. On contrary, all GCC countries are performing quite-well in the way of representing the right information about each services being provided.

Regarding participation and engagement indicator, which cover criteria such as feedback and complains, and marketing and announcement activities, it is obvious that earning users trust consider as a challenge to every government. Therefore, GCC countries need to take in their consideration that users' opinion and confidence are what all e-government is about. Thus, working toward users feedback and complains will significantly create a

successful e-government project. Nevertheless, marketing and announcements awareness are important to light-out users about e-government initiatives. In this context, Oman and Qatar need to show more works towards the development of those factors to build up a better e-government engagement.

According to the criteria being evaluated, the acquired analysis has revealed how each GCC country is responding towards their e-services portal. This comparison helps to determine the strengths and the weaknesses among each GCC e-governments. It is a way for future development through better features consideration. On the other hand, this evaluation will help the decision-makers to point out the necessary changes in order to create a better system. Figure 2, represents the average scores of e-government official portals evaluation in each GCC countries.

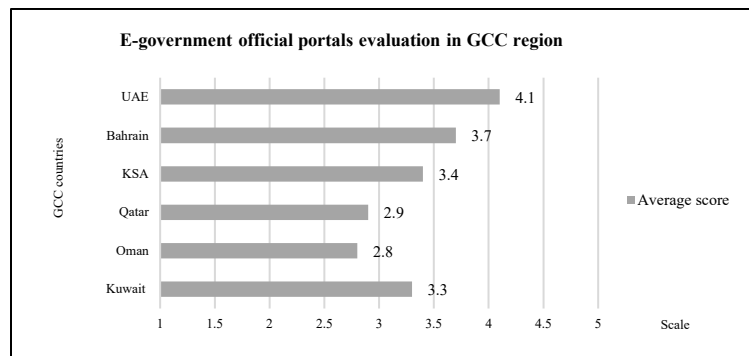


Figure 2. E-government evaluation project in GCC countries.

The outcomes of the analysis have shown that UAE has made a remarkable progress in term of promoting its e-services, which makes UAE scored the top among GCC countries. Bahrain came next with 3.7 in the overall score, followed by KSA as third, Kuwait has arrived as fourth, Qatar took a place as fifth, and lastly Oman showed in last with 2.8 in total evaluation project.

The idea around this analysis is to provide GCC governments with the opportunity to have a closer look into their goals and strategies for quick performance. It assists to create the right policies for a quicker development. In brief, the study examine out e-government initiatives in GCC countries by promoting a wider transparency in government. The outcomes of this evolution play an important role in enhancing the delivery of public services. In addition, they contribute to respond to a wider range of challenges, through the difficulties in the global economy.

## 6. Conclusion

This paper examines the potential development of GCC countries in pursuing its objective to reach the optimum of e-government transformation. It presents an overview of e-government initiatives in GCC region. Furthermore, A comparison study among GCC official websites is been proposed to evaluate the current status of e-services provided under specific criteria. The results of this study will guide governments and decision-makers to fill the missing gabs in order to establish a better e-government transformation.

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